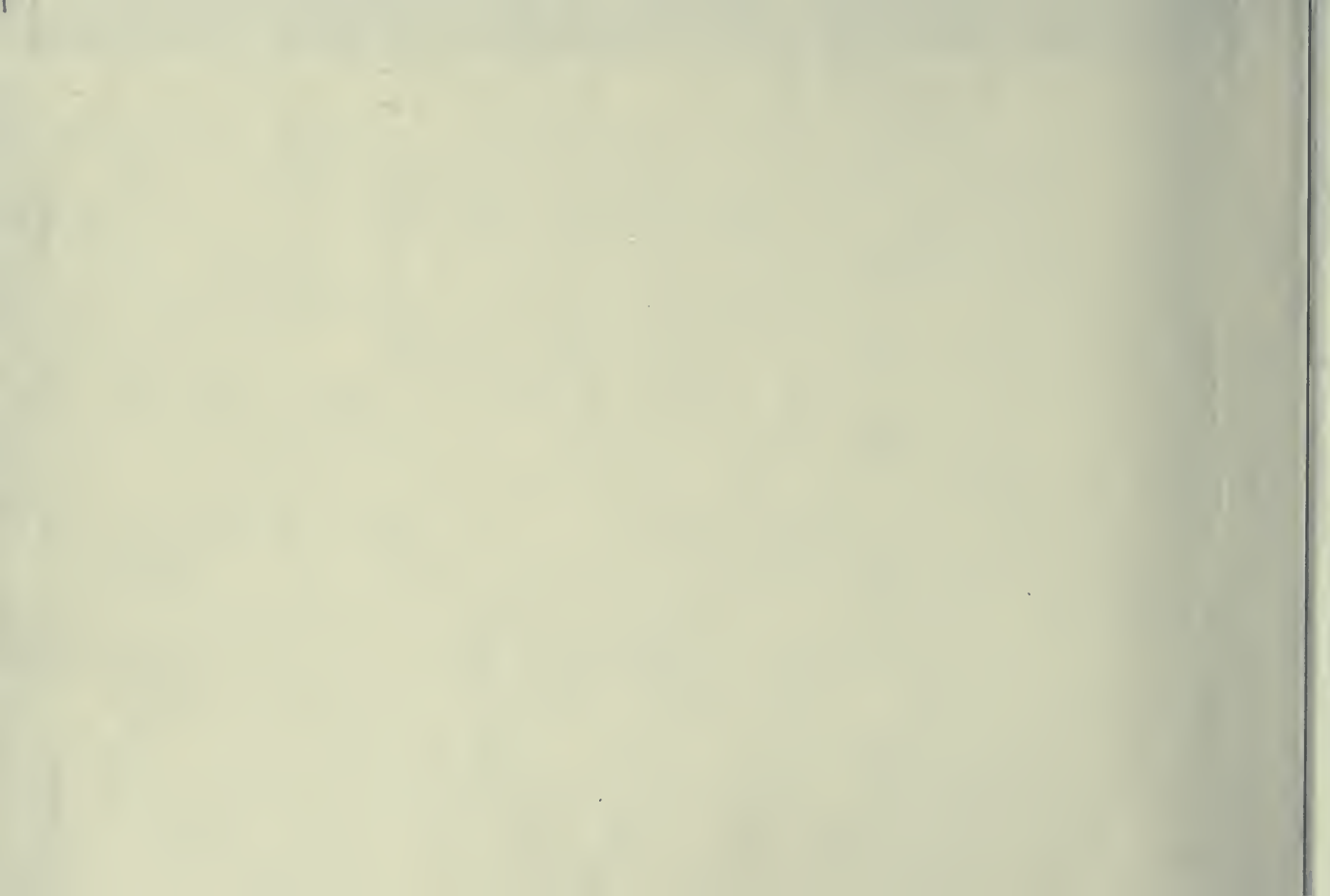


77



Cass Flexure Tests : Jun 30/ Jul 1 /1994







5 page #1

Thu/Fri

Emulsion Batches:

Date 1994 June 2/3 Observers [BIn] Wde/Hlw

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| Plate No. | Object                  | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T.         | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |          |
|-----------|-------------------------|--------------|---------------------|---------------------------------|-----------------------|-------------------|-------------|---------------|----------|
|           |                         |              |                     |                                 |                       |                   |             | Type/Filter   | Exp.     |
| CC22814   | stellar/comp<br>hartman |              |                     | 21:00                           |                       | 01239             | 403605      | FeAr<br>Clear | 60<br>60 |
| 816       | Bias (4)                |              |                     |                                 |                       |                   |             |               |          |
| 817       | comp                    |              |                     |                                 |                       |                   |             | FeAr<br>Clear | 60       |
| 818       | HD 93521                | 104242       | 380600              | 21:20:41                        |                       | 03:13             |             |               | 822      |
| 819       | HD 93521                | "            | "                   | <del>21:50:23</del><br>21:34:35 |                       |                   |             |               | 787      |
| 820       | Comp                    |              |                     |                                 |                       |                   |             | FeAr<br>Clear | 60       |
| 821       | HD 93521                | "            | "                   | 21:50:23                        |                       | 3:43              |             |               | 792      |
| 822       | HD 93521                | "            | "                   | 22:03:57                        |                       | 3:57              |             |               | 794      |
| 823       | Comp                    |              |                     |                                 |                       |                   |             | FeAr<br>Clear | 60       |
| 824       | HD 93521                | "            | "                   | 22:19:25                        |                       | 4:13              |             |               | 805      |
| 825       | HD 93521                | "            | "                   | 22:33:39                        |                       | 4:27              |             |               | 800      |
| 826       | Comp                    |              |                     |                                 |                       |                   |             | FeAr<br>Clear | 60       |
| 827       | Bias (4)                |              |                     |                                 |                       |                   |             |               |          |
| 828       | HD 93521                | "            | "                   | 22 50 07                        |                       | 4:43              |             |               | 800      |
| 829       | HD 93521                | "            | "                   | 23 03 53                        |                       | 4:58              |             |               | 887      |

Spectr. Temp.  $-100^{\circ}\text{C}$  Dome Temp./Hum.  $+12.2^{\circ}\text{C}/66.1\%$  Transparency Conditions Clear.....(lowly).....<sup>6</sup>  
 Focus  $6.83$  Fans turned on @ 2120  
 Spectr. Temp.  $6.91$  Dome Temp./Hum. .... South one turned off @ 2220

| Exp. Mtr. | Seeing    | Ptg. Mag. | Sp.  | Inst.    | Grating/Tilt        | Slit      | <del>Emulsion</del><br>Salem | P.H. | Program              | Remarks   | Quality |
|-----------|-----------|-----------|------|----------|---------------------|-----------|------------------------------|------|----------------------|---|---------|
| 12.2°     | for focus | test      |      | CASS CCD | 1800 2/mm<br>G=6065 | 300<br>um | G604A                        | 3/4  | focus test           | T = +12.2, $\theta_c = 6.83$                              | ✓       |
|           |           |           |      |          |                     |           |                              | 1    | bias 4. bat          | Chip warmed up during day. Had to be cooled at beginning. |         |
|           |           |           |      |          |                     |           |                              | 5    |                      |   |         |
| 1400      | 3-4"      | 7.04      | 095V |          |                     |           |                              | 6    | BLNO*                |   |         |
| 1400      | "         | "         | "    |          |                     |           |                              | 7    | "                    | Humidity 78% on catwalk                                   |         |
|           |           |           |      |          |                     |           |                              | 8    | "                    |   |         |
| 1400      | "         | "         | "    |          |                     |           |                              | 9    | BLNO*                |   |         |
| 1400      | "         | "         | "    |          |                     |           |                              | 10   | "                    |   |         |
|           |           |           |      |          |                     |           |                              | 11   |                      |   |         |
| 1335      | "         | "         | "    |          |                     |           |                              | 12   | BLN O*               |   |         |
| 1336      | "         | "         | "    |          |                     |           |                              | 13   | "                    |   |         |
|           |           |           |      |          |                     |           |                              | 14   |                      |   |         |
|           |           |           |      |          |                     |           |                              | 1    | bias 4. bat          |   |         |
| 1224      | "         | "         | "    |          |                     |           |                              | 15   | Blno* <sub>pgm</sub> |   |         |
| 1270      |           |           |      |          |                     |           |                              | 16   |                      |   |         |





Spectr. Temp. .... Dome Temp./Hum.  $10.8^{\circ}\text{C}/67.7\%$  Transparency Conditions ..... Clear 8  
 Focus ..... 6.83 .....  
 Spectr. Temp. .... Dome Temp./Hum. .... North Fan ON

| Exp. Mtr. | Seeing | Pig. Mag. | Sp.  | Inst.    | Grating/Tilt             | Slit      | Emulsion | P.H. <small>CV</small> | Program     | Remarks                 | Quality |
|-----------|--------|-----------|------|----------|--------------------------|-----------|----------|------------------------|-------------|-------------------------|---------|
|           |        |           |      | Cass CCD | 1800 $\mu$ /mm<br>G=6065 | 300 $\mu$ | 6604A    | 17                     |             | 81% Humidity on catwalk |         |
|           | 4-5"   | 6.86      | G8V  |          |                          |           |          |                        | Seeing Test | Dome WSW @ 2330         |         |
|           | "      | "         | "    |          |                          |           |          |                        | Seeing Test | very light w wind.      |         |
|           |        |           |      |          |                          |           |          | 18                     |             | -Telescope now flipped  |         |
| 1095      | 4-5"   | 7.04      | 095V |          | S/N = 160                |           |          | 19                     | Bln O* pgm  | to E side of piers.     |         |
| 1067      |        | 7.04      | 095V |          |                          |           |          | 20                     | Bln O* pgm  | 80% Humidity on         |         |
|           |        |           |      |          |                          |           |          | 21                     |             | Catwalk @ 0000          |         |
|           |        |           |      |          |                          |           |          | 1                      |             |                         |         |
| 856       |        | 7.04      | 095V |          | S/N ~ 145                |           |          | 22                     | Bln O* pgm  |                         |         |
| 760       |        | 7.04      | 095V |          | S/N ~ 140                |           |          | 23                     | Bln O* pgm  |                         |         |
|           |        |           |      |          |                          |           |          | 24                     |             |                         |         |
| 619       |        | 7.04      | 095V |          | S/N ~ 135                |           |          | 25                     | Bln O* pgm  |                         |         |
| 459       |        | 7.04      | 095V |          |                          |           |          | 26                     | Bln O* pgm  |                         |         |
|           |        |           |      |          |                          |           |          | 27                     |             |                         |         |





Spectr. Temp. .... Dome Temp./Hum.  $+10.2^{\circ}\text{C}/70.3\%$  Transparency Conditions ... Clear ..... 10  
 Focus  $6.83/6.85$   
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | √<br>Mag. | Sp.      | Inst.    | Grating/<br>Tilt   | Slit            | Emulsion | P.H. | Program                 | Remarks  | Quality |
|-----------|--------|-----------|----------|----------|--------------------|-----------------|----------|------|-------------------------|--|---------|
|           |        |           |          | Cass CCD | 1800l/mm<br>G=6065 | 300μ            | 6604 Å   | 28   |                         |  |         |
| 5500      |        | 5.28      | B6 IV    |          |                    |                 |          | 29   | Telluric Std.           | Air Mass @ End = 1.0216                            |         |
|           |        |           |          |          |                    |                 |          | 30   |                         |  |         |
|           |        |           |          |          |                    |                 |          | 5    |                         |  |         |
| 5678      |        | 4.02      | B9 IV-Vn |          |                    |                 |          | 6    | Telluric Std.           | Air Mass @ End = 2.733                             |         |
|           |        |           |          |          |                    |                 |          | 7    |                         |  |         |
|           |        |           |          |          |                    |                 |          | 8    |                         |  |         |
|           |        |           |          |          |                    | pinhole<br>slit |          | 11   | Scattered<br>light test | Max ADU ~ 12K<br>one unsaturated<br>one saturated. |         |
|           |        |           |          |          |                    |                 |          | 1    |                         |  |         |
|           |        |           |          | Cass CCD | 1800l/mm<br>G=5910 | 300μ            | 6400 Å   | 3/4  | Focus Test              | T = $+10.2^{\circ}\text{C}/foc = 6.85$             | ✓       |
|           |        |           |          |          |                    |                 |          | 1    |                         |  |         |
|           |        |           |          |          |                    |                 |          | 5    |                         |  |         |
| 1000      |        | 7.48      | G0 Ib    |          |                    |                 |          | 6    | Rm Pgm                  |  |         |
|           |        |           |          |          |                    |                 |          | 7    |                         |  |         |
|           |        |           |          |          |                    |                 |          | 8    |                         |  |         |





Spectr. Temp. .... Dome Temp./Hum.  $+10.2^{\circ}\text{C}/70.1\%$  Transparency Conditions *Clear*

Focus ..... *6.85*

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Mag. | Sp.  | Inst.    | Grating/<br>Tilt   | Slit      | Emulsion | P.H. | Program                  | Remarks   | Quality |
|-----------|--------|------|------|----------|--------------------|-----------|----------|------|--------------------------|-----------|---------|
| 300       | 4.5"   | 8.40 | G0Ib | Cass CCD | 1800l/mm<br>G=5910 | 300 $\mu$ | 6400Å    | 9    | Rm pgm                   |           |         |
|           |        |      |      |          |                    |           |          | 10   |                          |           |         |
|           |        |      |      |          |                    |           |          | 1    |                          |           |         |
|           |        |      |      |          |                    |           |          | 17   |                          |           |         |
| 1510      |        | 5.75 | G0Ib |          |                    |           |          | 18   | Rm pgm                   |           |         |
|           |        |      |      |          |                    |           |          | 21   |                          |           |         |
|           |        |      |      |          |                    |           |          | 21   |                          |           |         |
| 4000      |        | 2.91 | G0Ib |          |                    |           |          | 22   | Std. Vel                 | Twilight. |         |
|           |        |      |      |          |                    |           |          | 17   |                          |           |         |
|           |        |      |      |          |                    |           |          | 1    |                          |           |         |
|           |        |      |      |          |                    |           |          | 31   | Scattered<br>light test. |           |         |
|           |        |      |      |          |                    |           |          | 32   |                          |           |         |

All to Worm and Iersens

13 pg # 1

Emulsion Batches:

Date 1994 June 3/4 Observers [BLN] Wde./Hlw

css 386 clock 6 seconds ahead of WWV clock

| Plate No.     | Object                | R.A.<br>1900      | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |       |
|---------------|-----------------------|-------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|-------|
|               |                       |                   |                     |                         |                       |                   |             | Type/Filter   | Exp.  |
| cc22890       | Comp/stellar Hertmann | 124450            | 452812              |                         |                       | 0:30              |             | Fair<br>Clear | 60/60 |
| 92            | Bias(4)               |                   |                     |                         |                       |                   |             |               |       |
| 93            | Comp                  |                   |                     |                         |                       |                   |             | Fair<br>Clear | 60    |
| 94            | HD93521               | 104242            | 380600              | 205839                  |                       | 0253              | 37°         |               | 600   |
| 95            | HD93521               | "                 | "                   | 210902                  |                       | 0258              | "           |               | 600   |
| 96            | HD93521               | "                 | "                   | 211914                  |                       | 0312              | "           |               | 600   |
| 97            | Comp                  |                   |                     |                         |                       |                   |             | Fair<br>Clear | 60    |
| 98            | HD93521               | 104242            | 380600              | 213227                  |                       | 0326              | 37°         |               | 600   |
| 99            | HD93521               | "                 | "                   | 214244                  |                       | 0336              | "           |               | 599   |
| cc22900       | HD93521               | "                 | "                   | 215301                  |                       | 0347              | "           |               | 600   |
| 01            | Comp                  |                   |                     |                         |                       |                   |             | Fair<br>Clear | 60    |
| <del>02</del> | <del>HD93521</del>    | <del>104242</del> | <del>380600</del>   | <del>220650</del>       |                       |                   |             |               |       |
| 02            | Bias(4)               |                   |                     |                         |                       |                   |             |               |       |
| 03            | HD93521               | 104242            | 380600              | 220650                  |                       | 0401              |             |               | 600   |
| 04            | HD93521               | "                 | "                   | 221707                  |                       | 0411              |             |               | 600   |

Spectr. Temp. .... Dome Temp./Hum. .... 15.8°

Focus .... 6.78

Spectr. Temp. .... Dome Temp./Hum. .... 47.0%

Transparency Conditions . part./cloudy 14

Dome Fans off.

| Exp. Mtr.       | Seeing | Pig. Mag. | Sp.   | Inst.       | Grating/Tilt       | Slit  | Emulsion | P.H.          | Program     | Remarks                | Quality |
|-----------------|--------|-----------|-------|-------------|--------------------|-------|----------|---------------|-------------|------------------------|---------|
|                 | 1-2"   |           |       | CASS<br>CCD | 1800l/mm<br>G=6065 | 300um | 6604A    | 3/4           | focus test. |                        |         |
|                 |        |           |       |             |                    |       |          | 1             |             |                        |         |
|                 |        |           |       |             |                    |       |          | 5             |             |                        |         |
| 1730            |        | 7.04      | 09.5V |             |                    |       |          | 6             | BLNO*       |                        |         |
| missed it       |        | "         | "     |             |                    |       |          | 7             | "           |                        |         |
| 1580            |        | "         | "     |             |                    |       |          | 8             | "           |                        |         |
| <del>1580</del> |        |           |       |             |                    |       |          | 9             |             |                        |         |
| 1473            |        | 7.04      | 09.5V |             |                    |       |          | 10            | BLNO*       |                        |         |
| 1288            |        | "         | "     |             |                    |       |          | 11            | "           |                        |         |
| 1271            |        | "         | "     |             |                    |       |          | 12            | "           |                        |         |
|                 |        |           |       |             |                    |       |          | 13            |             |                        |         |
|                 |        | 7.04      | 09.5V |             |                    |       |          | <del>14</del> | BLNO*       |                        |         |
|                 |        |           |       |             |                    |       |          | 1             |             |                        |         |
| 1245            |        | 7.04      | 09.5V |             |                    |       |          | 14            | BLNO*       |                        |         |
| 1936            |        | "         | "     |             |                    |       |          | 15            | "           | Auto-guiding with SBIG |         |

SNR ~ 105



15pg #2

Date 1994 Jun 3/4 Observers [Blw] Wde/Hlw

Emulsion Batches:

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| Plate No. | Object                      | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |                           |
|-----------|-----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|---------------------------|
|           |                             |              |                     |                         |                       |                   |             | Type/Filter   | Exp.                      |
| cc22905   | HD93521                     | 104242       | 380600              | 22 27 29                |                       | 4:26 W            |             |               | 900                       |
| 906       | Comp                        |              |                     |                         |                       |                   |             | FeAr<br>Clear | 60                        |
| 907       | HD93521                     | 10 42 42     | 38 06 00            | 22 45 43                |                       | 4:44 W            |             |               | 900                       |
| 908       | HD93521                     | 10 42 42     | 38 06 00            | 23 01 00                |                       | 5:00 W            |             |               | 903                       |
| 909       | Comp                        |              |                     |                         |                       |                   |             | FeAr<br>Clear | 60                        |
| 910       | Bias (4)                    |              |                     |                         |                       |                   |             |               |                           |
| 911       | HD93521                     | 10 42 42     | 38 06 00            | 23 19 53                |                       | 5:20              |             |               | 985                       |
| 912       | HD93521                     | 10 42 42     | 38 06 00            | 23 36 43                |                       | 5:36              |             |               | 900                       |
| 913       | HD93521                     | "            | "                   | 23 52 09                |                       | 5:51              |             |               | 900                       |
| 914       | Comp                        |              |                     |                         |                       |                   |             | FeAr<br>Clear | <del>FeAr<br/>Clear</del> |
| 915       | <del>HD93521</del> Bias (4) |              |                     |                         |                       |                   |             |               |                           |
| 916       | HD93521                     | 104242       | 380600              | 0 11 46                 |                       | 06:11             |             |               | 900                       |
| 917       | HD93521                     | "            | "                   | 0 27 02                 |                       | 06 25             |             |               | 900                       |
| 918       | Comp                        |              |                     |                         |                       |                   |             | FeAr<br>Clear | 60                        |

Spectr. Temp. .... Dome Temp./Hum. 14:1°C / 48.5% Transparency Conditions clear, with some <sup>16</sup> thin haze.  
 Focus 6.78  
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Pig. Mag. | Sp.   | Inst.       | Grating/Tilt    | Slit  | Emulsion | P.H. | Program   | Remarks                   | Quality |
|-----------|--------|-----------|-------|-------------|-----------------|-------|----------|------|-----------|---------------------------|---------|
| 815       |        | 7.04      | 09.5V | CASS<br>LCD | 1800L<br>G=6065 | 300nm | 6609A    | 16   | BLNO*     | Auto-guiding with SBIG    |         |
|           |        |           |       |             |                 |       |          | 27   |           |                           |         |
| 1516      |        | 7.04      | 09.5V |             |                 |       |          | 17   | BLNO* pgm | Not auto-guiding any more |         |
| 1420      |        | "         | "     |             |                 |       |          | 18   | "         |                           |         |
|           |        |           |       |             |                 |       |          | 19   |           |                           |         |
|           |        |           |       |             |                 |       |          | 1    |           |                           |         |
| 1518      |        | 7.04      | 09.5V |             |                 |       |          | 20   | BLNO* pgm |                           |         |
| 1340      |        | 7.04      | 09.5V |             |                 |       |          | 21   | "         |                           |         |
| 1440      |        | "         | "     |             |                 |       |          | 22   | "         |                           |         |
|           |        |           |       |             |                 |       |          | 23   |           |                           |         |
|           |        |           |       |             |                 |       |          | 1    |           |                           |         |
| 1025      |        | 7.04      | 09.5V |             |                 |       |          | 24   | BLNO*     |                           |         |
| 516       |        | "         | "     |             |                 |       |          | 25   | "         |                           |         |
|           |        |           |       |             |                 |       |          | 25   |           |                           |         |

Pg #3

Emulsion Batches:

Date 1994 Jun 3/4 Observers [Bln] Wde/Hlw

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| Plate No. | Object   | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |      |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|------|
|           |          |              |                     |                         |                       |                   |             | Type/Filter   | Exp. |
| CC22919   | Comp     |              |                     |                         |                       |                   |             | FeAr<br>Clear | 60   |
| 920       | HD124224 | 14 07 12     | +2 53 00            | 00 59 19                |                       | 3:24W             |             |               | 300  |
| 921       | HD124224 | 14 07 12     | +2 53 00            | 01 04 33                |                       | 3:30 W            |             |               | 300  |
| 922       | HD124224 | 14 07 12     | +2 53 00            | 01 09 54                |                       | 3:35 W            |             |               | 306  |
| 923       | Comp     |              |                     |                         |                       |                   |             | FeAr<br>Clear | 60   |
| 924       | Bias (4) |              |                     |                         |                       |                   |             |               |      |
| 925       | HD124224 | 14 07 12     | +2 53 00            | 01 18 19                |                       | 3:43 W            |             |               | 300  |
| 926       | HD124224 | 14 07 12     | +2 53 00            | 01 23 40                |                       | 3:49 W            |             |               | 300  |
| 927       | HD124224 | 14 07 12     | +02 53 00           | 01 29 01                |                       | 3:54 W            |             |               | 300  |
| 928       | Comp     |              |                     |                         |                       |                   |             | FeAr<br>Clear | 60   |
| 929       | HD124224 | 14 07 12     | 02 53 00            | 01 36 27                |                       | 4:02 W            |             |               | 300  |
| 930       | HD124224 | 14 07 12     | 02 53 00            | 01 41 48                |                       | 4:07 W            |             |               | 300  |
| 931       | HD124224 | 14 07 12     | 02 53 00            | 01 47 08                |                       | 4:13 W            |             |               | 300  |
| 932       | Comp     |              |                     |                         |                       |                   |             | FeAr<br>Clear | 60   |
| 933       | HD124224 | 14 07 12     | 02 53 00            | 01 55 23                |                       | 4:12 W            |             |               | 300  |



Spectr. Temp. .... Dome Temp./Hum.  $13.2^{\circ}\text{C}/49.2$  Transparency Conditions Clear 18  
 Focus ..... 6.78  
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Pig-<br>VMag. | Sp.  | Inst.    | Grating/<br>Tilt    | Slit      | Emulsion | P.H. | Program     | Remarks | Quality |
|-----------|--------|---------------|------|----------|---------------------|-----------|----------|------|-------------|---------|---------|
|           |        |               |      | Cass CCD | 1800 l/mm<br>G=6065 | 300 $\mu$ | 6604A    | 26   |             |         |         |
| 1304      | 5-6"   | 5.0           | ApsI |          | SNR ~ 215           |           |          | 27   | Bln He* pgm |         |         |
| 1488      | "      | "             | "    |          | SNR ~ 230           |           |          | 28   | "           |         |         |
| 1274      | "      | "             | "    |          | SNR ~ 210           |           |          | 29   | "           |         |         |
|           |        |               |      |          |                     |           |          | 30   |             |         |         |
|           |        |               |      |          |                     |           |          | 1    |             |         |         |
| 1198      |        | 5.0           | ApsI |          | SNR ~ 200           |           |          | 5    | Bln He* pgm |         |         |
| 965       |        | "             | "    |          | SNR ~ 180           |           |          | 6    | "           |         |         |
| 1120      |        | "             | "    |          | SNR ~ 200           |           |          | 7    | Bln He* pgm |         |         |
|           |        |               |      |          |                     |           |          | 8    |             |         |         |
| 1121      |        | 5.0           | ApsI |          |                     |           |          | 9    | Bln He* pgm |         |         |
| 969       |        | "             | "    |          |                     |           |          | 10   | "           |         |         |
| 1035      |        | "             | "    |          |                     |           |          | 11   | "           |         |         |
|           |        |               |      |          |                     |           |          | 12   |             |         |         |
| 1055      |        | 5.0           | ApsI |          |                     |           |          | 13   | Bln He* pgm |         |         |

19pg # 4

Emulsion Batches:

Date 1994 Jun 3/4 Observers [Bl.] Wde/Hlw

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| Plate No. | Object     | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End    | Declination | Comparison     |       |
|-----------|------------|--------------|---------------------|-------------------------|-----------------------|----------------------|-------------|----------------|-------|
|           |            |              |                     |                         |                       |                      |             | Type/Filter    | Exp.  |
| CC22934   | HD124224   | 14 07 12     | 02 53 00            | 02 00 41                |                       | 4:26 W               |             |                | 324   |
| 935       | HD124224   | 14 07 12     | 02 53 00            | 02 06 31                |                       | 4:32 W               |             |                | 300   |
| 936       | Comp       |              |                     |                         |                       |                      |             | FeAr<br>Clear  | 60    |
| 937       | HD124224   | 14 07 12     | 02 53 00            | 02 14 29                |                       | 4:40 W               |             |                | 300   |
| 938       | HD124224   | 14 07 12     | 02 53 00            | 02 19 42                |                       | 4:45 W               |             |                | 306   |
| 939       | HD124224   | 14 07 12     | 02 53 00            | 02 25 03                |                       | 4:56 W               |             |                | 600   |
| 940       | Comp       |              |                     |                         |                       |                      |             | FeAr<br>Clear  | 60    |
| 941       | Bias (4)   |              |                     |                         |                       |                      |             | "              | "     |
| 942       | Comp       |              |                     |                         |                       |                      |             | "              | "     |
| 943       | HD178475   | 19 03 44     | 35 56 19            | 02 47 05                |                       | 0:21 W               |             |                | 510   |
| 944       | Comp       |              |                     |                         |                       |                      |             | "              | 60    |
| 945       | Comp       |              |                     |                         |                       |                      |             | FeAr<br>clear  | 60    |
| 946       | HD213998   | 22 30 13     | -00 37 59           | 03 14 15                |                       | <del>02</del> 2:42 E |             |                | 317   |
| 947       | Comp       |              |                     |                         |                       |                      |             | "              | 60    |
| 948       | Bias (4)   |              |                     |                         |                       |                      |             |                |       |
| 949-58    | 10 x Flats |              |                     |                         |                       |                      |             | Tung<br>1/4 Ap | 8 sec |



Spectr. Temp. ..... Dome Temp./Hum.  $12.8^{\circ}\text{C}/49.2$  Transparency Conditions ..... Clear

Focus ..... 6.78

Spectr. Temp. ..... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.   | Inst.    | Grating/<br>Tilt         | Slit              | Emulsion | P.H. | Program       | Remarks             | Quality |
|-----------|--------|-----------|-------|----------|--------------------------|-------------------|----------|------|---------------|---------------------|---------|
| 862       |        | 5.0       | Ap 5i | Cass CCD | 1800 $\lambda/\text{mm}$ | 300 $\mu\text{m}$ | 6604A    | 14   | Bln He* Str   |                     |         |
| 850       |        | "         | "     |          | G=6065                   |                   |          | 15   | "             |                     |         |
|           |        |           |       |          |                          |                   |          | 16   |               |                     |         |
| 760       |        | 5.0       | Ap 5i |          |                          |                   |          | 17   | Bln He* Str   |                     |         |
| 702       |        | "         | "     |          |                          |                   |          | 18   | "             |                     |         |
| 1127      |        | "         | "     |          |                          |                   |          | 19   | "             |                     |         |
|           |        |           |       |          |                          |                   |          | 20   |               |                     |         |
|           |        |           |       |          |                          |                   |          | 21   |               |                     |         |
| 3668      |        | 5.28      | B6 IV |          |                          |                   |          | 22   | Telluric Std. | Low Air Mass        |         |
|           |        |           |       |          |                          |                   |          | 23   |               |                     |         |
|           |        |           |       |          |                          |                   |          | 24   |               |                     |         |
| 5000      |        | 4.0       | B9 IV |          |                          |                   |          | 25   | Telluric Std. | High Air Mass (1.9) |         |
|           |        |           |       |          |                          |                   |          | 26   |               |                     |         |
|           |        |           |       |          |                          |                   |          | 1    |               |                     |         |
|           |        |           |       |          |                          |                   |          | 3    |               |                     |         |









Spectr. Temp. .... Dome Temp./Hum.  $+17.0/41.7$  Transparency Conditions ... CLEAR ..... 24  
 Focus ... 6.75 ..... No Fans tonight  
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.    | Grating/Tilt                 | Slit      | Emulsion | P.H. | Program     | Remarks                                 | Quality |
|-----------|--------|-----------|-----|----------|------------------------------|-----------|----------|------|-------------|---|---------|
|           |        |           |     | Cass CCD | 1800 $\lambda$ /mm<br>G=6665 | 300 $\mu$ | 6604R    | 3/4  | Focus Test. | ~140 people on 2 tours<br>ended at 2220 |         |
|           |        |           |     |          |                              |           |          | 1    | bias t. bar |   |         |
|           |        |           |     |          |                              |           |          | 5    |             |   |         |
| 1522      | 7.04   | 09.5V     |     |          |                              |           |          | 6    | Bln 0* pgm  |   |         |
| 945       | "      | "         |     |          |                              |           |          | 7    | Bln 0* pgm  |   |         |
|           |        |           |     |          |                              |           |          | 8    |             |   |         |
| 855       | 7.04   | 09.5V     |     |          |                              |           |          | 9    | Bln 0* pgm  |   |         |
| 716       | "      | "         |     |          |                              |           |          | 10   | Bln 0* pgm  |   |         |
| 568       | "      | "         |     |          |                              |           |          | 11   | Bln 0* pgm  |   |         |
|           |        |           |     |          |                              |           |          | 12   |             |   |         |
|           |        |           |     |          |                              |           |          | 1    |             |   |         |
| 703       | 7.04   | 09.5V     |     |          |                              |           |          | 13   | Bln 0* pgm  |   |         |
| 489       | "      | "         |     |          |                              |           |          | 14   | Bln 0* pgm  |   |         |
|           |        |           |     |          |                              |           |          | 15   |             |   |         |
|           |        |           |     |          |                              |           |          | 16   |             |   |         |

25pg #2

Emulsion Batches:

Date 1994 Jun 4/5 Observers [Blh] Mnz/Hlw

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 .....  
 .....

| Plate No. | Object   | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |      |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|------|
|           |          |              |                     |                         |                       |                   |             | Type/Filter   | Exp. |
| CC22979   | HD213998 | 22 30 13     | -00 37 59           | 01 15 33                |                       | 4:37 E            |             |               | 301  |
| 80        | "        | "            | "                   | 01 22 50                |                       | 4:30 E            |             |               | 303  |
| 81        | Comp     |              |                     |                         |                       |                   |             | FeAr<br>Clear | 60   |
| 82        | Bias (4) |              |                     |                         |                       |                   |             |               |      |
| 83        | Comp     |              |                     |                         |                       |                   |             | "             | "    |
| 84        | HD124224 | 14 07 12     | 02 53 00            | 01 46 09                |                       | 4:16 W            |             |               | 338  |
| 85        | "        | "            | "                   | 01 52 20                |                       | 4:20              |             |               | 300  |
| 86        | "        | "            | "                   | 01 57 43                |                       | 4:27              |             |               | 300  |
| 87        | Comp     |              |                     |                         |                       |                   |             | "             | 60   |
| 88        | HD124224 | 14 07 12     | 02 53 00            | 02 06 11                |                       | 4:35              |             |               | 300  |
| 89        | HD124224 | 14 07 12     | 02 53 00            | 02 12 14                |                       | 4:41              |             |               | 303  |
| 90        | "        | "            | "                   | 02 18 37                |                       | 4:48              |             |               | 300  |
| 91        | Comp     |              |                     |                         |                       |                   |             | "             | 60   |
| 92        | HD124224 | 14 07 12     | 02 53 00            | 02 28 06                |                       | 4:57 W            |             |               | 300  |
| 93        | HD124224 | "            | "                   | 02 33 33                |                       | 5:03 W            |             |               | 300  |

Spectr. Temp. .... Dome Temp./Hum. 15.4°C/47.7% Transparency Conditions clear ..... 26  
 Focus 6.75 .....  
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.        | Inst.    | Grating/Tilt                 | Slit | Emulsion | P.H. | Program      | Remarks                 | Quality |
|-----------|--------|-----------|------------|----------|------------------------------|------|----------|------|--------------|-------------------------|---------|
| 2050      |        | 4.02      | B9<br>IV-V | Cass CCD | 1800 $\lambda$ /mm<br>G=6065 | 300  | 6604A    | 17   | Telluric Std | X <sub>end</sub> = 3.97 |         |
| 2300      |        | "         | "          |          |                              |      |          | 17   | "            | High Air Mass           |         |
|           |        |           |            |          |                              |      |          | 19   |              |                         |         |
|           |        |           |            |          |                              |      |          | 1    |              |                         |         |
|           |        |           |            |          |                              |      |          | 20   |              |                         |         |
| 1958      |        | 5.0       | ApSi       |          |                              |      |          | 21   | Blu He* Str  |                         |         |
| 1640      |        | "         | "          |          |                              |      |          | 22   | "            |                         |         |
| 1525      |        | "         | "          |          |                              |      |          | 23   | "            |                         |         |
|           |        |           |            |          |                              |      |          | 24   |              |                         |         |
| 1328      |        | 5.0       | ApSi       |          |                              |      |          | 25   | Blu He* Str  |                         |         |
| 1200      |        | 5.0       | ApSi       |          |                              |      |          | 26   | Blu He* Str  |                         |         |
| 1003      |        | "         | "          |          |                              |      |          | 27   | "            |                         |         |
|           |        |           |            |          |                              |      |          | 28   |              |                         |         |
| 750       |        | 5.0       | ApSi       |          |                              |      |          | 5    | Blu He* Str  |                         |         |
| 690       |        | "         | "          |          |                              |      |          | 6    | "            |                         |         |



27PJ #3

Date 1994 Jun 4/5 Observers [Eha] Mnz/Hlw

Emulsion Batches:

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| Plate No. | Object     | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison     |      |
|-----------|------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|----------------|------|
|           |            |              |                     |                         |                       |                   |             | Type/Filter    | Exp. |
| cc22994   | HD124224   | 14 07 12     | 02 53 00            | 02 39 40                |                       | 5:09 W            |             |                | 301  |
| 95        | Comp       |              |                     |                         |                       |                   |             | Fe Ar<br>Clear | 60   |
| 96        | Bias (4)   |              |                     |                         |                       |                   |             |                |      |
| 97        | Comp       |              |                     |                         |                       |                   |             | Fe Ar<br>clear | 60   |
| 98        | HD187235   | 19 43 54     | 38 9 36             | 03 01 07                |                       | 0:00 W            |             |                | 600  |
| 99        | Comp       |              |                     |                         |                       |                   |             | Fe Ar<br>Clear | 60   |
| cc23000   | Comp       |              |                     |                         |                       |                   |             | Fe Ar<br>clear | 60   |
| 001       | HD213998   | 22 30 13     | -00 37 59           | 03 22 21                |                       | 2:33 E            |             |                | 1185 |
| 002       | Comp       |              |                     |                         |                       |                   |             | Fe Ar<br>clear | 60   |
| 003       | Bias (#4)  |              |                     |                         |                       |                   |             |                |      |
| 004-013   | Flat field |              |                     |                         |                       |                   |             | Tung<br>1/4 Ap | 8    |
|           |            |              |                     |                         |                       |                   |             |                |      |
|           |            |              |                     |                         |                       |                   |             |                |      |
|           |            |              |                     |                         |                       |                   |             |                |      |
|           |            |              |                     |                         |                       |                   |             |                |      |
|           |            |              |                     |                         |                       |                   |             |                |      |
|           |            |              |                     |                         |                       |                   |             |                |      |
|           |            |              |                     |                         |                       |                   |             |                |      |
|           |            |              |                     |                         |                       |                   |             |                |      |
|           |            |              |                     |                         |                       |                   |             |                |      |
|           |            |              |                     |                         |                       |                   |             |                |      |
|           |            |              |                     |                         |                       |                   |             |                |      |
|           |            |              |                     |                         |                       |                   |             |                |      |
|           |            |              |                     |                         |                       |                   |             |                |      |
|           |            |              |                     |                         |                       |                   |             |                |      |

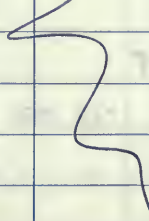
↓ wrong → flat  
~ Lu noted.



Spectr. Temp. .... Dome Temp./Hum.  $14.9^{\circ}\text{C}/47.7\%$  Transparency Conditions ... Clear ..... 28  
 Focus ..... 6.75 .....  
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.              | Inst.    | Grating/Tilt               | Slit      | Emulsion | P.H. | Program                | Remarks  | Quality |
|-----------|--------|-----------|------------------|----------|----------------------------|-----------|----------|------|------------------------|--|---------|
| 543       |        | 5.0       | ApS <sub>i</sub> | Cass CCD | 1800 $\ell$ /mm<br>G=6.065 | 300 $\mu$ | 6604A    | 7    | Bk He <sup>x</sup> pgn |  |         |
|           |        |           |                  |          |                            |           |          | 8    |                        |  |         |
|           |        |           |                  |          |                            |           |          | 1    |                        |  |         |
|           |        |           |                  |          |                            |           |          | 9    |                        |  |         |
| 3355      |        | 5.77      | B8 Vn            | Cass CCD | 1800 $\ell$ /mm<br>G=6.065 | 300 $\mu$ | 6604A    | 10   | Telluric STD search    | Low Air Mass<br>$X = 1.005$                            |         |
|           |        |           |                  |          |                            |           |          | 11   |                        |  |         |
|           |        |           |                  |          |                            |           |          | 12   |                        |  |         |
| 2969      |        | 4.02      | B9<br>V-Vn       | Cass CCD |                            |           |          | 13   | Telluric STD<br>search | lower Air mass than<br>previous (#79) $X \approx 1.77$ |         |
|           |        |           |                  |          |                            |           |          | 14   |                        |  |         |
|           |        |           |                  |          |                            |           |          | 1    |                        |  |         |
|           |        |           |                  |          |                            |           |          | 15   |                        | Telescope @ zenith.                                    |         |

All to WORM and Perseus



Pg#1

Emulsion Batches:

Date 1994 Jun 8/9 Observers Koh, Tn

CSS Clock Reset, Right on W.W.V. Time at Start

| Plate No.        | Object                 | R.A.<br>1900      | Declination<br>1900 | Starting Time<br>E.S.T.      | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |                      |
|------------------|------------------------|-------------------|---------------------|------------------------------|-----------------------|-------------------|-------------|---------------|----------------------|
|                  |                        |                   |                     |                              |                       |                   |             | Type/Filter   | Exp.                 |
| cc 2304/15       | Camp/stellar Hartman   |                   |                     |                              |                       |                   |             | FeAr<br>Clear | 69/60                |
| 016              | Bias X 4               |                   |                     |                              |                       |                   |             | F             |                      |
| 017              | Comp                   |                   |                     |                              |                       |                   |             | FeAr<br>Clear | 90                   |
| 018              | (HD 120315)<br>HR 5191 | 49 20 26          | 13 47 20            | 24 10 38                     |                       | 0 16 18W          |             |               | 41                   |
| 19               | "                      | "                 | "                   | 21 17 21                     |                       |                   |             |               | 48                   |
| 20               | Camp                   |                   |                     |                              |                       |                   |             | FeAr<br>Clear | 90                   |
| 21               | Camp                   |                   |                     |                              |                       |                   |             | "             | 90                   |
| 22               | HD 164284              | 17 55 33          | 04 21 42            | 21 <del>47 10</del><br>54 47 |                       | 03 09 E           |             |               | 125<br><del>77</del> |
| 23               | Camp                   |                   |                     |                              |                       |                   |             | FeAr<br>Clear | 90                   |
| 24               | Comp                   |                   |                     |                              |                       |                   |             | "             | 90                   |
| 25               | HD 77724               | 19 00 48.8        | 13 42 53            | 22 06 03                     |                       | 04 03 E           |             |               | 128                  |
| 26               | Comp                   |                   |                     |                              |                       |                   |             | FeAr<br>Clear | 90                   |
| 27               | Bias X 4               | using BSum 4. BAT |                     |                              |                       |                   |             |               |                      |
| CG 40227<br>-230 | HD 135891              | 15 12 30          | 43 7 26             | 22 25                        |                       |                   |             | 4x            | 67ms                 |
| 231              | "                      | "                 | "                   |                              |                       |                   |             | 2x            | 133ms                |
| 232              | "                      | "                 | "                   |                              |                       |                   |             |               |                      |

CCD  
 Spectr. Temp. .... -100°C ..... Dome Temp./Hum. 12.3 / 56.8 Transparency Conditions ..... Clear ..... 30  
 Focus ..... 6.77 .....  
 Spectr. Temp. ... Gain ... 90.5 Gain Dome Temp./Hum. ... 10.5°C 57.28H .....

| Exp. Mtr.               | Seeing | Ptg. Mag. | Sp.              | Inst.    | Grating/Tilt             | Slit     | Emulsion | P.H. | Program     | Remarks  | Quality |
|-------------------------|--------|-----------|------------------|----------|--------------------------|----------|----------|------|-------------|--|---------|
|                         |        |           |                  | CASS CCD | 1800 $\mu$ /mm<br>G=6065 | 30 $\mu$ | 6604A    | 3/4  | Focus test  | stellar<br>Row #30 W slightly Red                                  |         |
|                         |        |           |                  |          |                          |          |          | 1    |             |  |         |
|                         |        |           |                  |          |                          |          |          | 5    |             |  |         |
| 5500                    |        | 1.67      | B3V <sub>h</sub> |          |                          |          | Kohst    | 6s   | Kohst       | MAX 210KADU<br>S/N $\approx$ 400/1                                 |         |
| 5600                    |        | "         | "                |          |                          |          | un       | 6c   | "           |  |         |
|                         |        |           |                  |          |                          |          |          | 7    |             |  |         |
|                         |        |           |                  |          |                          |          |          | X    |             |  |         |
| *1039<br><del>266</del> | 5"     | 4.8       | B3e              |          |                          |          | Koh p9m  | 8    | Koh p9m     | SATURATES HD em<br>at 2000 exposure counts<br>MAX 9 KADU this time |         |
|                         |        |           |                  |          |                          |          |          | 7    |             |  |         |
|                         |        |           |                  |          |                          |          |          | 7.   |             |  |         |
| 5300                    | 6"     | 2.89      | A0V <sub>n</sub> |          |                          |          |          | 10   | Te Muric    | MAX 28KADU<br>Std Air MASS 2.00                                    |         |
|                         |        |           |                  |          |                          |          |          | 7    |             |  |         |
|                         |        |           |                  |          |                          |          |          | 1ci  |             |  |         |
|                         |        | 7.08      | F8V              |          |                          |          |          |      | Seeing test | Dome West.<br>medium gusty<br>N N W wind                           |         |
|                         |        |           |                  |          |                          |          |          |      | " "         |  |         |
|                         |        |           |                  |          |                          |          |          |      |             |  |         |

Only NE Fan on as  
 per standard procedure.



31 p9#2

Emulsion Batches:

Date 1994 Jun 8/9. Observers ... Kels., In .....

| Plate No. | Object              | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |      |
|-----------|---------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|------|
|           |                     |              |                     |                         |                       |                   |             | Type/Filter   | Exp. |
| cc23028   | Comp                |              |                     |                         |                       |                   |             | FeAr<br>clear | 90   |
| 29        | HD 193237           | 20 14 06     | 37 47 30            | 22 47 30                |                       |                   |             |               | 439  |
| 30        | "                   |              |                     | 22 49 08                |                       |                   |             |               | 48   |
| 31        | "                   |              |                     | 22 54 38                |                       |                   |             |               | 35   |
| 32        | Comp                |              |                     |                         |                       |                   |             | FeAr<br>clear | 90   |
| 33        | Comp                |              |                     |                         |                       |                   |             | "             | "    |
| * 34      | HD 200775           | 21 02 24     | 67 46 06            | 23 07 40                |                       | 04 50 E           |             |               | 750  |
| 35        | "                   | "            | "                   | 23 26 01                |                       | 04 30 E           |             |               | 629  |
| 36        | " edited<br>JUNE 13 | "            | "                   | 23 38 12                |                       | 04 21 E           |             |               | 577  |
| 37        | Comp                |              |                     |                         |                       |                   |             | FeAr<br>clear | 90   |
| 38        | BIAS x4             |              |                     |                         |                       |                   |             |               |      |
| 39        | Comp                |              |                     |                         |                       |                   |             | FeAr<br>clear | 90   |
| 40        | HD 201733           | 21 06 00     | 45 05 33            | 00 00 39                |                       | 04 09 E           |             |               | 396  |
| 41        | "                   | "            | "                   | 00 08 23                |                       | 03 49 E           |             |               | 1093 |
| 42        | "                   | "            | "                   | 00 27 12                |                       | 03 30 E           |             |               | 1231 |

Spectr. Temp. .... Dome Temp./Hum. +10.6... 56.8 Transparency Conditions ..... Clear ..... 32  
 Focus ... 6.7.7 .....  
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Hg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H.          | Program       | Remarks                           | Quality |
|-----------|--------|----------|-----|-------|--------------|------|----------|---------------|---------------|-----------------------------------|---------|
|           |        |          |     |       |              |      | 6604A    | 7             |               |                                   |         |
| 336       |        | 4.8      | Bsh |       |              |      |          | <del>13</del> | Koh pgm       |                                   |         |
| 380       |        | "        | "   |       |              |      |          | 13            | "             |                                   |         |
| 34A       |        | "        | "   |       |              |      |          | 13            | "             |                                   |         |
|           |        |          |     |       |              |      |          | 7             |               |                                   |         |
|           |        |          |     |       |              |      |          | 7             |               |                                   |         |
| 798       | 5"     | 7.2      | B   |       |              |      |          | 14            | HERBIG Be pgm | some Hd saturation (a few pixels) |         |
| 613       | "      | "        | "   |       |              |      |          | 15            | "             |                                   |         |
| 610       | "      | "        | "   |       |              |      |          | 16            | "             | 13.7K ADU max                     |         |
|           |        |          |     |       |              |      |          | 7             |               |                                   |         |
|           |        |          |     |       |              |      |          | 17            |               |                                   |         |
|           |        |          |     |       |              |      |          | <del>17</del> |               |                                   |         |
| 960       |        | 6.6      | Bsh |       |              |      |          | 17            | Koh pgm       |                                   |         |
| 2540      |        | "        | "   |       |              |      |          | 18            | "             |                                   |         |
| 2996      |        | "        | "   |       |              |      |          | 19            | "             |                                   |         |

\* Header wrong  
 This one looks like a flat  
 in June 13

339 #3

Emulsion Batches:

Date 1994 Jun. 8/9... Observers ... Kaku, To.....

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| Plate No.     | Object                   | R.A.<br>1900   | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |                  |
|---------------|--------------------------|----------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|------------------|
|               |                          |                |                     |                         |                       |                   |             | Type/Filter   | Exp.             |
| CC23043       | Comp (for previous star) |                |                     |                         |                       |                   |             | Fear<br>clear | 90               |
| 44            | Comp                     |                |                     |                         |                       |                   |             | "             | "                |
| <del>44</del> | HD 164447                | 175613         | 193036              | 020639                  |                       | 0006W             |             |               | 451              |
| 45            | Comp                     |                |                     |                         |                       |                   |             | Fear<br>clear | 90               |
| 46            | BIAS x 4                 | Sum of 4 Bias. |                     |                         |                       |                   |             |               |                  |
| 47            | Comp                     |                |                     |                         |                       |                   |             | Fear<br>clear | 90 <sub>SE</sub> |
| 48            | HD 187811                | 194646         | 222118              | 013445                  |                       | 0121E             |             |               | 179              |
| 49            | "                        | "              | "                   | 013950                  |                       | 0112E             |             |               | 366              |
| 50            | Comp                     |                |                     |                         |                       |                   |             | Fear<br>clear | 90               |
| 51            | Comp                     |                |                     |                         |                       |                   |             | "             | 90               |
| 52            | HD 217050                | 225241         | 480900              | 020234                  |                       | 0403E             |             |               | 257              |
| 53            | "                        | "              | "                   | 020552                  |                       |                   |             |               | 138              |
| 54            | Comp                     |                |                     |                         |                       |                   |             | Fear<br>clear | 90 <sub>S</sub>  |
| 55            | Comp                     |                |                     |                         |                       |                   |             | "             | 90 <sub>S</sub>  |
| 56            | HD 217675                | 225718         | 414700              | 021728                  |                       | 0348 E            |             |               | 82               |
| 57            | "                        | "              | "                   | 022047                  |                       |                   |             |               |                  |



CCD Spectr. Temp.  $-160^{\circ}\text{C}$  ..... Dome Temp./Hum.  $59, 1$  ..... Transparency Conditions  $\text{Clear}$  ..... 34

Focus  $6.77$  .....

Spectr. Temp. .... Dome Temp./Hum. ....  $\text{C LAMDA}$

| Exp. Mtr. | Seeing | Pr. Mag. | Sp. | Inst.       | Grating/Tilt        | Slit          | Emulsion | P.H.         | Program | Remarks                               | Quality          |
|-----------|--------|----------|-----|-------------|---------------------|---------------|----------|--------------|---------|---------------------------------------|------------------|
|           |        |          |     | CASS<br>CCD | 1800/n/mm<br>G=6065 | 300um<br>FULL | 6604P    | 7            |         |                                       |                  |
|           |        |          |     |             |                     |               |          | <del>7</del> |         | CCD Temp still $-160^{\circ}\text{C}$ |                  |
| 1215      | 4.6"   | 6.4      | B9c |             |                     |               |          | 20c          | Kohpgr  | 1.097 air mass                        | MAX ADU<br>4000. |
|           |        |          |     |             |                     |               |          | 7            |         |                                       |                  |
|           |        |          |     |             |                     |               |          | 1c           |         |                                       |                  |
|           |        |          |     |             |                     |               |          | 7            |         |                                       |                  |
| 1988      | 4"     | 4.9      | B3c |             |                     |               |          | 21           | Kohpgr  | MAX = 2K ADU                          |                  |
| 4600      |        |          |     |             |                     |               |          | 22           | " "     | MAX = 7K ADU                          |                  |
|           |        |          |     |             |                     |               |          | 7            |         |                                       |                  |
|           |        |          |     |             |                     |               |          | 7            |         |                                       |                  |
| 340       | 3.4"   | 5.4      | B2c |             |                     |               |          | 23           | Kohpgr  | MAX 10K ADU<br>1.33 air mass          |                  |
| 1160      |        |          |     |             |                     |               |          | 24           | "       |                                       |                  |
|           |        |          |     |             |                     |               |          | 7            |         |                                       |                  |
|           |        |          |     |             |                     |               |          | 7c           |         |                                       |                  |
| 3300      | 3.62   |          | B6c |             |                     |               |          | 25           | Kohpgr  |                                       |                  |
|           | "      |          | "   |             |                     |               |          | 25           | "       |                                       |                  |





spectr. Temp. .... Dome Temp./Hum.  $29.2 \dots 62.2$  Transparency Conditions ..... Clear - 5/14/79 <sup>36</sup>  
 Focus ..... 6.77  
 Spectr. Temp. .... Dome Temp./Hum.  $8.8^{\circ}C \dots 66.0\% H$   
clambda

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.            | Inst.       | Grating/Tilt    | Slit        | Emulsion | P.H. | Program                  | Remarks                                    | Quality |
|-----------|--------|-----------|----------------|-------------|-----------------|-------------|----------|------|--------------------------|--|---------|
|           |        |           |                | CASS<br>CCD | 1800/n<br>G=600 | 300<br>Full | 6600A    | 7    |                          |  |         |
|           |        |           |                |             |                 |             |          | "    |                          |  |         |
| 180       |        | 66        | Bsh            |             |                 |             |          | 26   | Koh pgm                  |  |         |
| 2400      | 3"     | "         | "              |             |                 |             |          | "    | "                        |  |         |
|           |        |           |                |             |                 |             |          | 7    |                          |  |         |
|           |        |           |                |             |                 |             |          | ker  |                          |  |         |
|           |        |           |                |             |                 |             |          | 7c   |                          |  |         |
|           |        | 54        | B3             |             |                 |             |          | 27c  | Kok pgm                  | MAX 4800ADU<br>(250/1 SIN)                 |         |
| 3600      | 2-3"   |           |                |             |                 |             |          | 28c  | "                        | MAX 6800ADU                                |         |
| 4200      |        |           |                |             |                 |             |          | 29c  |                          | very Bad cosmic RAY<br>event @ Helium line |         |
|           |        |           |                |             |                 |             |          | 7c   |                          |  |         |
|           |        |           |                |             |                 |             |          | 30c  |                          | MAX 1AK ADU                                |         |
|           | F=8.7C |           | Set still 6.77 |             |                 |             |          | 3/4c | focus test               | stellar row = 2 pixels<br>Blue             |         |
|           |        |           |                |             |                 |             |          | 1c   |                          |  |         |
|           |        |           |                |             |                 |             |          |      | CCD Temp held all night. |  |         |



CCD  
 Spectr. Temp. ... -100°C ..... Dome Temp./Hum. 16.9°C/54.5% Transparency Conditions ... Partially clouds ..... 38  
 Focus ... 6.80 ..... Fans off.  
 Spectr. Temp. C.GAIN. = 90 ..... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.    | Grating/<br>Tilt         | Slit              | Emulsion | P.H.<br>c9282 | Program     | Remarks                 | Quality |
|-----------|--------|-----------|-----|----------|--------------------------|-------------------|----------|---------------|-------------|-------------------------|---------|
|           |        |           |     | Cass CCD | 1800 $\mu$ /mm<br>G=5115 | 300 $\mu$<br>FULL | S303A    | 3/4           | Focus Test. | T = 16.9°C / foc = 6.80 | good    |
|           |        |           |     |          |                          |                   |          |               | bsum4. bat. |                         |         |
|           |        |           |     |          |                          |                   |          | 5c1           |             |                         |         |
| 339       | 2.3"   | 8.48      | M1  |          |                          |                   |          | 6c1           | Vys Std.    |                         |         |
|           |        |           |     |          |                          |                   |          | 7c1           |             |                         |         |
|           |        |           |     |          |                          |                   |          | 8             |             |                         |         |
| 68        |        | 10.7      | M0  |          |                          |                   |          | 9             | Vys Pgm     |                         |         |
|           |        |           |     |          |                          |                   |          | 10            |             |                         |         |
|           |        |           |     |          |                          |                   |          | 11            |             |                         |         |
| 82        |        | 10.11     | M0e |          |                          |                   |          | 12            | Vys Pgm     |                         |         |
|           |        |           |     |          |                          |                   |          | 13            |             |                         |         |
|           |        |           |     |          |                          |                   |          | 14            |             | Telescope on East       |         |
| 96        |        | 10.8      | M0  |          |                          |                   |          | 15            | Vys Pgm     | Side of piers           |         |
|           |        |           |     |          |                          |                   |          | 16            |             |                         |         |





Spectr. Temp. .... Dome Temp./Hum. 15.6°C / 49.4% Transparency Conditions Clear with some haze and low clouds. 40  
 Focus ..... 6.80  
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Pk. Mag. | Sp.  | Inst.    | Grating/Tilt             | Slit      | Emulsion | P.H. | Program | Remarks            | Quality |
|-----------|--------|----------|------|----------|--------------------------|-----------|----------|------|---------|--------------------|---------|
|           |        |          |      | Cass CCD | 1800 $\mu$ /mm<br>G=5115 | 300 $\mu$ | 5303A    | 1    |         | Telescope Reversed |         |
|           |        |          |      |          |                          |           |          | 17   |         |                    |         |
| 130       | 2-3"   | 10.6     | M0   |          |                          |           |          | 18   | Vys Pgm | = 45/1 S/N         |         |
|           |        |          |      |          |                          |           |          | 19   |         |                    |         |
|           |        |          |      |          |                          |           |          | 20   |         |                    |         |
| 140       | 2"     | 10.4     | M0   |          |                          |           |          | 21   | Vys Pgm | > 50/1 S/N         |         |
|           |        |          |      |          |                          |           |          | 22   |         |                    |         |
|           |        |          |      |          |                          |           |          | 1    |         |                    |         |
|           |        |          |      |          |                          |           |          | 23   |         |                    |         |
| 225       | 2"     | 9.95     | MIVe |          |                          |           |          | 24   | Vys Pgm |                    |         |
|           |        |          |      |          |                          |           |          | 25   |         |                    |         |
|           |        |          |      |          |                          |           |          | 26   |         |                    |         |
| 346       | 2"     | 9.15     | M5   |          |                          |           |          | 27   | Vys Pgm |                    |         |
|           |        |          |      |          |                          |           |          | 28   |         |                    |         |
|           |        |          |      |          |                          |           |          | 5    |         |                    |         |

4pg #3

+ Boyd Duffee

Emulsion Batches:

Date 1994 Jun 9/10 Observers Tn./H/W {Nys} + Nova Cas 1993

| Plate No.                          | Object  | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination  | Comparison<br>Type/Filter | Exp.                     |
|------------------------------------|---|--------------|---------------------|-------------------------|-----------------------|-------------------|--------------|---------------------------|--------------------------|
| cc23113                            | BD+45 2743  | 18 32 26     | +45 39 53           | 01 20 29                |                       | 0:02 E            | +46°         |                           | 934                      |
| 23119                              | Comp <sup>← note</sup> out of<br>number sequence. |              |                     |                         |                       |                   |              | Felt<br>Clear             | 20                       |
| 114                                | Bias x 4  |              |                     |                         |                       |                   |              |                           |                          |
| cg40233-6                          | <sup>4x</sup> HD176844                            | 18 57 03     | +40 32 36           |                         |                       |                   |              |                           | .067                     |
| cg40237/8                          | <sup>2x</sup> HD176844                            | 18 57 03     | +40 32 36           |                         | 0150                  | 0:14 E            |              |                           | .133                     |
| cc23 <sup>116</sup> <sub>116</sub> | Comp/Stelkan                                      | HARTMAN      |                     |                         |                       | No filter         | for Comps    | Felt<br>Clear             | 10/15                    |
| 117                                | Comp  |              |                     |                         |                       |                   |              | Felt<br>Clear             | <del>OG 385</del><br>40s |
| 118                                | Nova Cas 1993                                     | 23 36 59     | +56 57 45           | 02 56 51                |                       |                   |              | OG 385 in<br>Beam         | Stellar<br>55            |
| 120                                | Nova Cas 1993                                     | 23 36 59     | +56 57 45           | 02 58 28                |                       |                   | "            | "                         | 640                      |
| 121                                | "   | "            | "                   | 03 09 24                |                       |                   | "            | "                         | 720                      |
| 122                                | Comp  |              |                     |                         |                       |                   |              | Felt<br>Clear             | 40s                      |
| 123-5                              | 3x Bias (4)                                       |              |                     |                         |                       |                   |              |                           |                          |
| 126-9                              | 4x Flats  |              |                     |                         |                       | OG 385 in         | FLAT<br>Beam | lung<br>VAP               | 3s                       |

Spectr. Temp. .... \* Dome Temp./Hum. 14.7°C/47.9% Transparency Conditions .. Clear ..  
 Focus ..... 6.80 - 6.97 for 831 grating  
 Spectr. Temp. .... Dome Temp./Hum. +13.6°C 50.0% H

| Exp. Mtr. | Seeing | Ptg. Mag.       | Sp.    | Inst.              | Grating/Tilt                 | Slit              | Emulsion | P.H. | Program      | Remarks                               | Quality |
|-----------|--------|-----------------|--------|--------------------|------------------------------|-------------------|----------|------|--------------|---------------------------------------|---------|
| 174       |        | 9.83            | M0     | Cass CCD           | 1800 $\lambda$ /mm<br>G=5115 | 300 $\mu$         | S303     | 6    | Nys Std.     | Telescope Still Reversed              |         |
|           |        |                 |        |                    |                              |                   |          | 7    |              |                                       |         |
|           |        |                 |        |                    |                              |                   |          | 1    |              |                                       |         |
|           |        | 6.65            | M2 IV  |                    |                              |                   |          |      | Seeing Test  | Gusty N wind                          |         |
|           |        | 6.65            | M2 III |                    |                              |                   |          |      | Seeing Test  | Some E                                |         |
|           |        | <u>set 6.97</u> |        | <u>T = +14.2°C</u> | 831 $\lambda$ /mm<br>G=3616  | 300 $\mu$<br>Full | 6563A    | 3/4  | focus Test   | <del>430</del> 50 1024 & 1<br>CCD FMT |         |
| 5         |        | 211?            | em     |                    |                              |                   |          | 11   | Nova Cas Pgm |                                       |         |
| ~30       |        |                 | em     |                    |                              |                   |          | 12   | Nova Cas Pgm |                                       |         |
| 30        | 1.2"   |                 | em     |                    |                              |                   |          | 13   | " " "        |                                       |         |
|           |        |                 |        |                    |                              |                   |          | 14   |              |                                       |         |
|           |        |                 |        |                    |                              |                   |          | 1    |              |                                       |         |
|           |        |                 |        | All 16             | WORM &                       | Persens.          |          | 2c   |              |                                       |         |



43pg #1

Fri/SAT

Emulsion Batches:

Date ..1994 Jun 10/11... Observers ....Kokoy, Tr.....

| Plate No.     | Object       | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |          |
|---------------|--------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|----------|
|               |              |              |                     |                         |                       |                   |             | Type/Filter   | Exp.     |
| cc<br>23730-1 | Comp/stellar |              | Hartman             |                         |                       |                   |             | FeAr<br>clear | 30<br>60 |
| 132           | Bias(4)      |              |                     |                         |                       |                   |             |               |          |
| 133           | Comp         |              |                     |                         |                       |                   |             | FeAr<br>clear | 60       |
| 134           | HD 120 315   | 134720       | 49 2026             | 21 38 46                |                       | 0 56 W            |             |               | 47       |
| 35            | "            | "            | "                   | 21 44 53                |                       | 0 57 W            |             |               | 61       |
| 36            | Comp         |              |                     |                         |                       |                   |             | FeAr<br>clear | 60       |
| 37            | Comp         |              |                     |                         |                       |                   |             | "             | "        |
| 38            | HD 103287    | 114836       | 541500              | 21 58 36                |                       |                   |             |               | 86       |
| 39            | "            | "            | "                   | 22 00 51                |                       |                   |             |               | 100      |
| 40            | Comp         |              |                     |                         |                       |                   |             | FeAr<br>clear | 60       |
| 41            | bias(4)      |              |                     |                         |                       |                   |             |               |          |
| 42            | Comp         |              |                     |                         |                       |                   |             | FeAr<br>clear | 60       |
| 43            | HD 164284    | 1755 33      | 04 21 47            | 22 21 14                |                       | 2 37 E            |             |               | 511      |
| 44            | Comp         |              |                     |                         |                       |                   |             | FeAr<br>clear | 60       |
| 45-7          | Flats x 3    |              |                     |                         |                       |                   |             | Tung<br>A=1/2 | 1.10     |



<sup>CCD</sup>  
 Spectr. Temp. .... Dome Temp./Hum. ~~15.6~~ 44.7 Transparency Conditions ... clear, some clouds ..... 44  
 Focus ..... 6.83 .....  
 Spectr. Temp. .... Dome Temp./Hum. .... elambda 480 0 50 1024 4 1 CCD FMT

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst.  | Grating/Tilt      | Slit         | Emulsion | P.H. | Program    | Remarks    | Quality |
|-----------|--------|-----------|------|--------|-------------------|--------------|----------|------|------------|------------|---------|
|           |        |           |      | CASSCO | 1800/mm<br>G=4810 | 300x<br>FULL | 4865     | 3/4  | Focus test |            |         |
|           |        |           |      |        |                   |              |          | 1/2  |            |            |         |
|           |        |           |      |        |                   |              |          | 5    |            |            |         |
| 3075      |        | 1.67      | B3V6 |        |                   |              |          | 6    | std        |            |         |
| 3615      |        | "         | "    |        |                   |              |          | 7    |            | 10800 ADU  |         |
|           |        |           |      |        |                   |              |          | 8    |            |            |         |
|           |        |           |      |        |                   |              |          | 9    |            |            |         |
| 3342      |        | 2.44      | A0V  |        |                   |              |          | 10   | std        | 11600 ADU  |         |
| 3466      |        | "         | "    |        |                   |              |          | 11   |            |            |         |
|           |        |           |      |        |                   |              |          | 12   |            |            |         |
|           |        |           |      |        |                   |              |          | 1    |            |            |         |
|           |        |           |      |        |                   |              |          | 14   |            |            |         |
| 1878      | 1-2"   | 4.8       | B3e  |        |                   |              |          | 15   | Koh p gm   | Thin cloud |         |
|           |        |           |      |        |                   |              |          | 16   |            | max 13.6   |         |
|           |        |           |      |        |                   |              |          | 17   |            |            |         |

45 pg#2

Emulsion Batches:

Date ... 1994 Jan 10/11 Observers Kok., T.R. ....

| Plate No. | Object       | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |      |
|-----------|--------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|------|
|           |              |              |                     |                         |                       |                   |             | Type/Filter   | Exp. |
| CC 23 #48 | Comp         |              |                     |                         |                       |                   |             | Felt<br>Clear | 60s  |
| 49        | HD 193237    | 20 14 06     | 37 43 18            | 22 51 11                |                       | 4 22 E            |             |               | 219  |
| 50        | "            | "            | "                   | 22 56 26                |                       | 4 16 E            |             |               | 206  |
| 51        | "            | "            | "                   | 23 01 29                |                       |                   |             |               | 247  |
| 52        | Comp         |              |                     |                         |                       |                   |             | Felt<br>Clear | 60s  |
| 53        | Comp         |              |                     |                         |                       |                   |             | "             | "    |
| 54        | HD 200775    | 21 00 21     | 67 46 06            | 23 20 54                |                       | 4 27 E            |             |               | 726  |
| 55        | "            | "            | "                   | 23 34 29                |                       |                   |             |               | 1600 |
| 56        | Comp         |              |                     |                         |                       |                   |             | Felt<br>Clear | 60   |
| 57-61     | Plats X5     |              |                     |                         |                       |                   |             |               |      |
| 62        | Bias (4)     |              |                     |                         |                       |                   |             |               |      |
| 63-4      | Comp/stellar | hartman      |                     |                         |                       |                   |             | Felt<br>Clear | 60   |

<sup>CCD</sup>  
Spectr. Temp. .... -100 °C .....

Dome Temp./Hum. .... 14.6 °C 46.9% H

Transparency Conditions .... P.A.R.T. cloudy ..... 46

Focus .... 6.83 .....

Dome Temp./Hum. ....

— increasing cloud

C LAMBDA

| Exp. Mtr. | Seeing | Ptg. Mag.    | Sp.           | Inst.       | Grating/Tilt    | Slit         | Emulsion | P.H. | Program | Remarks                    | Quality      |
|-----------|--------|--------------|---------------|-------------|-----------------|--------------|----------|------|---------|----------------------------|--------------|
|           |        |              |               | CASS<br>CCD | 1800nm<br>G-310 | 300µ<br>FULL | 4865Å    | 18ci |         |                            |              |
| 698       |        | 4.8          | Bsh           |             |                 |              |          | 196  | Kohpgm  | MAX 11.5K ADU<br>Strong Em |              |
| 530       |        | "            | "             |             |                 |              |          | 20   | "       | MAX 6.5 KADU               |              |
| 1300      | 1.2"   | "            | "             |             |                 |              |          | 21   | "       | MAX 8.0K ADU               |              |
|           |        |              |               |             |                 |              |          | 22   |         |                            |              |
|           |        | <del>7</del> | <del>B5</del> |             |                 |              |          | 23   | 1       |                            |              |
| 42        | 2"     | <del>7</del> | <del>B5</del> |             |                 |              |          | 24   | Kohpgm  | Thicker cloud              | SIX<br>260/1 |
| -         |        | <del>7</del> | <del>B5</del> |             |                 |              |          | 25   | "       | 14.6 K                     |              |
|           |        |              |               |             |                 |              |          | 26   |         |                            |              |
|           |        |              |               |             |                 |              |          | 27   |         |                            |              |
|           |        |              |               |             |                 |              |          | 1    |         |                            |              |
|           |        |              |               |             |                 |              |          | 3/4  |         |                            |              |

47

#1

Notes:  
CSS 386

Emulsion Batches:

Date 1994.. June. 12. 113 Observers [B.L.] [H.] / T.n. .... See ahead of  
w/v time......  
.....  
.....

| Plate No.           | Object                    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination    | Comparison                 |           |
|---------------------|---------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|----------------|----------------------------|-----------|
|                     |                           |              |                     |                         |                       |                   |                | Type/Filter                | Exp.      |
| <del>231</del> 65-6 | Hartman<br>comp / stellar |              |                     | 20:35:48                |                       |                   |                | Fe Ar<br>clear             | 3y<br>/60 |
| 167                 | BIAS (4)                  |              |                     | 20:48                   |                       |                   |                |                            |           |
| 68                  | Comparison                |              |                     | 20:52:43                |                       |                   |                | Fe Ar<br>clear             | 60        |
| 69                  | HD 87901                  | 10 03 03     | +12 27 22           | 21:01:59                |                       |                   |                | <del>Fe Ar<br/>clear</del> |           |
| 70                  | HD 87901                  |              |                     | 21:04:30                |                       |                   |                | <del>Fe Ar<br/>clear</del> | 26        |
| 71                  | Comparison                |              |                     |                         |                       |                   |                | Fe Ar<br>clear             | 60        |
| 72                  | Comparison                |              |                     |                         |                       |                   |                | Fe Ar<br>clear             | 60        |
| 73                  | HD 93521                  | 10 42 42     | + 33 06 00          | 21:15:12                |                       | 3:47:48           |                | <del>Fe Ar<br/>clear</del> | 688       |
| 74                  | HD 93521                  |              |                     | 21:26:57                | 21:40                 | 3:59:33           |                |                            | 792       |
| 75                  | Comparison                |              |                     | 21:41:17                |                       |                   |                | Fe Ar<br>clear             | 60        |
| 76                  | HD 93521                  |              |                     | 21:43:47                |                       | 4:08:21           |                |                            | 787       |
| 77                  | BIAS (4)                  |              |                     | 21:58:02                |                       |                   |                |                            |           |
| 78                  | HD 93521                  |              |                     | 21:59:05                | 22:12                 | 4:32:12           | Air men<br>L57 |                            | 805       |
| 79                  | Comparison                |              |                     | 22:13:41                |                       |                   |                | Fe Ar<br>clear             |           |
| 80                  | HD 93521                  |              |                     | 22:16:40                | 22:30                 | 4:49              |                |                            | 800       |



Spectr. Temp. <sup>CCD</sup> -100°C ..... Dome Temp./Hum. 20.3°C / 67.7% Transparency Conditions .....

Focus ..... 6.73 .....

Fans ON

Spectr. Temp. .... Dome Temp./Hum. 19.0°C ..... 73.3% H

CCDFMT 480 0 50 1024 41

| Exp. Mtr. | Seeing   | Filter<br>Mag.   | Sp. | Inst.       | Grating/<br>Tilt            | Slit           | Emission<br>element | P.H. | Program              | Remarks                                      | Quality |
|-----------|----------|------------------|-----|-------------|-----------------------------|----------------|---------------------|------|----------------------|--|---------|
| +20.3°C   | Set 6.73 |                  |     | Cass<br>CCD | 1800 $\lambda$ 1m<br>G=6065 | 300<br>$\mu$ m | 6604 Å              | 3/4  | Focus Test           | 67% humidity in entrance                     |         |
|           |          |                  |     |             |                             |                |                     | 1ci  |                      |  |         |
|           |          |                  |     |             |                             |                |                     | 5    |                      | TELESCOPE REVERSED<br>(on East side of pier) |         |
| 2250      | 1.36     | B7V              |     |             |                             |                |                     | 6    | Telluric<br>standard |  |         |
| 2200      |          |                  |     |             |                             |                |                     | 7    | - " -                |  |         |
|           |          |                  |     |             |                             |                |                     | 8    |                      |  |         |
|           |          |                  |     |             |                             |                |                     | 8    |                      |  |         |
| 800       | 7.04     | <del>09.5V</del> |     | S/N 180:1   |                             |                |                     | 8    | B10 pgm              | 72% humidity in entrance                     | 19.9°   |
| 845       |          |                  |     |             |                             |                |                     | 9    |                      |  |         |
|           |          |                  |     |             |                             |                |                     | 10   |                      |  |         |
| 590       |          |                  |     | S/N 160:1   |                             |                |                     | 11   |                      | intermittent cloud                           | 19.5°   |
|           |          |                  |     |             |                             |                |                     | 1ci  |                      |  |         |
| 845       |          |                  |     | S/N 180:1   |                             |                |                     | 12   |                      |  |         |
|           |          |                  |     |             |                             |                |                     | 5    |                      |  |         |
| 815       |          |                  |     |             |                             |                |                     | 13   |                      |  |         |

NOTE:  
"slow" exposure meter.  
max 7576 ADU

49

p942

Date 1994 Jun 12/13... Observers [Bln.] III./Ta.....

Emulsion Batches:

.....  
 .....  
 .....

| Plate No. | Object     | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination      | Comparison     |                 |
|-----------|------------|--------------|---------------------|-------------------------|-----------------------|-------------------|------------------|----------------|-----------------|
|           |            |              |                     |                         |                       |                   |                  | Type/Filter    | Exp.            |
| 23181     | HD 93521   | 10 42 42     | +38 06              | 22 30 43                |                       | 5:03:52           | Air mass<br>1.77 |                | 805             |
| 282       | Comparison |              |                     |                         |                       |                   |                  | Fe Ar<br>clear | 60              |
| 83        | B/A5(4)    |              |                     |                         |                       |                   |                  |                |                 |
| 84        | Comp       |              |                     | 22:53:36                |                       |                   |                  | Fe Ar<br>clear | 60              |
| 85        | HD 136049  | 15 17 43     | +33 17 30           | 22:58:26                |                       | 0:48:46           | Air mass<br>1.03 |                | estimate<br>240 |
| 86        | Comparison |              |                     | 23:11:53                |                       |                   |                  | Fe Ar<br>clear | 60              |
| 87        | Bias (4)   |              |                     | 23:13:31                |                       |                   |                  |                |                 |
| 88        | Comparison |              |                     | 23:18:12                |                       |                   |                  | Fe Ar<br>clear | 60              |
| 89        | HD 93521   | 10 42 42     | +38 06 00           | 23:21:17                |                       | 5:56:51           | Air mass<br>2.32 |                | 942             |
| 90        | HD 93521   |              |                     | 23:37:17                |                       | 6:12:00           | 2.54             |                | 900             |
| 91        | Comparison |              |                     | 23:53:04                |                       |                   |                  | Fe Ar<br>clear | 60              |
| 92        | HD 93521   |              |                     | 23:55:38                |                       | 6:30:31           | Air mass<br>2.87 |                | 900             |
| 93        | HD 93521   |              |                     | 0:11:17                 |                       | 6:46:16           | 3.23             |                | 900             |
| 94        | Comparison |              |                     | 0:27:10                 |                       |                   |                  |                |                 |
| 95        | Bias (4)   |              |                     | 0:28:31                 |                       |                   |                  |                |                 |

CCD Spectr. Temp.  $-160^{\circ}\text{C}$  .....

Dome Temp./Hum.  $+19.1^{\circ}\text{C}$   $73.5\%$

Transparency Conditions *mostly clear* .....

50

Focus *617.3* .....

Spectr. Temp. ....

Dome Temp./Hum. ....

*c lambda*

| Exp. Mtr. | Seeing | Ex. Mag.        | Sp.             | Inst.       | Grating/Tilt                   | Slit                      | Emulsion | P.H. | Program              | Remarks   | Quality |
|-----------|--------|-----------------|-----------------|-------------|--------------------------------|---------------------------|----------|------|----------------------|---|---------|
| 787       | 2"     | 7.04            | 09.5V           | CASS<br>CCD | 1800 $\mu\text{m}$ /<br>G=6065 | 300 $\mu\text{m}$<br>FULL | 660A     | 14ci | Bln O* pgm           |   | 19.1°   |
|           |        |                 |                 |             |                                |                           |          | 5ci  |                      |   |         |
|           |        |                 |                 |             |                                |                           |          | 1ci  |                      |   |         |
|           |        | <del>5.37</del> | <del>B9Vn</del> |             |                                |                           |          | 5ci  |                      |   |         |
| 1550      |        | 5.37            | B9Vn            |             |                                |                           |          | 15ci | Telluric<br>standard | NOTE: ccd crash<br>during "input"<br>→ reset CDS 386 twice<br>(caused by<br>disk full on Perseus) | 18.9°   |
|           |        |                 |                 |             |                                |                           |          | 5ci  |                      |   |         |
|           |        |                 |                 |             |                                |                           |          | 1ci  |                      |   | 18.8°   |
|           |        |                 |                 |             |                                |                           |          | 5ci  |                      |   |         |
| 634       |        | 7.04            | 09.5E           | 170:1       | SIN                            |                           |          | 16ci | Bln O* pgm           |   | 18.3°   |
| 809       |        |                 |                 |             |                                |                           |          | 16ci |                      |   |         |
|           |        |                 |                 |             |                                |                           |          | 5ci  |                      |   | 18.3°   |
| 460       |        |                 |                 | SIN         | 65:1                           |                           |          | 16ci |                      | 83% humidity on catwalk   | 18.3°   |
| 383       |        |                 |                 | SIN         | 150:1                          |                           |          | 16ci |                      |   | 18.0°   |
|           |        |                 |                 |             |                                |                           |          | 5ci  |                      |   |         |
|           |        |                 |                 |             |                                |                           |          | 1ci  |                      |   |         |

Date .1994. Jun 12. 13. Observers [Bln]. III. I.T.N. ....

| Plate No.      | Object                 | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination      | Comparison     |                  |
|----------------|------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|------------------|----------------|------------------|
|                |                        |              |                     |                         |                       |                   |                  | Type/Filter    | Exp              |
| 23196          | H093521                | 104242       | +280600             | 0:30:27                 |                       | 7:05:26           | Air mass<br>3.70 |                | 900              |
| 197            | Comparison             |              |                     | 0:46:23                 |                       |                   |                  | Fe Ar<br>clear | 60               |
| 198            | Comparison             |              |                     | 0:51:45                 |                       |                   |                  | Fe Ar<br>clear | 60               |
| 199            | Cu Vir HD124224        | 140712       | +25300              | 0:54:16                 |                       | 4:05:23           | Air mass<br>2.65 |                | 900              |
| 200            | Cu Vir HD124224        |              |                     | 1:10:10                 |                       | 4:21:20           | 3.02             |                | 910              |
| 201            | Comparison             |              |                     | 1:26:22                 |                       |                   |                  | Fe Ar<br>clear | 60               |
| 202            | Bias (4)               |              |                     | 1:27:47                 |                       |                   |                  |                |                  |
| 203            | Cu Vir HD124224        |              |                     | 1:28:53                 |                       | 4:55:4            | Air mass<br>4.31 |                | 1800             |
| 204            | Comparison             |              |                     | 1:59:45                 |                       |                   |                  | Fe Ar<br>clear | 60               |
| 205            | <del>Cu Vir</del> FLAT |              |                     |                         |                       |                   |                  | 1/4 up<br>Tung | 9                |
| 206-227        | FLATS                  |              |                     |                         |                       | 5:31:12           |                  | 1/4 up<br>Tung | 9                |
| 220            | Bias (4)               |              |                     | 2:34:40                 |                       |                   |                  |                |                  |
| CG402 39<br>42 | HD187120               | 1943.2       | +452900             |                         |                       | 00 10 W           | +45°44'          | 4x             | 67ms             |
| CG402 43<br>44 | "                      | "            | "                   |                         |                       |                   |                  | 2x             | 133 <sub>g</sub> |
| cc23229        | Comparison             |              |                     | 2:58:36                 |                       |                   |                  | Fe Ar<br>clear | 60               |



Spectr. Temp. ... Dome Temp./Hum. 18.0°C / 78.3% Transparency Conditions ... *PART cloudy* ...  
 Focus ... *6.73* ...  
 Spectr. Temp. ... Dome Temp./Hum. ...

| Exp. Mtr. | Seeing               | V. Pos. Mag. | Sp.   | Inst.    | Grating/Tilt | Slit             | Emulsion                    | P.H.         | Program                      | Remarks   | Quality |
|-----------|----------------------|--------------|-------|----------|--------------|------------------|-----------------------------|--------------|------------------------------|---|---------|
| 218       | 7.04                 | 09.5V        |       | Cass CCD | 1800 21m     | 300<br>G=6065 um | <del>clambda</del><br>6604A | 16ci<br>Sci  | B1n O* pgn                   | S/N 180:1   |         |
| 1763      | 2-3"                 | 5.00         | Ap Si | S/N      | 345:1        |                  |                             | 17ci<br>Sci  | B1n He K<br><del>Ap Si</del> |   | 17.8°   |
| 1727      |                      |              |       | S/N      | 370:1        |                  |                             | 17ci<br>Sci  |                              |   | 17.6°   |
| 1324      |                      |              |       | S/N      | 310:1        |                  |                             | 17ci<br>Sci  |                              |   |         |
|           |                      |              |       |          |              |                  |                             | 18ci<br>18ci |                              | NOTE: ADU levels of flats range 12500-14900                           |         |
|           | OK 7.52 KO III       |              |       |          |              |                  |                             | 1ci          |                              |   |         |
|           | VERY light west wind |              |       |          |              | Above 300um slit |                             | 18ci         | Seeing Test                  | Telescope on W. side of pier<br>fence on j dome west<br>NORTH EAST ON |         |
|           | Dome West            |              |       |          |              |                  |                             | Sci          | li u                         |   | 16.7°   |



Spectr. Temp. .... Dome Temp./Hum. 16.7°C / 83.7% Transparency Conditions .. Increasing cloud .....

Focus ..... 6.73 .....

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr.       | Seeing | V-<br>Mag.      | Sp.               | Inst.       | Grating/<br>Tilt     | Slit      | Emulsion<br>λ | P.H.         | Program                           | Remarks  | Quality                                     |
|-----------------|--------|-----------------|-------------------|-------------|----------------------|-----------|---------------|--------------|-----------------------------------|--|---|
| <del>+355</del> | 2"     | <del>6.31</del> | AZV <sub>II</sub> | Cass<br>CCD | 1800 λ 1mm<br>G=6065 | 300<br>um | 6604A         | 17ci<br>19ci | Telluric Std<br><del>search</del> | (Holding OK)<br>CCDT still - 100%<br>NOTE: possibly<br>slight emission in H $\alpha$<br>and line is asymmetric   | <del>250:1</del><br><del>570</del><br>16:60 |
|                 |        |                 |                   |             |                      |           |               | 5ci<br>1ci   |                                   |  |   |
|                 |        |                 |                   |             |                      |           |               | 3/4          | Focus TEST                        |  |   |
|                 |        |                 |                   |             |                      |           |               |              |                                   | <u>Note.</u> a 15 pixel Row shift seen between 1st focus test of night and last one. Something shifted during the night more than normally would be expected.                              |   |
|                 |        |                 |                   |             |                      |           |               |              |                                   | All to WORM. & Perseus now - [note: pixel shift was between 1st focus test with Telescope on west side, and 1st comp with Telescope on East side. Should be no problem with observations.] |   |
|                 |        |                 |                   |             |                      |           |               |              |                                   | In<br>June 14  |   |



55pg #1

Emulsion Batches:

Date 1994 Jun 14/15 Observers III/Hlw [Blh]

| Plate No. | Object       | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination      | Comparison    |       |
|-----------|--------------|--------------|---------------------|-------------------------|-----------------------|-------------------|------------------|---------------|-------|
|           |              |              |                     |                         |                       |                   |                  | Type/Filter   | Exp.  |
| cc23235/6 | Comp/Stellar | Hartman      | Mask                | posn'                   |                       |                   |                  | FeAr<br>Clear | 60/60 |
| 37        | Bias (4)     |              |                     | 20:47                   |                       |                   |                  | FeAr<br>clear | 60    |
| 38        | Comparison   |              |                     | 20:57:16                |                       |                   |                  | FeAr<br>clear | 60    |
| 39        | HD93521      | 10 42 42     | +38.06              | 21:00:26                |                       | 3:41 W            | Air mass<br>1.33 |               | 794   |
| 40        | HD93521      | 10 42 42     | +38 06 00           | 21:14:05                |                       |                   |                  |               | 900s  |
| 41        | Comparison   |              |                     | 21:30:56                |                       | 3:56 W            | Air mass<br>1.39 | FeAr<br>Clear | 60s   |
| 42        | Comparison   |              |                     | 21:35:36                |                       |                   |                  | FeAr<br>Clear | 60    |
| 43        | HD87901      | 10 03 03     | +12 27 22           | 21:38:35                |                       |                   | 4:46 W           |               | 27    |
| 44        | HD87901      | 10 03 03     | +12 27 22           | 21:40:34                |                       | Air mass<br>2.80  | 4:48 W           |               | 55    |
| 45        | Comparison   |              |                     | 21:42:55                |                       |                   |                  | FeAr<br>Clear | 60s   |
| 46        | Comparison   |              |                     | 21:52:02                |                       |                   |                  | FeAr<br>Clear | 60s   |
| 47        | Bias (4)     |              |                     | 21:53                   |                       |                   |                  |               |       |
| 48        | HD93521      | 10 42 42     | +38 06 00           | 21:54:38                |                       | 4:37 W            |                  |               | 900   |
| 49        | HD93521      | 10 42 42     | +38 06 00           | 22:10:04                |                       | 4:52 W            |                  |               | 900   |
| 50        | Comparison   |              |                     | 22:25:54                |                       |                   |                  | FeAr<br>clear |       |



Spectr. Temp. .... Dome Temp./Hum.  $+20.4^{\circ}\text{C} / 73.27\%$  Transparency Conditions Partially Cloudy + Hazy <sup>56</sup>  
 Focus ..... 6.73 ..... Dome Fans ON at start  
 Spectr. Temp. .... Dome Temp./Hum. .... 480 0 50 1024 4 1 ccd fnt.  
 South one turned off @ 2100

| Exp. Mtr. | Seeing | Mag. | Sp.   | Inst.    | Grating/<br>Tilt | Slit      | Emulsion | P.H. | Program       | Remarks   | Quality |
|-----------|--------|------|-------|----------|------------------|-----------|----------|------|---------------|---|---------|
|           |        |      |       | Cass CCD | 1800 l/mm        | 300 $\mu$ | 6604A    | 3/4  | Focus Test    | T = 20.4, frc = 6.73                              | good    |
|           |        |      |       |          | G = 6.065        |           |          | 1    |               |   |         |
|           |        |      |       |          |                  |           |          | 5    |               | Catwalk Humidity 79% @ 2120<br>Telescope Reversed |         |
| 900       |        | 7.04 | 09.5V |          |                  |           |          | 6    | Bln 0* pgm    |   |         |
|           |        | 7.04 | 09.5V |          |                  |           |          | 7    | Bln 0* pgm    |   |         |
| 879       |        |      |       |          |                  |           |          | 5    |               |   |         |
|           |        |      |       |          |                  |           |          | 5    |               |   |         |
| 2000      |        | 1.36 | B7V   |          |                  |           |          | 8    | Telluric Std. | Air Mass = 2.72                                   |         |
| 4000      |        | 1.36 | B7V   |          |                  |           |          | 9    | Telluric Std. | Air Mass = 2.80                                   |         |
|           |        |      |       |          |                  |           |          | 5    |               |   |         |
|           |        |      |       |          |                  |           |          | 5    |               |   |         |
|           |        |      |       |          |                  |           |          | 1    |               |   |         |
| 612       | 3-4"   | 7.04 | 09.5V |          |                  |           |          | 10   | Bln 0* pgm    |   |         |
| 660       |        | 7.04 | 09.5V |          |                  |           |          | 11   | Bln 0* pgm    |   | 19.3°   |
|           |        |      |       |          |                  |           |          | Sci  |               |   |         |

57 pg #2

Emulsion Batches:

Date ..19.9.4..Jun.14/15. Observers ..III.../Hlw... [Bln]

| Plate No.     | Object                            | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination      | Comparison    |      |
|---------------|-----------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|------------------|---------------|------|
|               |                                   |              |                     |                         |                       |                   |                  | Type/Filter   | Exp. |
| cc23251       | Comparison                        |              |                     | 22:45:41                |                       |                   |                  | Fear<br>Clear | 60   |
| 52            | HD136049                          | 15 17 42     | +33 17 30           | 22:47:46                |                       | 0:47 W            | Air mass<br>1.03 |               | 331  |
| 53            | HD136049                          | 15 17 40     | +33 17 30           | 22:54:31                |                       | 0:56 W            | 1.037            |               | 442  |
| 54            | Comparison                        |              |                     | 23:04:14                |                       |                   |                  | Fear<br>clear | 60   |
| 55            | <del>Comparison</del><br>Bias (4) |              |                     | 23:05                   |                       |                   |                  |               |      |
| 56            | Comparison                        |              |                     | 23:11:16                |                       |                   |                  | Fear<br>clear | 60   |
| 57            | HD 93521                          | 10 42 42     | 38 06 00            | 23:13:22                |                       | 5:55 W            | Air mass<br>2.30 |               | 900  |
| 58            | HD 93521                          | 10 42 42     | 38 06 00            | 23:29:39                |                       | 6:12 W            | 2.547            |               | 900  |
| 59            | Comparison                        |              |                     | 23:42:17                |                       |                   |                  | Fear<br>clear | 60   |
| 60            | Bias (4)                          |              |                     | 23:47                   |                       |                   |                  |               |      |
| 61            | HD 93521                          | 10 42 42     | 38 06 00            | 23:50:38                |                       | 6:33 W            | 2.937            |               | 900  |
| 62            | HD 93521                          | 10 42 42     | 38 06 00            | 00:07:09                |                       | 6:49 W            | ~3               |               | 900  |
| 63            | Comparison                        |              |                     | 00:23:01                |                       |                   |                  | Fear<br>Clear | 60   |
| cg40245-<br>8 | <sup>4x</sup> HD163075            | 17 49 15     | +46 40 10           | 00:34                   |                       |                   |                  |               | .067 |
| cg40249<br>50 | <sup>2x</sup> HD163075            | 17 49 15     | 46 40 10            |                         | 00:37                 | 0:02 W            |                  |               | .133 |

Spectr. Temp. .... Dome Temp./Hum. 19.1°/75.6% Transparency Conditions ... Hazy  
 Focus ..... 6.73 ..... N Fan On  
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mir.     | Seeing | Ptg. Mag. | Sp.             | Inst.       | Grating/Tilt         | Slit      | Emulsion | P.H. | Program          | Remarks                   | Quality |
|---------------|--------|-----------|-----------------|-------------|----------------------|-----------|----------|------|------------------|---------------------------|---------|
|               |        |           |                 | Cass<br>CCD | 1800 Bl/mm<br>b=6065 | 300<br>μm | 6604A    | Sci  |                  | Telescope still reversed. |         |
| 1400          | 5.37   | B9        | II <sub>n</sub> |             |                      |           |          | 12ci | Telluric<br>Std. | 81% humidity meatwalk     |         |
| 2000          |        |           |                 |             |                      |           |          | 13ci | — 11 —           |                           |         |
|               |        |           |                 |             |                      |           |          | Sci  |                  |                           |         |
|               |        |           |                 |             |                      |           |          | 1ci  |                  |                           |         |
| <del>39</del> |        |           |                 |             |                      |           |          | 5ci  |                  | Catwalk Humidity = 84%    |         |
| 398           | 7.04   | A5V       | SIN             |             | 120:1                |           |          | 5ci  | Bln 0* pgm       | @ 2330                    |         |
| 398           |        |           | SIN             |             | 120:1                |           |          | 15ci | "                | 85% @ 0000                | 18.6°   |
|               |        |           |                 |             |                      |           |          | Sci  |                  |                           |         |
|               |        |           |                 |             |                      |           |          | 1ci  |                  |                           |         |
| 319           |        |           |                 | SIN         | 115:1                |           |          | 16ci | Bln 0* pgm       |                           | 18.3°   |
| 253           |        |           |                 | SIN         | 110:1                |           |          | 17ci | Bln 0* pgm       |                           |         |
|               |        |           |                 |             |                      |           |          | 5    |                  |                           |         |
|               | 4-5"   |           |                 |             |                      |           |          |      | Seeing Test      | Dome E, no wind           |         |
|               | 4-5"   |           |                 |             |                      |           |          |      | Seeing Test      |                           |         |



59 page #3

Emulsion Batches:

Date .. 1994 Jun 14 1.15 Observers ... III (Hlw. [Bln]) ..

| Plate No. | Object     | R.A.<br>1900                    | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison     |      |
|-----------|------------|---------------------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|----------------|------|
|           |            |                                 |                     |                         |                       |                   |             | Type/Filter    | Exp. |
| u23 264   | Comparison |                                 |                     | 01:49:06                |                       |                   | Air Mass Ex | Fe Ar<br>clear | 60   |
| 65        | HD 124224  | 14 07 12                        | + 2 53 00           | 01:53:17                |                       | 4:13 W            | 2.82        |                | 960  |
| 66        | Comparison |                                 |                     | 01:10:29                |                       |                   |             | Fe Ar<br>clear | 60   |
| 67        | Bias (4)   |                                 |                     | 01:11'                  |                       |                   |             |                |      |
| 68        | HD 124224  | 14 07 12                        | +02 53 00           | 01:13:37                |                       | 4:47 W            | 3.93        |                | 1800 |
| 69        | Comparison |                                 |                     | 01:44:41                |                       |                   |             | Fe Ar<br>clear | 60   |
| 70        | HD 124224  | 14 07 12                        | +02 53 00           | 01:47:42                |                       | 5:21 W            | 6.64        |                | 1800 |
| 71        | Comparison |                                 |                     | 02:18:26                |                       |                   |             | Fe Ar<br>clear | 60   |
| 72        | Bias (4)   |                                 |                     | 02:20                   |                       |                   |             |                |      |
| 73        | Comparison |                                 |                     | 02:35:56                |                       |                   |             | Fe Ar<br>clear | 60   |
| 74        | HD 166228  | 18 04 36                        | + 49 41 44          | 02:38:18                |                       | 2:17              | 1.0944      |                | 1800 |
| 75        | Comparison |                                 |                     |                         |                       |                   |             | Fe Ar<br>clear | 60   |
| 76        | Bias (4)   |                                 |                     | 03:12                   |                       |                   |             |                |      |
| 77        | Comparison |                                 |                     | 03:17:04                |                       |                   |             | Fe Ar<br>clear | 60   |
| 78        | HD 167965  | <del>18 12 32</del><br>18 04 36 | 42 07 30            | 03:19:52                |                       | 2:29              | 1.13        |                | 450  |



Spectr. Temp. .... Dome Temp./Hum. 18.0°./81.2% Transparency Conditions Hazy .....

Focus ..... 6.73 .....

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | <del>Mag.</del><br>Mag. | Sp.  | Inst.  | Grating/<br>Tilt                | Slit             | Emulsion<br>Element | P.H.          | Program                | Remarks   | Quality |
|-----------|--------|-------------------------|------|--|---------------------------------|------------------|---------------------|---------------|------------------------|---|---------|
|           |        |                         |      | Cass<br>CCD                                      | 1800 <del>2</del> /mm<br>G=6065 | 300 <del>μ</del> | 6604A               | 5             |                        |   |         |
| 1668      | ~6"    | 5.00                    | ApSi | S/N  | 300:1                           |                  |                     | 18            | Bln He* pgm            |   | 17.50   |
|           |        |                         |      |  |                                 |                  |                     | 5             |                        |   |         |
|           |        |                         |      |  |                                 |                  |                     | 19            |                        |   |         |
| 2320      |        | 5.00                    | ApSi | S/N  | ~375/1                          |                  |                     | 19            | Bln He* pgm            |   |         |
|           |        |                         |      |  |                                 |                  |                     | 5             |                        | 92% on catwalk @  | 0145    |
| 971       |        | 5.00                    | ApSi | S/N  | 265:1                           |                  |                     | 20            | Bln He* pgm            |   |         |
|           |        |                         |      |  |                                 |                  |                     | <del>20</del> |                        | T=16.8°C  |         |
|           |        |                         |      |  |                                 |                  |                     | 1             |                        |   |         |
|           |        |                         |      |  |                                 |                  |                     | 5             |                        |   |         |
| 1820      |        | 6.32                    | AZV  | [*Clouds for 1st 10 minutes<br>of this exposure] |                                 |                  |                     | 21            | Telluric Std<br>search | SNR ~ 285<br>93% on catwalk at 2:50am<br>← looks fine but telluric<br>line in H $\alpha$ so strong as<br>to possibly "hide" H $\gamma$ emission |         |
|           |        |                         |      |  |                                 |                  |                     | 5             |                        |   |         |
|           |        |                         |      |  |                                 |                  |                     | 1             |                        |   |         |
|           |        |                         |      |  |                                 |                  |                     | 5             |                        |   |         |
| 1665      |        | 5.59                    | B7IV | S.N.R. ~ 285                                     |                                 |                  |                     | 22            | Telluric Std<br>search | ← H $\alpha$ has a "flat" bottom<br>looks fine but telluric<br>line in H $\alpha$ so strong as to possibly<br>"hide" H $\gamma$ emission        |         |



Spectr. Temp. .... Dome Temp./Hum. 17.0°C/85.3%. Transparency Conditions Some clouds + Hazy + Humid  
 Focus ..... 6.73 .....  
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.                  | Grating/Tilt      | Slit            | Emulsion | P.H. | Program          | Remarks   | Quality |  |
|-----------|--------|-----------|-----|------------------------|-------------------|-----------------|----------|------|------------------|---|---------|--|
|           |        |           |     | Cassegrain<br>CCD      | 1800/mm<br>G=6065 | mm500<br>microw | 6604A    | S    |                  |   |         |  |
| 2000      | 5.00   | BB III    |     |                        |                   |                 |          | S    | Telluric Search. | Box has "flat" bottom                                       | 17.0°   |  |
|           |        |           |     |                        |                   |                 |          | S    |                  |   |         |  |
|           |        |           |     |                        |                   |                 |          | 24i  |                  | → Done with 7flat.bat, no repeat command. (long batch file) |         |  |
|           |        |           |     |                        |                   |                 |          | 24i  |                  | → Done with repeat 7test.bat 15                             |         |  |
|           |        |           |     |                        |                   |                 |          | 24i  |                  | → Done with normal keyboard commands.                       |         |  |
|           |        |           |     |                        |                   |                 |          | 1ci  |                  |   |         |  |
|           |        |           |     |                        |                   |                 |          | 3/4  | FocusTest.       |   |         |  |
|           |        |           |     | All to WORM & Perseus. |                   |                 |          |      |                  |   |         |  |
|           |        |           |     | ///                    |                   |                 |          |      |                  |   |         |  |





Spectr. Temp. .... Dome Temp./Hum.  $22.2^{\circ}\text{C}/77.4\%$  Transparency Conditions *Really Hazy, some clouds<sup>6+</sup> at horizon*  
 Focus ..... *6:63* ..... Dome Fans off  
 Spectr. Temp. .... *again = 0* ..... Dome Temp./Hum. .... 480 360 320 320 1 1 ccdfmt

| Exp. Mtr. | Seeing | Ptg. Mag.              | Sp. | Inst.         | Grating/Tilt  | Slit               | Emulsion | P.H. | Program     | Remarks  | Quality |
|-----------|--------|------------------------|-----|---------------|---------------|--------------------|----------|------|-------------|--|---------|
|           |        |                        |     | Focal Reducer | Flat /<br>18° | skylight<br>filter | Imaging  |      |             | Max ADU ~10,000  |         |
|           | ~3"    | Globular Cluster<br>M3 |     |               |               |                    |          | 4    | Engineering | *Note for files<br>cd00026 to cd00037<br>chip temperature was<br>set to coldest $\approx -114^{\circ}\text{C}$ |         |
|           |        |                        |     |               |               |                    |          | 4    | "           |  |         |
|           |        |                        |     |               |               |                    |          | 4    | "           |  |         |
| 159       |        |                        |     |               |               |                    |          | 5    | "           |  |         |
| 133       |        |                        |     |               |               |                    |          | 3    | "           |  |         |
| 132       |        |                        |     |               |               |                    |          | 4    | "           |  |         |
|           |        |                        |     |               |               |                    |          | 1    |             | CCD Temperature set to $-114^{\circ}\text{C}$  |         |
|           |        |                        |     |               |               |                    |          | 1    |             | CCD Temperature set to $-100^{\circ}\text{C}$  |         |
|           |        | Ring Nebula            |     |               |               |                    |          | 4    |             | ↓  |         |
|           |        |                        |     |               |               |                    |          | 4    |             |  |         |
|           |        |                        |     | All to        | Worm &        | perseus            |          | 1    |             |  |         |

Pg #1

65

Fri/Sat

Date 1999.1.4.17.18... Observers [Bm]..Tn/Hlw.....

Emulsion Batches:

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CSS Time Reset to M.W.V. time.....

| Plate No.     | Object         | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison         |            |
|---------------|----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|--------------------|------------|
|               |                |              |                     |                         |                       |                   |             | Type/Filter        | Exp.       |
| cc23327/28    | Comp / Stellar | Hurtmann     |                     |                         |                       |                   |             | FeAr<br>Clear      | 60/60      |
| 29            | B115(A)        |              |                     |                         |                       |                   |             |                    |            |
| 30            | Comp           |              |                     |                         |                       |                   |             | FeAr<br>Clear      | 60         |
| 31            | HD145001       | 16 03 36     | +17 19 00           | 21 33 22                |                       | 0:58 E            |             |                    | 498        |
| 32            | Comparison     |              |                     |                         |                       |                   |             | FeAr<br>Clear      | 60         |
| 33            | Comparison     |              |                     |                         |                       |                   |             | FeAr<br>Clear      | 60         |
| 34            | HD144579       | 16 01 30     | +39 24 00           | 21 54 14                |                       | 00:33 E           |             |                    | 646        |
| 35            | Comp           |              |                     |                         |                       |                   |             | FeAr<br>Clear      | 60 sec     |
| cg40251<br>-4 | 4x HD144579    | 16 01 30     | +39 24 00           | 22 08                   |                       |                   |             |                    | .067       |
| cg40255/6     | 2x "           | "            | "                   | 22 10                   |                       | 0:27 E            |             |                    | .133       |
| cc23336       | Bias (4)       |              |                     |                         |                       |                   |             |                    |            |
| 37            | Comp           |              |                     |                         |                       |                   |             | FeAr<br>Clear      | 60         |
| 38            | HD180583       | 19 12 00     | +27 45 00           | 22 19 31                |                       | 3:19 E            |             |                    | 600        |
| 39            | Comparison     |              |                     |                         |                       |                   |             | Iron Argo<br>Clear | 60s        |
| 40            | Comparison     |              |                     |                         |                       |                   |             | Iron Argo<br>Clear | 60 seconds |

CCO  
 Spectr. Temp.  $-100^{\circ}\text{C}$  ..... Dome Temp./Hum.  $+26.5^{\circ}\text{C}/63.8\%$  Transparency Conditions *part. cloudy* ..... 66  
 Focus  $6.55$  .....  
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | <del>Dia</del><br>Mag. | Sp.     | Inst.    | Grating/<br>Tilt   | Slit                | Emulsion | P.H.<br>C. | Program     | Remarks                 | Quality |
|-----------|--------|------------------------|---------|----------|--------------------|---------------------|----------|------------|-------------|-------------------------|---------|
|           |        |                        |         | Cass CCD | 1800/nm<br>G=59/10 | 300μ<br>Full Length | 6400λ    | 3/4c       | Focus Test  | T=26.5, foc=6.65        |         |
|           |        |                        |         |          |                    |                     |          | 1          |             |                         |         |
|           |        |                        |         |          |                    |                     |          | 5          |             |                         |         |
| 2200      | 3-4"   | 5.00                   | G5 III  |          |                    |                     |          | 6          | Std. Vel.   |                         |         |
|           |        |                        |         |          |                    |                     |          | 7          |             |                         |         |
|           |        |                        |         |          |                    |                     |          | 8          |             |                         |         |
| 1250      | 3"     | 6.66                   | dG8     |          |                    |                     |          | 9          | Std. Vel.   |                         |         |
|           |        |                        |         |          |                    |                     |          | 10c        |             |                         |         |
|           |        | 6.66                   | dG8     |          |                    |                     |          |            | Seeing Test | Dome W, light wind      |         |
|           |        | "                      | "       |          |                    |                     |          |            | Seeing Test | from variable direction |         |
|           |        |                        |         |          |                    |                     |          | 1          |             |                         |         |
|           |        |                        |         |          |                    |                     |          | 11         |             |                         |         |
| 1657      |        | 6.19                   | F6I-IIb |          |                    |                     |          | 12         | Rm pgm      |                         |         |
|           |        |                        |         |          |                    |                     |          | 13         |             |                         |         |
|           |        |                        |         |          |                    |                     |          | 14         | cache       |                         |         |







Spectr. Temp. .... Dome Temp./Hum. 25.5°C/66.2% Transparency Conditions Partially Cloudy  
 Focus .....  
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Fig. VMag.  | Sp.  | Inst.    | Grating/Tilt      | Slit | central emission wavelength | A.H. cache | Program | Remarks        | Quality |
|-----------|--------|-------------|------|----------|-------------------|------|-----------------------------|------------|---------|----------------|---------|
| 1321      |        | 6.15        | GOIb | Cass CCD | 1800/mm<br>G=5910 | 300μ | 6400                        | 15         | Rm pgm  |                |         |
|           |        |             |      |          |                   |      |                             | 16         |         |                |         |
|           |        |             |      |          |                   |      |                             | 1          |         |                |         |
| onds      |        |             |      |          |                   |      |                             | 2          |         |                |         |
|           |        |             |      |          |                   |      |                             | 17         |         |                |         |
| 706       |        | 8.40        | GOIb |          |                   |      |                             | 18         | Rm pgm  | S/N<br>200/1   |         |
|           |        |             |      |          |                   |      |                             | 19         |         |                |         |
|           |        |             |      |          |                   |      |                             | 1          |         |                |         |
|           |        |             |      |          |                   |      |                             | 20         |         |                |         |
| 2145      |        | 5.75        | GOIb |          |                   |      |                             | 21         | Rm pgm  |                |         |
|           |        |             |      |          |                   |      |                             | 22         |         |                |         |
|           |        |             |      |          |                   |      |                             | 23         |         |                |         |
| 2270      | 2-3"   | 5.8<br>-5.9 | F2   |          |                   |      |                             | 24         | Rm pgm  | S/N<br>> 300/1 |         |
|           |        |             |      |          |                   |      |                             | 25         |         |                |         |
|           |        |             |      |          |                   |      |                             | 26         |         |                |         |

69

p9#3

Date 1999 Jan 17/18.... Observers [Rm]..H.W..I.Ta.....

Emulsion Batches:

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| Plate No. | Object     | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |      |
|-----------|------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|------|
|           |            |              |                     |                         |                       |                   |             | Type/Filter   | Exp. |
| CC23361   | HP173297   | 18 3900      | -20 4500            | 00 5003                 |                       | 00 02W            |             |               | 1761 |
| 62        | Comp       |              |                     |                         |                       |                   |             | Felt<br>Clear | 63   |
| 63        | Bias(4)    |              |                     |                         |                       |                   |             |               |      |
| 64        | Comp       |              |                     |                         |                       |                   |             | Felt<br>Clear | 63   |
| 65        | HD180583   | 19 1200      | +27 45              | 01 2954                 |                       | 00 07E            |             |               | 665  |
| 66        | Comp       |              |                     |                         |                       |                   |             | Felt<br>Clear | 63   |
| 67        | Comp       |              |                     |                         |                       |                   |             | v             | 4    |
| 68        | HD187691   | 19 4612      | +10 10              | 01 4901                 |                       | 00 29E            |             |               | 295  |
| 69        | Comp       |              |                     |                         |                       |                   |             | Felt<br>Clear | 63   |
| 70        | Comparison |              |                     |                         |                       |                   |             | Felt<br>Clear | 60   |
| 71        | HD194071   | 20 18 30     | 27 55 00            | 02 00 34                |                       | 00 27E            |             |               | 1694 |
| 72        | Comparison |              |                     |                         |                       |                   |             | Felt<br>Clear | 63   |
| 73        | Bias(4)    |              |                     |                         |                       |                   |             |               |      |
| 74        | Comparison |              |                     |                         |                       |                   |             | Felt<br>Clear | 63   |
| 75        | HD214975   | 22 3655      | +56 1824            | 02 5153                 |                       | 1:52 E            |             |               | 1726 |

Spectr. Temp. .... Dome Temp./Hum.  $7.24.6^{\circ}\text{C}$  69% RH Transparency Conditions ... 5/1 hazy, some cloud .....

Focus .... 6:6.5 .....

Spectr. Temp. .... Dome Temp./Hum. ....

C LAMBDA

| Exp. Mir. | Seeing | Mag. | Sp.    | Inst.       | Grating/<br>Tilt               | Slit                      | Emulsion | P.H. | Program  | Remarks                        | Quality |
|-----------|--------|------|--------|-------------|--------------------------------|---------------------------|----------|------|----------|--------------------------------|---------|
| 1060      | 3"     | 7.48 | GOI6   | C455<br>CCD | 1800 $\mu\text{m}$ /<br>G=5910 | 300 $\mu\text{m}$<br>Full | 6400A    | 27c  | Rm pgn   | 514<br>7200/1                  |         |
|           |        |      |        |             |                                |                           |          | 28   |          |                                |         |
|           |        |      |        |             |                                |                           |          | 1c   |          |                                |         |
|           |        |      |        |             |                                |                           |          | 29c  |          |                                |         |
| 1960      | 1.2"   | 6.19 | FGI-DB |             |                                |                           |          | 30c  | Rm pgn   | 2nd exposure of night          |         |
|           |        |      |        |             |                                |                           |          | 31   |          | CCDT = $-10.5^{\circ}\text{C}$ |         |
|           |        |      |        |             |                                |                           |          | 5c   |          |                                |         |
| 2130      | 1"     | 5.11 | F8I    |             |                                |                           |          | 6c   | Std Vel  |                                |         |
|           |        |      |        |             |                                |                           |          | 7    |          |                                |         |
|           |        |      |        |             |                                |                           |          | 8    |          |                                |         |
| 1266      | 1.2"   | 8.13 | G8III  |             |                                |                           |          | 9    | Std. Vel |                                |         |
|           |        |      |        |             |                                |                           |          | 10   |          |                                |         |
|           |        |      |        |             |                                |                           |          | 1    |          | Then a Topup                   |         |
|           |        |      |        |             |                                |                           |          | 11a  |          |                                |         |
| 998       | 1.2"   | 8.40 | GOI6   |             |                                |                           |          | 12c  | Rm pgn   | 2nd exposure tonight.          |         |









CCD Spectr. Temp.  $-100^{\circ}\text{C}$  ..... Dome Temp./Hum.  $25.8/64.6\%$  Transparency Conditions  $\text{clear - 5/14/92}$  74  
 Focus  $6.70$  .....  
 Spectr. Temp.  $90.56\text{A/W}$  ..... Dome Temp./Hum. ....  
 2 Large Saturday night Tours  
 M3 viewel

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.    | Grating/Tilt                 | Slit      | Emulsion | P.H. | Program    | Remarks                                      | Quality |
|-----------|--------|-----------|-----|----------|------------------------------|-----------|----------|------|------------|--|---------|
|           |        |           |     | Cass CCD | 1800 $\lambda$ /mm<br>G=5115 | 300 $\mu$ | S303     | 3/4  | Focus Test | Exposure meter speed<br>wavering during comp |         |
|           |        |           |     |          |                              |           |          | 1    | bsum 4.bat |  |         |
|           |        |           |     |          |                              |           |          | 5    |            | Tour ~100 people                             |         |
| 140       |        | 8.48      | M1  |          |                              |           |          | 6    | Vys Std.   |  |         |
|           |        |           |     |          |                              |           |          | 7    |            |  |         |
|           |        |           |     |          |                              |           |          | 8    |            |  |         |
| 138       | 2"     | 10.1      | M2  |          |                              |           |          | 9    | Vys Pgm    |  |         |
|           |        |           |     |          |                              |           |          | 10   |            |  |         |
|           |        |           |     |          |                              |           |          | 11   |            |  |         |
| 138       | 2"     | 9.0       | M5e |          |                              |           |          | 12   | Vys Pgm    |  |         |
|           |        |           |     |          |                              |           |          | 13   |            |  |         |
|           |        |           |     |          |                              |           |          | 14   |            |  |         |
| 128       |        | 10.59     | M0  |          |                              |           |          | 15   | Vys Pgm    |  |         |
|           |        |           |     |          |                              |           |          | 16   |            |  |         |

Tpg #2

Date 1994 Jun 18/19 Observers T<sub>2</sub>/Hlw {Vys}

Emulsion Batches:

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| Plate No.              | Object        | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison        |      |
|------------------------|---------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------------|------|
|                        |               |              |                     |                         |                       |                   |             | Type/Filter       | Exp. |
| cc23395                | Comparison    |              |                     |                         |                       |                   |             | Iron Nea<br>Clear | 20   |
| 396                    | BD+45 2743    | 18 32 26     | +45 39 53           | 00 57 16                |                       | 0:14 W            | +46°        |                   | 1265 |
| 397                    | Comparison    |              |                     |                         |                       |                   |             | Iron Nea<br>Clear | 20   |
| 398                    | Bias x4       |              |                     |                         |                       |                   |             |                   |      |
| 399                    | Comparison    |              |                     |                         |                       |                   |             | "                 | "    |
| 400                    | AC+54 1780-45 | 18 54 12     | +54 22 09           | 01 27 43                |                       | 0:35 W            | +54°        |                   | 1958 |
| 401                    | Comparison    |              |                     |                         |                       |                   |             | "                 | 20   |
| cg40257 <sup>-60</sup> | 4x HD187120   | 19 43 12     | 45 29 00            | 02 09                   |                       |                   |             | 4x                | .067 |
| cg40261 <sup>2</sup>   | 2x HD187120   | "            | "                   | 02 11                   |                       |                   |             | 2x                | .133 |
| cc23402                | Bias x4       |              |                     |                         |                       |                   |             |                   |      |
| 403                    | Comparison    |              |                     |                         |                       |                   |             | FeNe<br>Clear     | 20s  |
| 404                    | AC+39 60670   | 21 32 36     | +39 00 29           | 02 19 22                |                       | 1:22 E            | +39°        |                   | 1366 |
| 405                    | Comparison    |              |                     |                         |                       |                   |             | FeNe<br>Clear     | 20s  |
| 406                    | Comparison    |              |                     |                         |                       |                   |             | FeNe<br>Clear     | 20   |
| 407                    | AC+31 68884   | 22 18 56     | +31 57 15           | 02 50 14                |                       | 1:41 E            | +32°        |                   | 1200 |



Spectr. Temp. .... Dome Temp./Hum.  $+25.1^{\circ}\text{C}/64.8\%$  Transparency Conditions Hazy ..... 76  
 Focus 6.70 ..... North Fan ON.  
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | <input checked="" type="checkbox"/> H. Mag. | Sp.    | Inst.    | Grating/<br>Tilt             | Slit      | Emulsion | P.H. | Program     | Remarks               | Quality |
|-----------|--------|---|--------|----------|------------------------------|-----------|----------|------|-------------|-----------------------|---------|
|           |        |   |        | Cass CCD | 1800 $\lambda$ /mm<br>G=5115 | 300 $\mu$ | S303A    | 17   |             |                       |         |
| 127       | 2.4    | 9.83  | M0     |          |                              |           |          | 18   | Vys Std.    |                       |         |
|           |        |   |        |          |                              |           |          | 19   |             |                       |         |
|           |        |   |        |          |                              |           |          | 1    |             |                       |         |
|           |        |   |        |          |                              |           |          | 20   |             |                       |         |
| 31        |        | 12.0  | M0     |          |                              |           |          | 21   | Vys pgm     |                       |         |
|           |        |   |        |          |                              |           |          | 22   |             |                       |         |
|           | 1.5    | 7.52  | K0 III |          |                              |           |          |      | Seeing Test | Dome W, med. NW wind. |         |
|           | "      | "   | "      |          |                              |           |          |      | Seeing Test |                       |         |
|           |        |   |        |          |                              |           |          | 1    |             |                       |         |
|           |        |   |        |          |                              |           |          | 23   |             |                       |         |
| 82        | 1.5    | 10.17                                       | m0     |          |                              |           |          | 24   | Vys pgm     |                       |         |
|           |        |   |        |          |                              |           |          | 25   |             |                       |         |
|           |        |   |        |          |                              |           |          | 26   |             |                       |         |
| 42        |        | 10.7  | M0e    |          |                              |           |          | 27   | Vys pgm     |                       |         |
|           |        |   |        |          |                              |           |          |      |             | SNR ~ 60              |         |









Spectr. Temp. .... Dome Temp./Hum.  $+23.4^{\circ}\text{C}/55.7\%$  Transparency Conditions  $\text{Hazy, some scattered clouds}$ <sup>80</sup>  
 Focus  $6.70$  Dome Fans off  
 Spectr. Temp.  $\text{Gain} = 90$  Dome Temp./Hum. .... 480 0 50 1024 4 1 ccdfmt

| Exp. Mtr. | Seeing | Pig. Mag.                         | Sp. | Inst.    | Grating/Tilt                   | Slit             | Emulsion       | P.H.       | Program                     | Remarks  | Quality |
|-----------|--------|-----------------------------------|-----|----------|--------------------------------|------------------|----------------|------------|-----------------------------|--|---------|
|           |        | $\text{foc} = 6.70$<br>$T = 23.3$ |     | Cass CCD | $1800/\text{mm}$<br>$G = 5115$ | $300\mu\text{m}$ | $5303\text{A}$ | $3/4$      | Focus Test                  | CCD had warmed to ambient dome temperature when I arrived. Focus Test was done while CCD was cooling.<br><del>11/20</del> CCD Temp (Focus Test) $\sim -85^{\circ}\text{C}$ |         |
|           |        | $\text{bsum } 4.\text{bat.}$      |     |          |                                |                  |                | $1$<br>$5$ |                             |  |         |
| 148       |        | 8.48                              | M1  |          |                                |                  | SNR $\sim 90$  | 6          | Vys Std.                    |  |         |
|           |        |                                   |     |          |                                |                  |                | 7          |                             |  |         |
|           |        |                                   |     |          |                                |                  |                | 8          |                             |  |         |
| 35        |        | 11.1                              | M0  |          |                                |                  | SNR $\sim 35$  | 9          | Vys Pgm                     |  |         |
|           |        |                                   |     |          |                                |                  |                | 10         |                             |  |         |
|           |        |                                   |     |          |                                |                  |                | 1          | $\text{bsum } 4.\text{bat}$ |  |         |
|           |        |                                   |     |          |                                |                  |                | 11         |                             |  |         |
| 32        |        | 11.3                              | M0  |          |                                |                  | SNR $\sim 35$  | 12         | Vys Pgm                     |  |         |
|           |        |                                   |     |          |                                |                  |                | 13         |                             | $\rightarrow$ Image is dark, Don't know why.   |         |
|           |        |                                   |     |          |                                |                  |                | 14         |                             | $-11/14-06/94$   |         |
| 70        |        | 10.5                              | M0  |          |                                |                  | SNR $\sim 35$  | 15         | Vys Pgm                     |  |         |
|           |        |                                   |     |          |                                |                  |                | 16         |                             |  |         |



Spectr. Temp. .... Dome Temp./Hum. <sup>+20.6°C/66.4%</sup> Transparency Conditions <sup>82</sup> Clear, with scattered clouds.  
 Focus ..... 6.70 .....  
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Pig. Mag. | Sp. | Inst.                 | Grating/Tilt        | Slit | Emulsion | P.H. | Program  | Remarks            | Quality |
|-----------|--------|-----------|-----|-----------------------|---------------------|------|----------|------|----------|--------------------|---------|
|           |        |           |     | Cass CCD              | 1800 l/mm<br>G=5115 | 300μ | S303A    | 17   |          |                    |         |
| 108       |        | 9.3       | M   |                       |                     |      |          | 18   | Vys Pgm  |                    |         |
|           |        |           |     |                       |                     |      |          | 19   |          |                    |         |
|           |        |           |     |                       |                     |      |          | 1    |          |                    |         |
|           |        |           |     |                       |                     |      |          | 20   |          |                    |         |
| 72        |        | 9.8       | MO  |                       | SNR ~50             |      |          | 21   | Vys std, |                    |         |
|           |        |           |     |                       |                     |      |          | 22   |          |                    |         |
|           |        |           |     |                       |                     |      |          | 23   |          | Lost safety backup |         |
|           |        |           |     | All to WORM & Perseus |                     |      |          | 1    |          |                    |         |

883 pg#1

Tues / wed

Emulsion Batches:

Date 1994 Jun. 20/21 Observers ... Kok... J. In.....

CSS 10 secs ahead of E.M.V.V. Time.

| Plate No.  | Object         | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.  |
|------------|----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| C 23455/56 | Comp / Stellar |              |                     |                         |                       |                   |             | Fear<br>Clear             | 30/45 |
| 57         | BIASCA         |              |                     |                         |                       |                   |             |                           |       |
| 58         | Comp           |              |                     |                         |                       |                   |             | Fear<br>Clear             | 60    |
| 59         | HD 103287      | 114836       | 541500              | 210555                  |                       | 2'50' W           |             |                           | 85    |
| 60         | "              | "            | "                   | 210838                  |                       | 2'59 W            |             |                           | 86    |
| 61         | Comp           |              |                     |                         |                       |                   |             | Fear<br>Clear             | 60    |
| 62         | Comp           |              |                     |                         |                       |                   |             | "                         | 60    |
| 63         | HD 120315      | 134336       | 494900              | 211244                  |                       | 1'14 W            |             |                           | 37    |
| 64         | "              | "            | "                   | 211926                  |                       |                   |             |                           | 48    |
| 65         | Comp           |              |                     |                         |                       |                   |             | Fear<br>Clear             | 60    |
| 66         | BIAS (4)       |              |                     |                         |                       |                   |             |                           |       |
| 67         | Comp           |              |                     |                         |                       |                   |             | Fear<br>Clear             | 60    |
| 68         | HD 193237      | 201406       | 37438               | 214244                  |                       |                   |             |                           | 219   |
| 69         | "              | "            | "                   | 214719                  |                       | 0438 E            |             |                           | 586   |
| 70         | "              |              |                     | 215811                  |                       |                   |             |                           | 620   |
| 71         | comp           |              |                     |                         |                       |                   |             | Fear<br>Clear             | 60    |



CCD Spectr. Temp.  $-100^{\circ}\text{C}$  Dome Temp./Hum.  $22.3^{\circ}\text{C} \dots 43\%$  Transparency Conditions  $\dots$  FINE  $\dots$

Focus  $\dots 6.75 \dots$

Spectr. Temp. Gain  $\dots 90\text{ gain}$  Dome Temp./Hum.  $\dots$  480 0 50 1024 4 1 CCD FWT

| Exp. Mtr. | Seeing | Pr. Mag. | Sp. | Inst.    | Grating/Tilt     | Slit | Emulsion | P.H. | Program  | Remarks           | Quality |
|-----------|--------|----------|-----|----------|------------------|------|----------|------|----------|-------------------|---------|
|           |        |          |     | CASS CCD | 1800mm<br>G=4460 | 300μ | 4340A    | 5/6c | Focus    |                   |         |
|           |        |          |     |          |                  |      |          | 1    |          |                   |         |
|           |        |          |     |          |                  |      |          | 7    |          |                   |         |
| 5800      | 2.44   | A0V      |     |          |                  |      |          | 8    | Kok std. | 12400 max ADU.    |         |
| 5100      | "      | "        |     |          |                  |      |          | 9    | "        |                   |         |
|           |        |          |     |          |                  |      |          | 10   |          |                   |         |
|           |        |          |     |          |                  |      |          | 4    |          |                   |         |
| 4073      | 1.67   | B3V      |     |          |                  |      |          | 11   | Kok std  |                   |         |
| 4400      | "      | "        |     |          |                  |      |          | 12   | "        |                   |         |
|           |        |          |     |          |                  |      |          | 7    |          |                   |         |
|           |        |          |     |          |                  |      |          | 7    |          |                   |         |
| 1510      | 3"     | 4.8      | Bsh |          |                  |      |          | 13   | Kok ppm  | 3.6 K Max (H8 em) |         |
| 4000      | "      | "        |     |          |                  |      |          | 14   | "        | MAX 10 K ADU (H8) |         |
| 4000      | "      | "        |     |          |                  |      |          | 15   | "        |                   |         |



Spectr. Temp. .... Dome Temp./Hum. ... 21.0°C ... 500% H Transparency Conditions ... FINE .....

Focus ... 6.75 .....

But gusty NW wind

Spectr. Temp. ... ~~6.75~~ .....

Dome Temp./Hum. ... 11.8° ... 63% H

A "NO FAN" night

~~25~~  
~~18~~

| Exp. Mtr. | Seeing | Mag.     | Sp. | Inst.   | Grating/<br>Tilt     | Slit              | Emulsion | P.H. | Program     | Remarks                          | Quality |
|-----------|--------|----------|-----|---------|----------------------|-------------------|----------|------|-------------|----------------------------------|---------|
|           | 3"     | 666      | G8V | CASSCCD | 1800l/mm<br>@ = 4460 | 300μ              | 4340A°   |      | Seeing test | Don't west                       |         |
|           |        |          |     |         |                      | (Above 300μ slit) |          |      |             | Gusty NW wind.                   |         |
|           |        |          |     |         |                      |                   | 4340A°   | 16c  |             | MAX 12.4 KADY<br>min 7.7 KADY    |         |
|           |        |          |     |         |                      |                   |          | 17c  |             |                                  |         |
| 635       | 3.4"   | B<br>7.0 | B5  |         |                      |                   |          | 18c  | Kok pgn     | Herbig Be <sup>SN</sup> (≈ 80/1) |         |
| 785       | 4.6"   |          |     |         |                      |                   |          | 19c  |             |                                  |         |
| 750       |        |          |     |         |                      |                   |          | 20c  |             |                                  |         |
|           |        |          |     |         |                      |                   |          | 21   |             |                                  |         |
|           |        |          |     |         |                      |                   |          | 1    |             |                                  |         |
|           |        |          |     |         |                      |                   |          | 22   |             |                                  |         |
| 1150      | 5"     | B<br>6.5 |     |         |                      |                   |          | 23   | Kok pgn     | no em<br>150/1 SINE H8           |         |
| 980       |        |          |     |         |                      |                   |          | 24   |             |                                  |         |
|           |        |          |     |         |                      |                   |          | 25   |             |                                  |         |
|           |        |          |     |         |                      |                   |          | 26   |             |                                  |         |



87

pg#1

Wed / Thurs

Emulsion Batches:

Date 1994 June 22/23

Observers

WDE / [BLN] / T.H

CSS 386 ABOUT 6 secs ahead of WWV Time.

| Plate No.  | Object                      | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison     |          |
|------------|-----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|----------------|----------|
|            |                             |              |                     |                         |                       |                   |             | Type/Filter    | Exp.     |
| cc23493194 | comp 1st stellar<br>Hartman |              |                     |                         |                       |                   | +490        | FeAr<br>Clear  | 60/60    |
| 495-518    | FLATS x 24                  |              | Yikes!              | <del>#518</del>         |                       | 00 30W            | +4920       | FeAr<br>Ap 1/4 | 7sec     |
| cc23519    | B145(4)                     |              |                     |                         |                       |                   |             | FeAr<br>Clear  | 60s      |
| 20         | Comp                        |              |                     |                         |                       |                   |             | FeAr<br>Clear  | 60s      |
| 21         | HD 87901                    | 10 03 03     | +12 27 22           | 21 15 30                |                       |                   |             | FeAr<br>Clear  | 32<br>48 |
| 22         | HD 87901<br><del>Comp</del> | "            | "                   | 21 18 56                |                       |                   |             | FeAr<br>Clear  | 60s      |
| 23         | Comp                        |              |                     |                         |                       |                   |             | FeAr<br>Clear  | 60       |
| 24         | Comp                        |              |                     |                         |                       |                   |             | FeAr<br>Clear  | 60       |
| 25         | HD 93521                    | 10 42 42     | 38 06 00            | 21 18 56                |                       | 4 42 W            |             |                | 900      |
| 26         | HD 93521                    | "            | "                   | 21 44 19                |                       |                   |             |                | 900      |
| 27         | comp                        |              |                     |                         |                       |                   |             | FeAr<br>Clear  | 60       |
| 28         | B145(4)                     |              |                     |                         |                       |                   |             |                |          |
| 29         | HD 93521                    | 10 42 42     | +38 06 00           | 22 03 22                |                       | 5 17 W            |             |                | 900      |
| 30         | "                           | "            | "                   | 22 18 43                |                       |                   |             |                | 900      |
| 31         | Comp                        |              |                     |                         |                       |                   |             |                | 60s      |
| 32         | HD 93521                    | 10 42 42     | +38 06 00           | 22 36 58                |                       | 5 51 W            |             |                | 900      |





89

p9 #2

Date 94 June 22/23 Observers WDE [BLN] / TN

Emulsion Batches:

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.....  
.....

| Plate No.     | Object                    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |      |
|---------------|---------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|------|
|               |                           |              |                     |                         |                       |                   |             | Type/Filter   | Exp. |
| 4235 33       | HD93521                   | 104242       | 38 06 00            | 22 52 27                |                       | 06 06 W           |             |               | 900  |
| 34            | comp                      |              |                     |                         |                       |                   |             | FeAr<br>clear | 60s  |
| 35            | BIAS(4)                   |              |                     |                         |                       |                   |             |               |      |
| 36            | Comp                      |              |                     |                         |                       |                   |             | FeAr<br>clear | 60s  |
| 37            | HD167965                  | 18 12 32     | +20730              | 23 18 45                |                       | 00 54 E           |             |               | 829  |
| 38            | "                         | "            | "                   | 23 33 16                |                       | 00 41 E           |             |               | 295  |
| 39            | Comp                      |              |                     |                         |                       |                   |             | FeAr<br>clear | 60s  |
| 40            | BIAS(4)                   |              |                     |                         |                       |                   |             |               |      |
| <del>41</del> | comp 1 stellar<br>Hartman |              |                     |                         |                       |                   |             | FeAr<br>clear | 60/  |
| 43144         | comp 1 stellar<br>Hartman |              |                     |                         |                       |                   |             | FeAr<br>clear | 60/  |
| 45            | comp                      |              |                     |                         |                       |                   |             | FeAr<br>clear | 60   |
| 46            | HP 138629                 | 15 28 12     | 41 14 19            | 0:27:11                 |                       | 02:53 W           |             |               | 568  |
| 47            | "                         | "            | "                   | 0:38:33                 |                       |                   |             |               | 457  |
| 48            | comp                      |              |                     |                         |                       |                   |             | FeAr<br>clear | 60   |
| 49            | comp                      |              |                     |                         |                       |                   |             | FeAr<br>clear | 60   |

Spectr. Temp. .... Dome Temp./Hum.  $20.5^{\circ}\text{C}$  Transparency Conditions *cloud in SW*  
 Focus  $6.72$  ..... *Clear in NE*  
 Spectr. Temp. .... Dome Temp./Hum.  $56.8\%$  .....

| Exp. Mtr. | Seeing | Ptg. Mag.    | Sp.   | Inst.    | Grating/Tilt                                   | Slit  | <del>Clam body</del><br>Emulsion | P.H.    | Program       | Remarks                                      | Quality |
|-----------|--------|--------------|-------|----------|--|-------|----------------------------------|---------|---------------|--|---------|
| 365       | 2.3"   | 7.04         | 09.5V | CASS CCD | 1800 $\frac{\text{slit}}{\text{mm}}$<br>G=6065 | 300mm | 6604A                            | 14c     | BLN 0*        | <del>BLN 0*</del>                            |         |
|           |        |              |       |          |  |       |                                  | 15      | "             |  |         |
|           |        |              |       |          |  |       |                                  | 16c     |               |  |         |
| 2015      | 2"     | $v=$<br>5.59 | B7IV  |          |  |       |                                  | 17c     | Telluric Std. | $\approx 6.5\text{K ADV MAX}$<br>ADU = 1.027 |         |
| 2000      |        |              |       |          |  |       |                                  | 18c     | " "           | Some cloud                                   |         |
|           |        |              |       |          |  |       |                                  | 19c     |               |  |         |
|           |        |              |       |          |  |       |                                  | 1c      |               |  |         |
|           |        |              |       |          | G=6065   |       |                                  | 20c     | focus test    |  |         |
|           |        |              |       |          | G=4565<br>1800 $\frac{\text{slit}}{\text{mm}}$ | 300mm | 4490A                            | 21c     | focus test    |  |         |
|           |        |              |       |          |  |       |                                  | 22c/23c | focus test    |  |         |
|           |        |              |       |          |  |       |                                  | 24c     |               |  |         |
| 2250      |        | $v=$<br>5.02 | ASV   |          |  |       |                                  | 25c     | A shell*      | MAX ADV = 5 K.                               |         |
| 2250      |        |              |       |          |  |       |                                  | 26c     | "             |  |         |
|           |        |              |       |          |  |       |                                  | 27c     |               |  |         |
|           |        |              |       |          |  |       |                                  | 28c     |               |  |         |



91p9 #3

Emulsion Batches:

Date 94 June 22/23 Observers [BLN] WOE / TN.

| Plate No.                 | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |                       |
|---------------------------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|-----------------------|
|                           |           |              |                     |                         |                       |                   |             | Type/Filter   | Exp.                  |
| CC23550                   | HD112028  | 124823       | 835724              | 0:55:18                 |                       |                   |             |               | 574                   |
| 51                        | "         | "            | "                   | 01:05:15                |                       | 06:14 W           |             |               | 570                   |
| 52                        | comp      |              |                     |                         |                       |                   |             | FeAr<br>Clear | 60                    |
| 53                        | BIAS(4)   |              |                     |                         |                       |                   |             |               |                       |
| 54                        | comp      |              |                     |                         |                       |                   |             | FeAr<br>Clear | 60                    |
| 55                        | HD 148283 | 162150       | 373718              | 01:24:36                |                       |                   |             |               | 867                   |
| 56                        | "         |              |                     | 01:39:30                |                       |                   |             |               | 788                   |
| 57                        | comp      |              |                     |                         |                       |                   |             |               |                       |
| CG40 270<br><del>73</del> | HD187120  | 194312       | +4529               |                         |                       | ∞ 00              |             |               | 4 x 67 <sub>as</sub>  |
| CG40 274<br>75            | "         |              |                     |                         |                       |                   |             |               | 2 x 133 <sub>as</sub> |
| CC23558                   | BIAS(4)   |              |                     |                         |                       |                   |             |               |                       |
| 59                        | Comp      |              |                     |                         |                       |                   |             | FeAr<br>Clear | 60s                   |
| 60                        | HD 192518 | 201008       | 282330              | 021224                  |                       | 0:05 E            |             |               | 559                   |
| 61                        | "         | "            | "                   | 022204                  |                       |                   |             |               | 604                   |
| 62                        | comp      |              |                     |                         |                       |                   |             | FeAr<br>Clear | 60                    |



<sup>CCD</sup>  
Spectr. Temp. .... -100°C .....

Dome Temp./Hum. 19.9°C / 59.1% H

Transparency Conditions .. part cloudy .....

Focus ..... 6.82 .....

Dome Temp./Hum. 18.5°C / 63.2

Clear in NE  
clearing in SW  
Telescope still East side of Piers

Spectr. Temp. ....

| Exp. Mtr. | Seeing | Pig. Mag. | Sp.     | Inst.    | Grating/Tilt       | Slit  | Emulsion | P.H. | Program  | Remarks                              | Quality |
|-----------|--------|-----------|---------|----------|--------------------|-------|----------|------|----------|--------------------------------------|---------|
| 2250      |        | 5.20      | A1IIIsh | CASS CCD | 1800 lmm<br>G=4565 | 300mm | 4490A    | 29   | Ashell * |                                      |         |
| 2250      | 2-3"   |           |         |          |                    |       |          | 30   | "        | 25K ADU max                          |         |
|           |        |           |         |          |                    |       |          | 3ci  |          |                                      |         |
|           |        |           |         |          |                    |       |          | 1ci  |          |                                      |         |
|           |        |           |         |          |                    |       |          | 5ci  |          |                                      |         |
| 2030      |        | 5.52      | A5V     |          |                    |       |          | 7ci  | Ashell * |                                      |         |
| 2055      |        |           |         |          |                    |       |          | 8ci  | "        |                                      |         |
|           |        |           |         |          |                    |       |          | 9ci  |          |                                      |         |
|           | 1-2"   | 7.52      | K0III   |          |                    |       |          |      |          | Seeing test Dome East, Tel East Side |         |
|           |        |           |         |          |                    |       |          |      |          | " " Light NW wind                    |         |
|           |        |           |         |          |                    |       |          | 7ci  |          |                                      |         |
|           |        |           |         |          |                    |       |          | 10ci |          |                                      |         |
| 2500      | 1-2"   | 5.18      | A7IVh   |          |                    |       |          | 11ci | Ashell * |                                      |         |
| 2500      |        |           |         |          |                    |       |          | 12ci | "        |                                      |         |
|           |        |           |         |          |                    |       |          | 13ci | "        |                                      |         |

93pg #4

Emulsion Batches:

Date 74 JUNE 22/23 Observers [BLN].W.D.E./T.N...

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| Plate No.            | Object               | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |       |
|----------------------|----------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|-------|
|                      |                      |              |                     |                         |                       |                   |             | Type/Filter   | Exp.  |
| cc23563              | Comp                 |              |                     |                         |                       |                   |             | FeAr<br>clear | 60    |
| 64                   | HD210459             | 220533       | +32415              | 024011                  |                       | 01:35 E           |             |               | 490   |
| 65                   | "                    |              |                     | 024812                  |                       |                   |             |               | 348   |
| 66                   | Comp                 |              |                     |                         |                       |                   |             | FeAr<br>clear | 60s   |
| 67                   | comp                 |              |                     |                         |                       |                   |             | FeAr<br>clear | 60    |
| 68                   | HD187691             | 194612       | 101000              | 031000                  |                       | 01:18 W           |             |               | 657   |
| 69                   | Comp                 |              |                     |                         |                       |                   |             | feAr<br>clear | 60    |
| 70                   | BIAS(4)              |              |                     |                         |                       |                   |             |               |       |
| 71-81                | FLATS x 11           |              |                     |                         |                       | 0120W             | +44°        | Tung<br>clear | 13s   |
| <sup>80/</sup><br>83 | Comp/stellar HARTMAN |              |                     |                         |                       | 00 00             | +43°        | FeAr<br>clear | 60/90 |

<sup>CCD</sup>  
Spectr. Temp. .... -100 °C ..... Dome Temp./Hum. ... 18.5/63.2 ..... Transparency Conditions *part cloudy* ..... 94

Focus ..... 6: 82 .....

Spectr. Temp. .... Dome Temp./Hum. ... 18.1 °C 65% H

*C LAMBDA*

*Tel still East side*

| Exp. Mtr.   | Seeing | H. Mag. | Sp.   | Inst.       | Grating/<br>Tilt             | Slit      | Emulsion | P.H.  | Program     | Remarks                                  | Quality |
|---|--------|---------|-------|-------------|------------------------------|-----------|----------|-------|-------------|--|---------|
|   |        |         |       | C455<br>CCD | 1800 $\lambda$ /mm<br>G=4565 | 300 $\mu$ | 4490A    | 14    |             | CCDT = -101.5 °C                         |         |
| 4050  | 2-3"   | 4.29    | F5III |             |                              |           |          | 15    | A shell ppm | $\approx$ 5 k ADU max                    |         |
| 4100  |        |         |       |             |                              |           |          | 16    | "           |  |         |
|   |        |         |       |             |                              |           |          | 17    |             |  |         |
|   |        |         |       |             |                              |           |          | 18    |             |  |         |
| 1600  | 3"     | 5.11    | F8V   |             |                              |           |          | 20    | R.V. std.   | <i>cloudy too</i><br>Full Moon 30° to SW |         |
|   |        |         |       |             |                              |           |          | 21    |             |  |         |
|   |        |         |       |             |                              |           |          | 1     |             |  |         |
|   |        |         |       |             |                              |           |          | 22    |             | 13.8 k ADU max                           |         |
|   |        |         |       |             |                              |           |          | 24/23 | Focus test  |  |         |
| <p><math>T = +18.1 °C</math></p> <p><u>All to WORM + PERSEUS.</u></p> |        |         |       |             |                              |           |          |       |             |  |         |





CCD Spectr. Temp.  $-100^{\circ}\text{C}$

Dome Temp./Hum.  $19.7^{\circ}/71.6\%$

Transparency Conditions  $\text{Clear with cloud on horizon}$  <sup>96</sup>

Focus  $6.75$

FANS ON

Spectr. Temp. ....

Dome Temp./Hum. ....

430 0 50 1024 4 1 CCDfmt

| Exp. Mtr.                          | Seeing | Ptg. Mag. | Sp.  | Inst.                 | Grating/Tilt       | Slit      | Emulsion | P.H.        | Program         | Remarks                                       | Quality |
|------------------------------------|--------|-----------|------|-----------------------|--------------------|-----------|----------|-------------|-----------------|---|---------|
|                                    |        |           |      | Cass<br>CCD           | 1800x1mm<br>h=6065 | 300<br>um | 6604A    | 3ci/<br>4ci | Focus Test      |   |         |
|                                    |        |           |      |                       |                    |           |          | 1           |                 |   |         |
|                                    |        |           |      |                       |                    |           |          | 5           |                 | <u>Telescope Reversed</u>                     |         |
| 2000                               | 4.5"   | 1.36      |      | B7X<br>Max ADU = 4500 |                    |           |          | 6           | Telluric<br>std | Air Mass End = 3.3                            |         |
| 4050                               |        | 1.36      |      | B7X<br>Max ADU = 8400 |                    |           |          | 7           | "               |   |         |
|                                    |        |           |      |                       |                    |           |          | 8           |                 |   |         |
|                                    |        |           |      |                       |                    |           |          | 9           |                 |   |         |
| 744                                |        | 5.00      | Apsi | $\sim 240:1$          | SIN                |           |          | 10ci        | BlHe* pgm       | clouded in                                    |         |
|                                    |        |           |      |                       |                    |           |          | 11ci        |                 |   |         |
|                                    |        |           |      |                       |                    |           |          | 12ci        |                 |   |         |
|                                    |        |           |      |                       |                    |           |          | 13ci        |                 | NOTE: flat fields<br>range from 9963 to 12315 |         |
| <p>All to WORM<br/>and PERSEUS</p> |        |           |      |                       |                    |           |          |             |                 |   |         |

PT pg. #1

Emulsion Batches:

Date 1994 Jun 30/Jul 1 Observers T<sub>2</sub>/H/W [Cass Flexure Tests] .....

| Plate No. | Object       | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T.         | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |       |
|-----------|--------------|--------------|---------------------|---------------------------------|-----------------------|-------------------|-------------|---------------|-------|
|           |              |              |                     |                                 |                       |                   |             | Type/Filter   | Exp.  |
| cc23615/6 | Comp/Stellar | Hartman      | Mask                | Position                        |                       | 0                 | 45°         | FeNe<br>Clear | 2/2   |
| 17        | Bias (4)     |              |                     |                                 |                       |                   |             |               |       |
| 18        | Comp         |              |                     | 23 00 40<br><del>22 53 11</del> |                       | 9 E               | 45°         | FeNe<br>Clear | 1 sec |
| 19        | Comp         |              |                     | 23 01 59                        |                       | 8 E               | ↓           | ↓             | ↓     |
| 20        | Comp         |              |                     | 23 03 21                        |                       | 7 E               |             |               |       |
| 21        | Comp         |              |                     | 23 04 29                        |                       | 6 E               |             |               |       |
| 22        | Comp         |              |                     | 23 05 38                        |                       | 5 E               |             |               |       |
| 23        | Comp         |              |                     | 23 06 48                        |                       | 4 E               |             |               |       |
| 24        | Comp         |              |                     | 23 07 36                        |                       | 3 E               |             |               |       |
| 25        | Comp         |              |                     | 23 08 28                        |                       | 2 E               |             |               |       |
| 26        | Comp         |              |                     | 23 09 17                        |                       | 1 E               |             |               |       |
| 27        | Comp         |              |                     | 23 14 10                        |                       | 0                 |             |               |       |
| 28        | Comp         |              |                     | 23 15 36                        |                       | 1 W               |             |               |       |
| 29        | Comp         |              |                     | 23 16 38                        |                       | 2 W               |             |               |       |
| 30        | Comp         |              |                     | 17 30                           |                       | 3 W               | ↓           | ↓             | ↓     |

Spectr. Temp. .... Dome Temp./Hum.  $-17.9^{\circ}\text{C}/72\pm 4\%$  Transparency Conditions ... Cloudy 98

Focus ... 6.75

Spectr. Temp. gain = 9.0 ..... Dome Temp./Hum. .... c LAMBDA 578 0 30 1024 1 1 ccdfmt

| Exp. Mtr. | Seeing | Pig. Mag. | Sp. | Inst.        | Grating/Tilt         | Slit            | Emulsion | P.H. | Program      | Remarks              | Quality |
|-----------|--------|-----------|-----|--------------|----------------------|-----------------|----------|------|--------------|----------------------|---------|
|           |        |           |     | C.455<br>CCD | 1800 l/m<br>G = 5850 | 200u<br>Pinhole | 6350A    | 3/4  | Focus Test   | T = 17.9, foc = 6.75 |         |
|           |        |           |     |              |                      |                 |          | 1    |              |                      |         |
|           |        |           |     |              |                      |                 |          | 5    | Flexure Test | Max ADU = 7187       |         |
|           |        |           |     |              |                      |                 |          | 6    |              | 7596                 |         |
|           |        |           |     |              |                      |                 |          | 7    |              | 8453                 |         |
|           |        |           |     |              |                      |                 |          | 7    |              | 8627                 |         |
|           |        |           |     |              |                      |                 |          | 8    |              | 8328                 |         |
|           |        |           |     |              |                      |                 |          | 9    |              | 7404                 |         |
|           |        |           |     |              |                      |                 |          | 10   |              | 6972                 |         |
|           |        |           |     |              |                      |                 |          | 11   |              | 7257                 |         |
|           |        |           |     |              |                      |                 |          | 12   |              | 7609                 |         |
|           |        |           |     |              |                      |                 |          | 13   |              | 6706                 |         |
|           |        |           |     |              |                      |                 |          | 14   |              | 6874                 |         |
|           |        |           |     |              |                      |                 |          | 15   |              | 6963                 |         |
|           |        |           |     |              |                      |                 |          | 16   |              | 6806                 |         |

Dome Turned to NW / Spectrograph Controller died and was reset. (with grating disabled)

↓



9-99 #2

Emulsion Batches:

Date 1994 Jun 30/Jul 1 Observers Tn/Hlw [Cass Flexure Tests]

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| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.  |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| CC23631   | Comp      |              |                     | 23 18 22                |                       | 4W                | 45°         | FeNe<br>Clear             | 1 sec |
| 32        | Comp      |              |                     | 23 19 38                |                       | 5W                | ↓           |                           |       |
| 33        | Comp      |              |                     | 23 20 51                |                       | 05:50 W           | ↓           |                           |       |
| 34        | Comp      |              |                     | 23 32 24                |                       | 05:45 E           | 0°          |                           |       |
| 35        | Comp      |              |                     | 23 33 24                |                       | 5E                |             |                           |       |
| 36        | Comp      |              |                     | 23 34 18                |                       | 4E                |             |                           |       |
| 37        | Comp      |              |                     | 23 35 11                |                       | 3E                |             |                           |       |
| 38        | Comp      |              |                     | 23 36 17                |                       | 2E                |             |                           |       |
| 39        | Comp      |              |                     | 23 38 23                |                       | 1E                |             |                           |       |
| 40        | Comp      |              |                     | 23 39 29                |                       | 0                 |             |                           |       |
| 41        | Comp      |              |                     | 23 40 38                |                       | 1W                |             |                           |       |
| 42        | Comp      |              |                     | 23 41 29                |                       | 2W                |             |                           |       |
| 43        | Comp      |              |                     | 23 42 15                |                       | 3W                |             |                           |       |
| 44        | Comp      |              |                     | 23 43 27                |                       | 03:45 W           | ↓           |                           |       |
| 45        | Bias (4)  |              |                     |                         |                       |                   |             |                           |       |
| 46-48     | 3 × Flats |              |                     |                         |                       | 0                 | 30°         | Tung<br>Clear             | 5 sec |



Spectr. Temp. .... Dome Temp./Hum.  $17.8^{\circ}\text{C}/72.7\%$  Transparency Conditions ... Cloudy ..... 100

Focus ..... 6.75

Spectr. Temp. again = 90 ..... Dome Temp./Hum. .... 578 0 30 1024 1 1 ccdfmt.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.  | Grating/Tilt         | Slit                 | Emulsion | P.H. | Program                | Remarks        | Quality |
|-----------|--------|-----------|-----|--|----------------------|----------------------|----------|------|------------------------|----------------|---------|
|           |        |           |     | Cass cd)   | 1800l/mm<br>G = 5850 | 200 $\mu$<br>pinhole | 6350Å    | 17   | Flexure Test           | Max ADU = 5147 |         |
|           |        |           |     |  |                      |                      |          | 18   | ↓                      | 5621           |         |
|           |        |           |     |  |                      |                      |          | 19   |                        | 6279           |         |
|           |        |           |     | Large Dome Movement                              |                      |                      |          | 20   |                        | 8221           |         |
|           |        |           |     |  |                      |                      |          | 21   |                        | 7419           |         |
|           |        |           |     |  |                      |                      |          | 22   |                        | 8017           |         |
|           |        |           |     |  |                      |                      |          | 22   |                        | 8380           |         |
|           |        |           |     |  |                      |                      |          | 23   |                        | 7904           |         |
|           |        |           |     |  |                      |                      |          | 24   |                        | 7592           |         |
|           |        |           |     | Dome Motion                                      |                      |                      |          | 25   |                        | 7543           |         |
|           |        |           |     | "  |                      |                      |          | 26   |                        | 6820           |         |
|           |        |           |     | "  |                      |                      |          | 27   | 6484                   |                |         |
|           |        |           |     |  |                      |                      |          | 28   | 6538                   |                |         |
|           |        |           |     |  |                      |                      |          | 29   | 6896                   |                |         |
|           |        |           |     |  |                      |                      |          | 1    |                        |                |         |
|           |        |           |     | Spectrograph Controller blew fuse, was replaced. |                      |                      |          | 30   | All to WORM & Perseus. |                |         |

pg #1

Date JULY 11 1994 Observers WDE./Th. EBLN]

Emulsion Batches:

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| Plate No.  | Object                  | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T.  | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |               |    |
|------------|-------------------------|--------------|---------------------|--|-----------------------|-------------------|-------------|---------------|---------------|----|
|            |                         |              |                     |  |                       |                   |             | Type/Filter   | Exp.          |    |
| cc23649150 | comp/stellar<br>Hartman |              |                     |  |                       |                   |             | FeAr<br>Clear | 60/<br>60     |    |
| 651        | BIAS (4)                | }            | }                   | Note, These files not seen when backup started.<br>Recovery attempted, unsuccessful. |                       |                   |             |               |               |    |
| 652        | comp                    |              |                     |  |                       |                   |             |               | FeAr<br>Clear | 60 |
| 653        | HD 87901                |              |                     |  |                       |                   | 10 03 03    | 12 27 22      | 20:52:16      |    |
| 654        | HD 87901                | "            | "                   | 20:59:30   |                       | 05:08W            |             | 56            |               |    |
| 655        | comp                    |              |                     |  |                       |                   |             | FeAr<br>Clear | 60            |    |
| 656        | comp                    |              |                     |  |                       |                   |             | FeAr<br>Clear | 60            |    |
| 657        | HD 93521                | 10 42 42     | 38 06 00            | 21:01:53   |                       | 04 46 W           |             |               | 614           |    |
| 658        | HD 93521                | "            | "                   | 21 12 25   |                       | 05 02 W           |             |               | 903           |    |
| 659        | Comp                    |              |                     |  |                       |                   |             | FeAr<br>Clear | 60s           |    |
| 660        | HD 93521                | 10 42 42     | +38 06              | 21 29 58   |                       | 05 20 W           |             |               | 900s          |    |
| 661        | HD 93521                | "            | "                   | 21 45 29   |                       |                   |             |               | 901s          |    |
| 662        | comp                    |              |                     |  |                       |                   |             |               |               |    |
| 663        | BIAS (4)                |              |                     |  |                       |                   |             |               |               |    |
| 664        | HD 93521                | 10 42 42     | 38 06 00            | 22 04 33   |                       |                   |             |               | 900s          |    |

CCD  
Spectr. Temp. -100.0°C

Dome Temp./Hum. 22.6°C / 62.2% Transparency Conditions Semi cloudy 102

Focus 6.75

Dome Temp./Hum. 21.2°C / 71.6% CHINA DAY: Lots of fireworks about  
Top up from scratch @ 20:15 EST

Spectr. Temp. c.gain = 90

| Exp. Mtr. | Seeing | Pte. Mag.  | Sp.   | Inst.               | Grating/Tilt       | Slit  | Emulsion | P.H.            | Program       | Remarks                           | Quality   |
|-----------|--------|------------|-------|---------------------|--------------------|-------|----------|-----------------|---------------|-----------------------------------|-----------|
|           |        |            |       | CASS<br>CCD         | 1800 2mm<br>G=6065 | 300mm | 6604A    | 3/4             | focus<br>test |                                   |           |
|           |        |            |       | Telescope Reversed. |                    |       |          | 1ci             |               | BLAS 4. BAT                       |           |
|           |        |            |       |                     |                    |       |          | 5ci             |               |                                   |           |
| 2000      | good   | V=<br>1.36 | B7V   |                     |                    |       |          | Air mass = 3.06 |               | Telluric std.                     |           |
| 2000      |        | "          | "     |                     |                    |       |          | 6ci             |               | Telluric std.                     |           |
|           |        |            |       |                     |                    |       |          | 7ci             |               |                                   |           |
|           |        |            |       |                     |                    |       |          | 8ci             |               |                                   |           |
| 535       | 1.2"   | B=<br>6.76 | 09.5V |                     |                    |       |          | 9ci             | BLNO* pgm     | Air mass 1.65<br>increasing cloud | S/N 130/1 |
| 586       | 2"     |            |       |                     |                    |       |          | 10ci            | "             | S/N = 145                         |           |
|           |        |            |       |                     |                    |       |          | 11ci            |               |                                   |           |
| 493       | 2"     | B=6.76     | 09.5V |                     |                    |       |          | 12ci            | BLNO* pgm     | Air mass = 1.90                   |           |
| 520       |        |            |       |                     |                    |       |          | 13ci            | "             |                                   |           |
|           |        |            |       |                     |                    |       |          | 14ci            |               |                                   |           |
|           |        |            |       |                     |                    |       |          | 1ci             |               |                                   |           |
| 283       |        | B=6.76     | 09.5V |                     |                    |       |          | 15ci            | BLNO*         | ~ 110 S/N                         |           |



Date JULY 1/2 1994 Observers [BLN] WDE./T.W.

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| Plate No. | Object   | R.A.   | Declination | Starting Time | Ending Time | Hour Angle | Declination | Comparison    |      |
|-----------|----------|--------|-------------|---------------|-------------|------------|-------------|---------------|------|
|           |          | 1900   | 1900        | E.S.T.        | E.S.T.      | End        |             | Type/Filter   | Exp. |
| 023665    | HD93521  | 104242 | 380600      | 222001        |             |            |             |               | 900  |
| 666       | comp     |        |             |               |             |            |             | FeAr<br>Clear | 60   |
| 667       | BIAS (4) |        |             |               |             |            |             |               |      |
| 668       | comp     |        |             |               |             |            |             | FeAr<br>clear | 60   |
| 669       | HD124224 | 140712 | 025300      | 224346        |             | 0303W      |             |               | 550s |
| 670       | HD124224 | "      | "           | 225322        |             |            |             |               | 550s |
| 671       | HD124224 | "      | "           | 230257        |             | 0325W      |             |               | 614s |
| 672       | Comp     |        |             |               |             |            |             | FeAr<br>clear | 60   |
| 673       | HD124224 | 140712 | 025300      | 231610        |             | 0342W      |             |               | 900  |
| 674       | HD124224 | "      | "           | 233328        |             | 0359W      |             |               | 875  |
| 675       | Comp     |        |             |               |             |            |             | FeAr<br>Clear | 60s  |
| 676       | HD124224 | 140712 | 025300      | 235053        |             |            |             |               | 900  |
| 677       | HD124224 | "      | "           | 00617         |             |            |             |               | 903  |
| 678       | COMP     |        |             |               |             |            |             | FeAr<br>clear | 60   |
| 679       | HD124224 | 140712 | 025300      | 02517         |             |            |             |               | 703  |



CCD - 100°C  
 Spectr. Temp. ....  
 Focus ..... 6.75  
 Spectr. Temp. 19.91h = 90

Dome Temp./Hum. ... 21.2°/71.7% Transparency Conditions .. h.r.z.y. - cloudy ..... 104  
 Dome Temp./Hum. ... 20.9° 72.7% H

| Exp. Mir. | Seeing | Pig. Mag. | Sp.   | Inst.    | Grating/Tilt                       | Slit  | <del>Emission</del> | P.H. | Program | Remarks                         | Quality |
|-----------|--------|-----------|-------|----------|------------------------------------|-------|---------------------|------|---------|---------------------------------|---------|
| 354       |        | B = 6.76  | 09.5V | CASS CCD | 1800 lmm <sup>-1</sup><br>G = 6065 | 300um | 6604A               | 16ci | BLN 0*  | 125 S/N                         |         |
|           |        |           |       |          |                                    |       |                     | 17ci |         |                                 |         |
|           |        |           |       |          |                                    |       |                     | 18ci | BLN He* |                                 |         |
| 2005      | 12"    | V = 5.0   | ApSi  |          |                                    |       |                     | 19ci | BLN He* | 315/1 S/N                       |         |
| 2200      | 13"    | "         | "     |          |                                    |       |                     | 20ci | "       | AIR MASS = 1.091, 315 S/N       |         |
| 2000      |        | "         | "     |          |                                    |       |                     | 21ci | "       | 305 S/N.                        |         |
|           |        |           |       |          |                                    |       |                     | 22ci |         |                                 |         |
| 2045      | 2"     | V = 5.0   | ApSi  |          |                                    |       |                     | 23ci | BLN He* | > 300/1 S/N<br>increasing cloud |         |
| 2007      | 12"    |           |       |          |                                    |       |                     | 24ci | "       | ~345 S/N                        |         |
|           |        |           |       |          |                                    |       |                     | 25ci |         |                                 |         |
| 2090      | 2 1/2" | V = 5.0   | ApSi  |          |                                    |       |                     | 26ci | BLN Hex | Air MASS : 2.6                  |         |
| 1383      |        | "         | "     |          |                                    |       |                     | 27ci | "       |                                 |         |
|           |        |           |       |          |                                    |       |                     | 28ci |         |                                 |         |
|           |        | V = 5.0   | ApSi  |          |                                    |       |                     | 29ci | BLN He* | CLOUDY (really low signal)      |         |



CCD

Spectr. Temp.  $-111^{\circ}\text{C}$

Dome Temp./Hum.  $+20.4^{\circ}\text{C}$  73.2%

Transparency Conditions  $\dots$  Part. cloudy 106

Focus  $675$

Spectr. Temp.  $\dots$

Dome Temp./Hum.  $+20.0^{\circ}\text{C}$  75.9%

I noticed that we forgot to set CCD Temp to  $-100^{\circ}\text{C}$

| Exp. Mtr.                                | Seeing | Ptg. Mag.  | Sp.  | Inst.    | Grating/Tilt       | Slit  | <del>Emulsion</del> | P.H. | Program         | Remarks                         | Quality |
|--|--------|------------|------|----------|--------------------|-------|---------------------|------|-----------------|---------------------------------|---------|
|  |        |            |      | CASS CCD | 1800 Lum<br>G=6065 | 300um | 6604A               | 30ci |                 | NOTE CCD<br>TEMP!               |         |
|  |        |            |      |          |                    |       |                     | 5ci  |                 | CCDT = $-111.4^{\circ}\text{C}$ |         |
| 2000                                     | 2.5"   | V=<br>5.77 | B2Vh | MAX      | ADU ~              | 8K    |                     | 6ci  | Telluric<br>STD | 1.01 Air Mass                   |         |
| 2030                                     | "      | "          | "    |          |                    |       |                     | 7ci  | Telluric        | CCDT = $-112.5^{\circ}\text{C}$ |         |
|  |        |            |      |          |                    |       |                     | 8ci  |                 |                                 |         |
|  |        |            |      |          |                    |       |                     | 11ci |                 | 14K ADU at start of WRI TES     |         |
|  |        |            |      |          |                    |       |                     | 1ci  |                 | CCDT = $-114.0$                 |         |
|  |        |            |      |          |                    |       |                     | 3/4  | focustest       |                                 |         |
| <hr/> <p>All to WORM + PERSEUS</p> <hr/> |        |            |      |          |                    |       |                     |      |                 |                                 |         |

Date 9<sup>th</sup> JUL 1953 Observers [Bin] III / Tr  
Sat / son.....  
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| Plate No.      | Object                | R.A.<br>1900        | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination                   | Comparison<br>Type/Filter | Exp.           |
|----------------|-----------------------|---------------------|---------------------|-------------------------|-----------------------|-------------------|-------------------------------|---------------------------|----------------|
| CC 23709<br>10 | Comp / Stellar        |                     |                     |                         |                       | 0 08W             | +40°                          | Fe Ar<br>clear            | 60/60          |
| 11             | Bias (4)              |                     |                     | 20:55:00                |                       |                   |                               |                           |                |
| 12             | Comp                  |                     |                     | 21:16:02                |                       |                   |                               | Fe Ar<br>clear            | 60             |
| 13             | HD 124 224            | 14 07 12            | +2° 53'             | 21 18 23                |                       | 02 03W            | Air Mass<br>1.54              |                           | 1859           |
| 14             | Comp                  |                     |                     | 21:50:25                |                       |                   |                               | Fe Ar<br>clear            | 60             |
| 15             | Bias (4)              |                     |                     | 21:51:49                |                       |                   |                               |                           |                |
| 16             | HD 124 224            | 14 07 12            | 2 53                | 21:53:17                |                       | 02 37W            | Air Mass<br>1.704             | F                         | 1800           |
| 17             | Comp                  |                     |                     | 22:24:26                |                       |                   |                               | Fe Ar<br>clear            | 60             |
| 18             | HD 124 224            | 14 07 12            | 2 53                | 22:26:32                |                       | 03 10W            | Air Mass<br>1.943             |                           | 1800           |
| 19             | Comp                  |                     |                     | 22:57:27                |                       |                   |                               | Fe Ar<br>clear            | 60             |
| 20             | Bias (4)              |                     |                     | 22:58:45                |                       |                   |                               |                           |                |
| 21             | HD 124 224            | 14 07 12            | 2 53                | 23:00:22                |                       | 03 35W            | Air Mass<br>2.207             |                           | 1291           |
| 22             | Comp                  |                     |                     | 23:22:47                |                       |                   |                               | Fe Ar<br>clear            | 60             |
| 23             | <del>HD 124 224</del> | <del>14 07 12</del> | <del>2 53</del>     | <del>23:26:29</del>     |                       | <del>03 50W</del> | <del>Air Mass<br/>2.418</del> |                           | <del>600</del> |
| 24             | Comp                  |                     |                     | 23:38:10                |                       |                   |                               | Fe Ar<br>clear            | 60             |



CCD  
 Spectr. Temp. ... -100°C ..... Dome Temp./Hum. 7.7.6°C... 65.6% H Transparency Conditions ... Part cloudy ... clearing 168  
 Focus ..... 6.80 ..... Top-up from scratch  
 Spectr. Temp. ... 90. C gain ... Dome Temp./Hum. ....  
c Lambda CCDFMT 49.0 0.50 1024 4 1

| Exp. Mtr. | Seeing | Mg. Mag. | Sp.  | Inst.       | Grating/Tilt        | Slit              | Emulsion     | P.H.     | Program    | Remarks   | Quality |
|-----------|--------|----------|------|-------------|---------------------|-------------------|--------------|----------|------------|---|---------|
|           |        |          |      | CASS<br>CCD | 1800/n/mm<br>G=6065 | 300 $\mu$<br>Full | 660A $\beta$ | 3/4<br>1 | focus test | Telescope on W side of pier<br>Too Cloudy for Regular | 17.4°   |
|           |        |          |      |             |                     |                   |              | 5ci      |            | thick cloud + 3.69 AIR MASS                           | 17.1°   |
| 806       | 2"-3"  | S.0      | ApSi | ~ 140:1     | S/N                 |                   |              | 6ci      | Bln He*    | Telescope on East side of pier                        | 16.4°   |
|           |        |          |      |             |                     |                   |              | 7ci      |            |   |         |
|           |        |          |      |             |                     |                   |              | 1ci      |            |   |         |
| 1231      | 3.4"   | S.0      | ApSi | ~ 175:1     | S/N                 |                   |              | 8ci      | Bln He*    |   | 16.2°   |
|           |        |          |      |             |                     |                   |              | 9ci      |            |   |         |
| 1244      |        | S.0      | ApSi | ~ 180:1     | S/N                 |                   |              | 10ci     | Bln He*    |   | 15.6°   |
|           |        |          |      |             |                     |                   |              | 11ci     |            |   |         |
|           |        |          |      |             |                     |                   |              | 1ci      |            |   |         |
| 2203      |        | S.0      | ApSi |             |                     |                   |              | 12ci     | Bln He*    |   | 15.6°   |
|           |        |          |      |             |                     |                   |              | 12ci     |            |   |         |
| 2499      |        | S.0      | ApSi |             |                     |                   |              | 13ci     | 13ln He*   | Lost one  | 15.5°   |
|           |        |          |      |             |                     |                   |              | 14ci     |            |   |         |

Date 94 July 2/3 Observers [B] [A] [K] [A]

Set 1500

| Plate No.     | Object               | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination       | Comparison<br>Type/Filter | Exp.      |
|---------------|----------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------------|---------------------------|-----------|
| CG23725       | <del>HD</del> 124224 | 14 07 12     | + 2 53 00           | 23:51:39                |                       | 4:14W             | Air mass<br>2.871 |                           | 535       |
| 26            | Comp                 |              |                     | 00:01:18                |                       |                   |                   |                           |           |
| 27            | Bias (4)             |              |                     | 00:02:43                |                       |                   |                   |                           |           |
| 28            | HD 124224            | 14 07 12     | + 2 53 00           | 00:04:10                |                       | 4:29W             | Air mass<br>3.281 |                           | 693       |
| 29            | Comp                 |              |                     | 00:16:39                |                       |                   |                   | Fe Ar<br>clear            | 60        |
| 30            | Comp                 |              |                     | 00:22:35                |                       |                   |                   | Fe Ar<br>clear            | 60        |
| 31            | HD 130109            | 14 41 12     | + 2 18 51           | 00:24:34                |                       | 4:09W             | Air mass<br>2.811 |                           | 302       |
| 32            | HD 130109            | 14 41 12     | + 2 18 51           | 00:30:16                |                       | 4:16W             |                   |                           | 356       |
| 33            | Comp                 |              |                     | 00:37:09                |                       |                   |                   | Fe Ar<br>clear            | 60        |
| 34            | BIAS (1)             |              |                     | 00:43                   |                       |                   |                   |                           |           |
| CG40276<br>79 | HD 176844            | 18 57 03     | + 40 32 36          |                         |                       |                   |                   | 4x                        | 0.067 sec |
| CG40280<br>81 | "                    | "            | "                   |                         |                       | 00 20W            |                   | 2x                        | 0.133 sec |
| 35            | Comp                 |              |                     | 01:00:51                |                       |                   |                   | Fe Ar<br>clear            | 60        |
| 36            | HD 187235            | 19 43 55     | + 38 09 36          | 01:03:37                |                       | 00 01 E           | Air Mass<br>1.004 |                           | 954       |
| 37            | — " —                |              |                     | 01:20:42                |                       | 00 15W            |                   |                           | 911       |

Spectr. Temp. .... Dome Temp./Hum. ... 15.4°/75% Transparency Conditions . . . mostly clear now . . . . . 110

Focus ..... 6.80 .....

Spectr. Temp. .... 90.0 gain ..... Dome Temp./Hum. ....

| Exp. Mtr.   | Seeing | <del>Pg</del><br>Mag. | Sp.  | Inst.       | Grating/<br>Tilt     | Slit      | Emulsion<br><del>element</del> | P.H. | Program              | Remarks   | Quality |
|---|--------|-----------------------|------|-------------|----------------------|-----------|--------------------------------|------|----------------------|---|---------|
| 2200  | 4"     | 5.0                   | Aps: | Cass<br>CCD | 1300 & 1mm<br>G=6065 | 300<br>um | 6604A                          | 15ci | B1n He*              | ~260:1 S/N<br>Telescope tilt on<br>E side of pier | 15.3°   |
| 2700  |        | 5.0                   | Aps: |             |                      |           |                                | 16ci |                      |   |         |
|   |        |                       |      |             |                      |           |                                | 17ci | B1n He*              | MAX 6K ADU  | 15.3°   |
|   |        |                       |      |             |                      |           |                                | 18ci |                      |   |         |
|   |        |                       |      |             |                      |           |                                | 19ci |                      |   |         |
| 4025  |        | 3.72                  | AOV  | ~310:1      | S/N                  |           |                                | 20ci | Telluric<br>standard | Max 9K ADU  | 15.3°   |
| 4425  |        | 3.72                  | AOV  | ~395:1      | S/N                  |           |                                | 21ci | — " —                | Max 10K ADU                                       |         |
|   |        |                       |      |             |                      |           |                                | 22ci |                      |   |         |
|   |        |                       |      |             |                      |           |                                | 1ci  |                      |   | 15.2°   |
| <p>* 665 M2 III ABOVE 300u slit<br/>         } Both were with default 1ms integration by accident)<br/>         Seeing test Dome East, Tel East too<br/>         " " Medium N/W breeze,</p> |        |                       |      |             |                      |           |                                |      |                      |   |         |
|   |        |                       |      |             |                      |           |                                | 22ci |                      |   | 15.1°   |
| 4240  |        | 5.77                  | BSVn | ~360:1      | S/N                  |           |                                | 23ci | Telluric<br>standard | Max 10.5K ADU                                     | 14.9°   |
| 4000  |        | 5.77                  | BSVn |             |                      |           |                                | 24ci | — " —                |   |         |



Date ... 94 July 213 Observers ... [Bin] III / T. n ...

Sat / Sun

| Plate No.      | Object                      | R.A.<br>1900                 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination        | Comparison<br>Type/Filter | Exp.  |
|----------------|-----------------------------|------------------------------|---------------------|-------------------------|-----------------------|-------------------|--------------------|---------------------------|-------|
| 23 7 30        | Comp                        |                              |                     | 01:37:03                |                       |                   |                    | Fear<br>clear             | 60    |
| 39             | Bias (4)                    |                              |                     | 01:38                   |                       |                   |                    |                           |       |
| CG40282<br>285 | 100 Her (double star)       |                              |                     | FROM Norton's Atlas     |                       |                   |                    | 4x                        | 67ms  |
| 286<br>-287    | 100 Her                     | 18 05.8                      | +2605               |                         |                       | 2215W             | +2610              | 2x                        | 133ms |
| CG23740        | -60 FLATS x 21 (7 flat bat) |                              |                     | 02:03:23                | 02:16:58              | 0235W             | +2°30'             | TUNG<br>Ap/1A             | 7sec  |
| CG46288<br>92  | 61 Cgg (Pair)               | 21 06.9                      | +3845               |                         |                       |                   |                    | 4x                        | 67ms  |
| CG40293<br>97  | " "                         | "                            | "                   |                         |                       | 0007E             | +3845              | 2x                        | 133ms |
| CG23761        | Comp                        |                              |                     | 02:40:05                |                       |                   |                    |                           |       |
| 62             | H0196/29                    | 20 53.7                      | +404655             | 02:42:40                |                       | 0013W             | A.R. MASS<br>1.002 |                           | 106   |
| 63             | — " —                       |                              |                     | 02:47:16                |                       |                   |                    |                           | 128   |
| 64             | Comp                        |                              |                     | 02:51:03                |                       |                   |                    | Fear<br>clear             | 60    |
| 65             | Bias (4)                    |                              |                     | 02:52                   |                       |                   |                    |                           |       |
| 66             | Comp                        |                              |                     | 03:00:53                |                       |                   |                    | Fear<br>clear             | 60    |
| 67             | H0201909                    | 21 07 30<br><del>20535</del> | +77 43 15           | 03:03:54                |                       | 0:37W             | A.R. MASS<br>1.213 |                           | 764   |
| 68             | — " —                       |                              |                     | 03:17:11                |                       | 0:50W             |                    |                           | 747   |



CCD  
 Spectr. Temp. ... 1.00.4.°... Dome Temp./Hum. ... 14.7°/74.0% Transparency Conditions ... Five .....  
 Focus ..... 6.80 .....  
 Spectr. Temp. ... 9.0.6. gain Dome Temp./Hum. .... NE Fan still on

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| Exp. Mtr. | Seeing             | Avg. Mag.           | Sp.                             | Inst.       | Grating/Tilt       | Slit   | Emulsion | P.H.                    | Program                   | Remarks  | Quality |
|-----------|--------------------|---------------------|---------------------------------|-------------|--------------------|--|----------|-------------------------|---------------------------|--|---------|
|           |                    |                     |                                 | Cass<br>CCD | 1800/1mm<br>G=6065 | 300<br>um  | 6604A    | 25ci                    |                           |  |         |
|           | 3"                 | 5.9<br>5.9          | (185 P.A., 14.1 sp, 1923)       |             |                    |  |          | 1ci                     |                           |  |         |
|           | (Intensifier <350) |                     | for All sets)                   |             |                    | ABOVE and<br>Below 300um slit                    |          | 26ci                    |                           | Dome SW, Telescope still east side<br>NO WIND<br>Seeing test scale & test for current<br>Camera. (EEV 100438, installed June 21) |         |
|           | * RANGE :          | 11000<br>5.2<br>6.0 | -14000 ADU<br>(149°PA, 30.2 sp) |             |                    | CCD Temp still -60°C<br>straddling slit<br>again |          | 26ci<br><del>27ci</del> |                           | Seeing test / scale test again.<br>FOR SAME EEV 100438 camera  |         |
| 2508      |                    | 3.94                | ALVn                            | Max         | 8100 ADU           |  |          | 28ci<br><del>26ci</del> |                           | Telluric Std check   |         |
| 3000      |                    | 3.94                | ALVn                            | ~ 300:1 S/N | Max 10K ADU        |  |          | 29ci                    | " "                       | " "  | 14.2°   |
|           |                    |                     |                                 |             |                    |  |          | 56ci                    |                           |  |         |
|           |                    |                     |                                 |             |                    |  |          | 1ci                     |                           |  |         |
|           |                    |                     |                                 |             |                    |  |          | 5ci                     |                           |  | 13.0°   |
| 3000      |                    | 5.91                | 88Vn                            | ~ 270:1 S/N |                    |  |          | 6ci                     | Blk Telluric<br>Std Check | Max 6800 ADU   |         |
| 3000      |                    | 5.91                | 88Vn                            |             |                    |  |          | 7ci                     | — " —                     |  |         |



CCD Spectr. Temp. ... 99.9° ... Dome Temp./Hum. ... 13.4° / 77.3% Transparency Conditions ... Fine

Focus ... 6.80

Spectr. Temp. ... 90.67°C ... Dome Temp./Hum. ... 13.4° / 77.2% H

| Exp. Mtr.              | Seeing | Fig. Mag. | Sp. | Inst.      | Grating/Tilt       | Slit      | Emission | P.H. | Program                | Remarks                            | Quality |
|------------------------|--------|-----------|-----|------------|--------------------|-----------|----------|------|------------------------|------------------------------------|---------|
|                        |        |           |     | Cass CCD   | 1800/1mm<br>G=6065 | 300<br>um | 6604A    | Sci  |                        | Telescope still on E. side of pier |         |
| 2510                   |        | 5.44      | B7V | 2245:1 S/N |                    |           |          | Sci  | Bin Telluric std check | Max ADU ~ 5.5K                     |         |
| 3000                   | 3"     | 5.44      | B7V |            |                    |           |          | 9ci  | - " -                  |                                    |         |
|                        |        |           |     |            |                    |           |          | Sci  |                        |                                    |         |
|                        |        |           |     |            |                    |           |          | 1ci  |                        |                                    |         |
|                        |        |           |     |            |                    |           |          | 3/4  | Focus Test             | Telescope on W side pier           | 13.5°   |
| All to WORM & PERSONS. |        |           |     |            |                    |           |          |      |                        |                                    |         |

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p4#1 Sun/mon

Emulsion Batches:

Date 1994 July 3/4 Observers [Bn] III / Tn

~~OVERWRITE CC23777 1st exp~~

...CSS. 386 only. 1.52 sec ahead

| Plate No.     | Object                 | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination         | Comparison<br>Type/Filter | Exp.  |
|---------------|------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|---------------------|---------------------------|-------|
| cc23777<br>78 | Comp / Stellar HURTMAN |              |                     |                         |                       | 00 18W            | +44°                |                           | 60/60 |
| 79            | Bias (4)               |              |                     | 20:45                   |                       |                   |                     |                           |       |
| 80            | Comp                   |              |                     | 20:50:44                |                       |                   |                     | FeAr<br>clear             | 60    |
| 81            | HD 87901               | 10 03 03     | +12 27 22           | 20:55:14                |                       | 5:18W             | Air Mass<br>3.660   |                           | 49    |
| 82            | — " —                  | 10 03 03     | +12 27 22           | 20:57:10                |                       | 5:20W             | 3.746               |                           | 54    |
| 83            | Comp                   |              |                     | 20:59:37                |                       |                   |                     | FeAr<br>clear             | 60    |
| 84            | Comp                   |              |                     | 21:07:13                |                       |                   |                     | FeAr<br>clear             | 60    |
| 85            | HD 121409              | 13 50 10     | 54 13 13            | 21:10:18                |                       | 1:56W             | Air Mass<br>1.072   |                           | 539   |
| 86            | — " —                  | 13 50 10     | 54 13 13            | 21:20:02                |                       | 2:06W             |                     |                           | 576   |
| 87            | Comp                   |              |                     | 21:31:47                |                       |                   |                     | FeAr<br>clear             | 60    |
| 88            | Bias (4)               |              |                     | 21:33                   |                       |                   |                     |                           |       |
| 89            | Comp                   |              |                     | 21:38:08                |                       |                   |                     | FeAr<br>clear             | 60    |
| 90            | HD 124224              | 14 07 12     | +02 53 00           | 21 40 34                |                       | 02 04 W           | <del>Air Mass</del> |                           | 294   |
| 91            | HD 124224              | 14 07 12     | +02 53 00           | 21 46 43                |                       | 2:11 W            | Air Mass<br>1.573   |                           | 364   |
| 92            | HD 124224              | 14 07 12     | +02 53 00           | 21 53 43                |                       | 2:19W             | 1.608               |                           | 426   |



Spectr. Temp.  $-100^{\circ}\text{C}$

Dome Temp./Hum.  $18.8^{\circ}\text{C} \dots 57.2\% \text{H}$

Transparency Conditions  $\dots \text{v. s. / hazy} \dots$

Focus  $\dots 6.77 \dots$

Top-up from scratch  
Telescope East Side again this lot  
CCD FMT 480 050 1024 4 1

Spectr. Temp.  $\dots 9.0 \text{ C. h. s.} \dots$

Dome Temp./Hum.  $\dots \text{C. LAMBDA} \dots$

| Exp. Mtr. | Seeing | Fig.<br>√ Mag. | Sp.  | Inst.       | Grating/<br>Tilt   | Slit      | Emulsion | P.H. | Program                    | Remarks                         | Quality |
|-----------|--------|----------------|------|-------------|--------------------|-----------|----------|------|----------------------------|---------------------------------|---------|
|           |        |                |      | CASS<br>CCD | 1800 l/m<br>G=6065 | 300 $\mu$ | 66047    | 3/4  | Focus Test                 |                                 |         |
|           |        |                |      |             |                    |           |          | 1ci  |                            |                                 |         |
|           |        | 1.36           | B7V  |             |                    |           |          | 5ci  |                            | Telescope on E. side<br>of pier |         |
| 2290      |        |                |      |             |                    |           |          | 6ci  | Telluric<br>standard       | Max 8.1 K ADU                   | 18.1°   |
| 2524      |        | 1.36           | B7V  |             |                    |           |          | 7ci  | — " —                      |                                 |         |
|           |        |                |      |             |                    |           |          | 8ci  |                            |                                 |         |
|           |        |                |      |             |                    |           |          | 9ci  |                            |                                 |         |
| 2001      |        | 5.70           | AOV  | ~260:1      | S/N                |           |          | 10ci | Bln Telluric<br>Std Search | Max 10.0 K ADU                  |         |
| 2000      |        | 5.70           | AOV  |             |                    |           |          | 11ci | — " —                      |                                 |         |
|           |        |                |      |             |                    |           |          | 12ci |                            |                                 |         |
|           |        |                |      |             |                    |           |          | 1ci  |                            |                                 |         |
|           |        |                |      |             |                    |           |          | 13ci |                            |                                 | 18.0°   |
| 7000      | 2"-3"  | 5.0            | Aps1 |             |                    |           |          | 14ci | Bln He*                    | MAX 7.1 K ADU                   |         |
| 4890      |        | 5.0            | Aps1 |             |                    |           |          | 15ci | — " —                      | Max 7.5 K ADU                   | 17.4°   |
| 6000      |        | 5.0            | Aps1 | ~315:1      | S/N                |           |          | 16ci | — " —                      | Max 12.5 K ADU                  |         |

Date 1994. July 3. 1.4 Observers ... [B.L.N.] III. / T.N. ...

Sun / Mon

| Plate No. | Object     | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination      | Companion     |      |
|-----------|------------|--------------|---------------------|-------------------------|-----------------------|-------------------|------------------|---------------|------|
|           |            |              |                     |                         |                       |                   |                  | Type/Filter   | Exp. |
| CC23793   | Comp       |              |                     | 22:02:51                |                       |                   |                  | Fear<br>Clear | 60   |
| 94        | HD 124 224 | 14 07 12     | +02 53 00           | 22:06:15                |                       | 2:31W             | Airmass<br>1.671 |               | 433  |
| 95        | HD 124 224 | 14 07 12     | +02 53 00           | 22:14:54                |                       | 2:41W             | 1.725            |               | 476  |
| 96        | HD 124 224 | 14 07 12     | +02 53 00           | 22:23:58                |                       | 2:50W             | 1.786            |               | 498  |
| 97        | Comp       |              |                     | 22:33:45                |                       |                   |                  | Fear<br>Clear | 60   |
| 98        | Bias (4)   |              |                     | 22:35                   |                       |                   |                  |               |      |
| 99        | HD 124 224 | 14 07 12     | +02 53 00           | 22:36:59                |                       | 3:09W             | 1.890            |               | 559  |
| 800       | HD 124 224 | 14 07 12     | +02 53 00           | 22:47:26                |                       | 3:16W             | 1.990            |               | 618  |
| 01        | HD 124 224 | 14 07 12     | +02 53 00           | 22:59:26                |                       | 3:28W             | 2.117            |               | 642  |
| 02        | Comp       |              |                     | 23:11:37                |                       |                   |                  | Fear<br>Clear | 60   |
| 03        | HD 124 224 | 14 07 12     | +02 53 00           | 23:14:03                |                       | 3:42W             | 2.294            |               | 623  |
| 04        | HD 124 224 | 14 07 12     | +02 53 00           | 23:26:03                |                       | 3:56W             | 2.496            |               | 698  |
| 05        | Comp       |              |                     | 23:40:44                |                       |                   |                  | Fear<br>Clear | 60   |
| 06        | Bias (4)   |              |                     | 23:42                   |                       |                   |                  |               |      |
| 07        | HD 124 224 | 14 07 12     | +02 53 00           | 23:44:00                |                       | 4:15W             | 2.885            |               | 796  |

Spectr. Temp. .... Dome Temp./Hum. 17.5°/53.9% Transparency Conditions .....

Focus .... 6.77 .....

Spectr. Temp. 90.0 Gain ... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Pgr. Mag. | Sp.  | Inst.       | Grating/Tilt       | Slit      | Emulsion | P.H. | Program  | Remarks                               | Quality                 |  |
|-----------|--------|-----------|--|-------------|--------------------|-----------|----------|------|----------|---------------------------------------|-------------------------|--|
|           |        |           |  | Cass<br>CCD | 1800/1mm<br>h=6065 | 300<br>um | 6604A    | 17c  |          | Telescope still on<br>E. side of pier |                         |  |
| 6000      | 5.0    | Aps       | ~330:  | 1           | S/N                |           |          | 18c  | B1n He * | 13.5 K ADU Max                        |                         |  |
| 6000      | 5.0    | Aps       | ~325:  | 1           | S/N                |           |          | 19c  | — " —    | 11.3 K ADU Max                        | 17.1°                   |  |
| 6200      | 5.0    | Aps       | ~345:  | 1           | S/N                |           |          | 20c  | — " —    | 10.5 K ADU Max                        | 17.0°                   |  |
|           |        |           |  |             |                    |           |          | 26c  |          |                                       |                         |  |
|           |        |           |  |             |                    |           |          | 1c   |          |                                       |                         |  |
| 6610      | 5.0    | Aps       | ~360:  | 1           | S/N                |           |          | 22c  | B1n He * | 12.4 K ADU Max                        |                         |  |
| 6600      | 5.0    | Aps       | ~370:  | 1           | S/N                |           |          | 23c  | — " —    | 13.4 K ADU Max                        |                         |  |
| 6610      | 5.0    | Aps       | ~360:  | 1           | S/N                |           |          | 24c  | — " —    | 12.7 K ADU Max                        | 16.8°                   |  |
|           |        |           |  |             |                    |           |          | 25c  |          |                                       |                         |  |
| 6610      | 5.0    | Aps       | ~380:  | 1           | S/N                |           |          | 26c  | B1n He * | 13.3 K ADU Max                        | 16.7°                   |  |
| 6635      | 5.0    | Aps       | Notes: exposure meter response<br>changed from previous<br>exposures |             |                    |           |          |      | 27c      | — " —                                 | col 24: parts saturated |  |
|           |        |           |  |             |                    |           |          | 28c  |          |                                       |                         |  |
|           |        |           |  |             |                    |           |          | 1c   |          |                                       |                         |  |
| 6000      | 5.0    | Aps       | ~390:  | 1           | S/N                |           |          | 29c  | B1n He * | 13.1 K ADU Max                        | 16.6°                   |  |



Date ... 1994 ... July 3/4 Observers ... [Bln] III. / Tn. ....

Sun/Mon

| Plate No.   | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination      | Comparison     |      |
|-------------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|------------------|----------------|------|
|             |           |              |                     |                         |                       |                   |                  | Type/Filter    | Exp. |
| c23808      | HD 124224 | 14 07 12     | +02 53 00           | 23:58:53                |                       | 4:31W             | A: Mars<br>3.349 |                | 903  |
| 9           | Comp      |              |                     | 00:15:23                |                       |                   |                  | Fe Ar<br>clear | 60   |
| 10          | HD 124224 | 14 07 12     | +02 53 00           | 00:17:29                |                       | 4:54W             | 4.270            |                | 1096 |
| 11          | Comp      |              |                     | 00:36:44                |                       |                   |                  | Fe Ar<br>clear | 60   |
| 12          | Bias(4)   |              |                     | 00:38:07                |                       |                   |                  |                |      |
| 13          | Comp      |              |                     | 00:48:01                |                       |                   |                  | Fe Ar<br>clear | 60   |
| 14          | HD 187235 | 19 43 55     | 38 09 36            | 00:51:19                |                       | 0:19 E            | 1.006            |                | 393  |
| 15          | HD 187235 | 19 43 55     | 38 09 36            | 00:58:28                |                       | 0:10 E            |                  |                | 430  |
| 16          | Comp      |              |                     | 01:06:55                |                       |                   |                  | Fe Ar<br>clear | 60   |
| CG402<br>94 | HD 187120 | 19 43 12     | +45 29              |                         |                       |                   |                  | 4 x            | 67ms |
| 97          |           |              |                     |                         |                       |                   |                  | 2 x            | B3ms |
| 98          | 4         | "            | ?                   |                         |                       |                   |                  |                |      |
| 99          |           |              |                     |                         |                       |                   |                  | Fe Ar<br>clear | 60   |
| 17          | Comp      |              |                     | 01:27:18                |                       |                   |                  |                |      |
| 18          | HD 187961 | 19 47 30     | +10 05 42           | 01:29:53                |                       | 0:28W             | 1.207            |                | 1219 |
| 19          | HD 187961 | 19 47 30     | +10 05 42           | 01:50:50                |                       | 0:50              |                  |                | 1259 |
| 20          | Comp      |              |                     | 02:13:19                |                       |                   |                  | Fe Ar<br>clear | 60   |



Spectr. Temp. .... Dome Temp./Hum. ... 16.6°/56.5% Transparency Conditions ... Sl. hazy .....

Focus ..... 6.77 .....

Spectr. Temp. ... 6.6 mm. 9.2. Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Mag.<br>√ | Sp.    | Inst.       | Grating/<br>Tilt     | Slit      | Emulsion<br>element | P.H. | Program                     | Remarks                              | Quality |
|-----------|--------|-----------|--------|-------------|----------------------|-----------|---------------------|------|-----------------------------|--------------------------------------|---------|
| 5800      |        | 5.0       | ApSi   | Cass<br>CCD | 1800d/1mm<br>G=60005 | 300<br>um | 6604A <sup>o</sup>  | 14ci | Bl n He *                   | Telescope still on<br>E side of pier |         |
|           |        |           |        |             |                      |           |                     | 17ci |                             |                                      | 16.4°   |
| 5000      |        | 5.0       | ApSi   |             |                      |           |                     | 19ci | Bl n He *                   |                                      |         |
|           |        |           |        |             |                      |           |                     | 21ci |                             |                                      | 16.2°   |
|           |        |           |        |             |                      |           |                     | 1ci  |                             |                                      |         |
|           |        |           |        |             |                      |           |                     | 25ci |                             | CCDT = -100.4°                       | 16.3°   |
| 3600      |        | 5.77      | B8Vn   | ~ 260:1 S/W |                      |           |                     | 26ci | Telluric<br>Standard        | 8.1 K ADU max                        |         |
| 4000      | 1.5°   | 5.77      | B8Vn   |             |                      |           |                     | 26ci | — " —                       | 10.3 K ADU Max                       |         |
|           |        |           |        |             |                      |           |                     | 28ci |                             |                                      |         |
|           | 1.2'   | 7.52      | K0 III |             |                      |           |                     |      | Seeing Test                 | No fons tonight                      |         |
|           |        |           |        |             |                      |           |                     |      | " "                         | Telescope still East Side            |         |
|           |        |           |        |             |                      |           |                     | 5ci  |                             |                                      | 16.2°   |
| 4000      | 2"3"   | 6.54      | B7V    | ~ 275:1 S/W |                      |           |                     | 6ci  | Telluric Std<br>Search Bl n | Max ADU 7.1 K                        |         |
| 4200      |        | 6.54      | B7V    |             |                      |           |                     | 7ci  | — " —                       | ↑ Hα shows emission                  | 15.5°   |
|           |        |           |        |             |                      |           |                     | 8ci  |                             |                                      |         |

Date .. 1994 .. July 314 Observers .. [Bln] III / Tn .....

Sun Mon

Emulsion Batches:

.....  
.....  
.....

| Plate No. | Object                | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination      | Comparison<br>Type/Filter        | Exp. |
|-----------|-----------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|------------------|----------------------------------|------|
| a 238 21  | Bias (4)              |              |                     | 02:15                   |                       |                   |                  |                                  |      |
| 22        | Comp                  |              |                     | 02:17:45                |                       |                   |                  | Fe Ar<br>clear                   | 60   |
| 23        | HD 196504             | 20 32 49     | + 26 6 50           | 02:20:38                |                       | 0:21W             | Airmass<br>1.051 |                                  | 394  |
| 24        | HD 196504             | 20 32 49     | + 26 6 50           | 02:28:04                |                       |                   |                  |                                  | 435  |
| 25        | Comp                  |              |                     | 02:36:18                |                       |                   |                  | Fe Ar<br>clear                   | 60   |
| 26        | Comp                  |              |                     | 02:41:41                |                       |                   |                  | Fe Ar<br>clear                   | 60   |
| 27        | HD 207636             | 21 45 15     | 69 41 13            | 02:43:45                |                       | 0:15W             | Airmass<br>1.115 |                                  | 1014 |
| 28        | HD 207636             | 21 45 15     | 69 41 13            | 03:01:38                |                       |                   |                  |                                  | 1024 |
| 29        | Comp                  |              |                     | 03:19:27                |                       |                   |                  | Fe Ar<br>clear                   | 60   |
| 30        | Bias (4)              |              |                     | 03:20                   |                       |                   |                  |                                  |      |
| 31        | Comp                  |              |                     | 03:23:07                |                       |                   |                  | Fe Ar<br>clear                   | 60   |
| 32        | HD 211211             | 22 10 32     | 42 27 28            | 03:25:14                |                       | 0:10 E            | Airmass<br>1.000 |                                  | 457  |
| 33        | HD 211211             | 22 10 32     | 42 27 28            | 03:33:24                |                       |                   |                  |                                  | 484  |
| 34        | Comp                  |              |                     | 03:42:26                |                       |                   |                  | Fe Ar<br>clear                   | 60   |
| 35-55     | FLATX 21 (7 flat bat) |              |                     |                         |                       | 3:30W             | + 3:30           | Fe Ar<br>clear<br>tung<br>ap '14 | 7    |











CCD Spectr. Temp.  $-100^{\circ}\text{C}$ .....

Dome Temp./Hum.  $+20.4^{\circ}\text{C}$   $57.8\%$

Transparency Conditions  $\dots$  Part. Cloudy.....

Focus  $\dots$  6.7A.....

FANS ON. SOUTH TURNED OFF @ 2100

Spectr. Temp.  $\text{cgain} = 90$ .....

Dome Temp./Hum.  $\dots$  CLIMB/DL

480 0 50 1024 4 1 ccd fmb.

| Exp. Mtr.                      | Seeing | Mag.        | Sp.  | Inst.        | Grating/Tilt         | Slit                 | Emulsion | P.H. | Program     | Remarks                            | Quality |
|--------------------------------|--------|-------------|------|--------------|----------------------|----------------------|----------|------|-------------|------------------------------------|---------|
| Temp = $+20.2^{\circ}\text{C}$ |        |             |      | CHSS CCD     | 1800/dmm<br>G = 5910 | 300um<br>Full length | 6400P    | 3/4c | focus test  |                                    |         |
|                                |        |             |      |              |                      |                      |          | 1    |             |                                    |         |
|                                |        |             |      |              |                      |                      |          | 5    |             |                                    |         |
| 40*                            | 6.19   | F6I<br>-IIb |      | 4700 Max ADU |                      |                      |          | 6    | Rm Pgm      | * Exposure meter reading very slow |         |
|                                |        |             |      |              |                      |                      |          | 7    |             |                                    |         |
|                                | 1-2"   | 6.66        | dG8  |              |                      |                      |          |      | Seeing Test | Dome W, light E breeze.            |         |
|                                | "      | "           | "    |              |                      |                      |          |      | Seeing Test |                                    |         |
|                                |        |             |      |              |                      |                      |          | 8    |             |                                    |         |
| 1000                           | 6.66   | dG8         |      | 5480 Max ADU |                      |                      |          | 9    | Std. Vel.   |                                    |         |
|                                |        |             |      |              |                      |                      |          | 10   |             |                                    |         |
|                                |        |             |      |              |                      |                      |          | 1    |             |                                    |         |
|                                | 2i     |             |      |              |                      |                      |          | 11   |             |                                    |         |
| 1200                           | 2-3"   | 6.15        | G0Ib | 6700 Max ADU |                      |                      |          | 12c  | Rm Pgm      |                                    |         |
|                                |        |             |      |              |                      |                      |          | 13c  |             |                                    |         |
|                                |        |             |      |              |                      |                      |          | 13c  |             |                                    |         |





Spectr. Temp. .... Dome Temp./Hum.  $+19.8^{\circ}\text{C}$   $56\% \text{RH}$  Transparency Conditions  $\dots$  *Hazy*  $\dots$  + Clouds  $\dots$  128

Focus  $\dots$   $6.74$   $\dots$

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr.                | Seeing | $\frac{P.H.}{\sqrt{\text{Mag.}}}$ | Sp.   | Inst.        | Grating/<br>Tilt  | Slit      | Emulsion | P.H. | Program           | Remarks           | Quality               |
|--------------------------|--------|-----------------------------------|-------|--------------|-------------------|-----------|----------|------|-------------------|-------------------|-----------------------|
| 10-70                    |        | 6.01                              | GO V  | -CASS<br>CCD | 1800h/m<br>G=5910 | 300 $\mu$ | 6400A    | 17c1 | Std Vel<br>Rm pgm | Max ADU 5480      |                       |
|                          |        |                                   |       |              |                   |           |          | 15   |                   |                   |                       |
|                          |        |                                   |       |              |                   |           |          | 16   |                   | Clouds rolling in |                       |
| <del>10-70</del><br>1340 |        | 5.75                              | GO Ib |              |                   |           |          | 17   | Rm pgm            | Max ADU = 7400    |                       |
|                          |        |                                   |       |              |                   |           |          | 18   |                   |                   |                       |
|                          |        |                                   |       |              |                   |           |          | 19   |                   |                   |                       |
|                          |        |                                   |       |              |                   |           |          | 20   | Rm pgm            |                   |                       |
| 271                      |        | 7.48                              | GO Ib |              |                   |           |          | 21   |                   |                   |                       |
|                          |        |                                   |       |              |                   |           |          | 22   |                   |                   |                       |
| Not *<br>functioning     | 1.2"   | 5.8<br>-5.9                       | F2    |              |                   |           |          | 23   | Rm pgm            | MAX ADU = 2900    | VERY hazy < 200/1 S/N |
|                          |        |                                   |       |              |                   |           |          | 24:  |                   |                   |                       |
| 870*                     |        | "                                 | "     |              |                   |           |          | 23   | Rm pgm            | Max ADU = 4920    |                       |



Spectr. Temp. .... Dome Temp./Hum.  $+18.5^{\circ}\text{C}/65.6\%$  Transparency Conditions *Thick Purple Haze* <sup>130</sup>  
 Focus ..... *6.74* .....  
 Spectr. Temp. .... Dome Temp./Hum. ....  
*All Around.*

| Exp. Mtr.                         | Seeing | Pig. Mag. | Sp.         | Inst.    | Grating/Tilt       | Slit              | Emulsion          | P.H. | Program    | Remarks               | Quality |
|-----------------------------------|--------|-----------|-------------|----------|--------------------|-------------------|-------------------|------|------------|-----------------------|---------|
|                                   |        |           |             | Cass CCD | 1800 $\mu\text{m}$ | 300 $\mu\text{m}$ | 6400 $\text{\AA}$ | 25   |            |                       |         |
| 200                               | 8.4    | GOID      |             |          |                    |                   |                   | 26   | Rm pgm     |                       |         |
|                                   |        |           |             |          |                    |                   |                   | 27   |            |                       |         |
|                                   |        |           |             |          |                    |                   |                   | 1    |            |                       |         |
|                                   |        |           |             |          |                    |                   |                   | 28   |            |                       |         |
| 1200                              | 2"     | 6.19      | F6I<br>-IIb |          |                    |                   |                   | 29   | Rm pgm     | 2nd exposure of night |         |
|                                   |        |           |             |          |                    |                   |                   | 30   |            |                       |         |
|                                   |        |           |             |          |                    |                   |                   | 31   |            | High Humidity +       |         |
|                                   |        |           |             |          |                    |                   |                   | 3/4  | Focus Test | very hazy and cloudy. |         |
|                                   |        |           |             |          |                    |                   |                   | 1    |            | = close.              |         |
| All to WORM $\frac{1}{2}$ Perseus |        |           |             |          |                    |                   |                   |      |            |                       |         |

Date 1994 July 5/16 Observers [Bln.] III / H. W. ...  
Tue/Wed

Emulsion Batches:

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.....

| Plate No.  | Object                    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination       | Comparison<br>Type/Filter | Exp.  |
|------------|---------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------------|---------------------------|-------|
| cc 23907/B | Comp /<br>Skeller Hartman |              |                     |                         |                       |                   |                   | FeAr<br>Clear             | 60/60 |
| 09         | Bias (4)                  |              |                     | 21:03                   |                       |                   |                   |                           |       |
| 10         | Comp                      |              |                     | 21 16 58                |                       |                   |                   | FeAr<br>Clear             | 60    |
| 11         | HD87901                   | 10 03 03     | +12 27 22           | 21 19 27                |                       | 5:51 W            |                   |                           | 128   |
| 12         | HD87901                   | 10 03 03     | +12 27 22           | 21 22 12                |                       | 5:53 W            |                   |                           | 105   |
| 13         | Comp                      |              |                     | 21:25:11                |                       |                   |                   | FeAr<br>Clear             | 60    |
| 14         | Comp                      |              |                     | 21 34 10                |                       |                   |                   | FeAr<br>Clear             | 60    |
| 15         | HD93521                   | 10 42 42     | +38 06 00           | 21 36 35                |                       | 5:39 W            | Air mass<br>2.104 |                           | 757   |
| 16         | Comp                      |              |                     | 21:51:36                |                       |                   |                   | FeAr<br>Clear             | 60    |
| 17         | Comp                      |              |                     | 22:10:20                |                       |                   |                   | FeAr<br>Clear             | 60    |
| 18         | HD159139                  | 17 27 54     | 28 28 47            | 22:12:52                |                       | 0:28 E            |                   |                           | 669   |
| 19         | HD159139                  | 17 27 54     | 28 28 47            | 22:24:19                |                       | 0:21 E            | Air mass<br>1.040 |                           | 425   |
| 20         | Comp                      |              |                     | 22:32:33                |                       |                   |                   | FeAr<br>Clear             | 60    |
| 21         | Bias (4)                  |              |                     | 22:34                   |                       |                   |                   |                           |       |
| 22         | Comp                      |              |                     | 22:40:47                |                       |                   |                   | FeAr<br>Clear             | 60    |



CCD  
 Spectr. Temp. .... -100.0° ... Dome Temp./Hum. 23.8°C / 76.4% Transparency Conditions ... Partially Cloudy  
 Focus ..... 6.71 .....  
 Spectr. Temp. ... Again ..... Dome Temp./Hum. ....  
 CCDPMT 490 0 50 1024 4 1

| Exp. Mtr.  | Seeing      | Filter<br>V Mag. | Sp.   | Inst.          | Grating/<br>Tilt      | Slit      | Emulsion<br>element | P.H. | Program                    | Remarks                                      | Quality |
|--|-------------|------------------|-------|----------------|-----------------------|-----------|---------------------|------|----------------------------|--|---------|
| * Counts at 2 per second with exposure meter shutter closed. |             |                  |       | Cass<br>CCD    | 1800 Å/mm<br>λ = 6065 | 300<br>µm | 6604A               | 3/4  | Focus<br>TEST              | T = 23.8, foc = 6.71                         |         |
|  |             |                  |       |                |                       |           |                     | 1    |                            |  |         |
|  |             |                  |       |                |                       |           |                     | 5    |                            | Telescope Reversed Now                       |         |
| 2025   | 1.36        |                  | B7V   |                |                       |           |                     | 6    | Telluric                   | Air Mass End = 5.86                          |         |
| 2200   | 1.36        |                  | B7V   | max A Qu 11.3K |                       |           |                     | 7    | Telluric                   | 6.707  |         |
|  |             |                  |       |                |                       |           |                     | 8    |                            |  |         |
|  |             |                  |       |                |                       |           |                     | 9    |                            |  |         |
| 1245   | B =<br>6.76 |                  | 09.5V | ~ 110:1 S/W    |                       |           |                     | 10   | Bin 0* pgm                 | clouded in                                   |         |
|  |             |                  |       |                |                       |           |                     | 11   |                            | from N/W                                     |         |
|  |             |                  |       |                |                       |           |                     | 12   |                            |  |         |
| 1706   | 5.62        |                  | A1V   | ~ 160:1 S/W    |                       |           |                     | 13ci | Bin Telluric<br>Std Search | Through many clouds<br>Air Mass End = 1.0432 |         |
| 2005   | 5.62        |                  | A1V   | ~ 200:1 S/W    |                       |           |                     | 13ci | — 11 —                     |  |         |
|  |             |                  |       |                |                       |           |                     | 14ci |                            |  |         |
|  |             |                  |       |                |                       |           |                     | 1ci  |                            |  |         |
|  |             |                  |       |                |                       |           |                     | 15ci |                            |  |         |

Date 1994 July 5/6 Observers [Blm] J. H. W. ...

Tue/Wed

| Plate No. | Object         | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T.            | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination       | Comparison                      |          |
|-----------|----------------|--------------|---------------------|------------------------------------|-----------------------|-------------------|-------------------|---------------------------------|----------|
|           |                |              |                     |                                    |                       |                   |                   | Type/Filter                     | Exp.     |
| 23        | HD 160181      | 173324       | 242210              | 22:43:20                           |                       | 0:06 E            |                   |                                 | 53A      |
| 24        | Comp           |              |                     | 22:54: <del>00</del> <sup>29</sup> |                       |                   |                   | FeAr<br>Clear                   | 60       |
| 25        | Bias (4)       |              |                     | 22:55                              |                       |                   |                   |                                 |          |
| 26        | -46 FLATS x 21 |              |                     |                                    |                       | 5:30 W            | +30               | Tung<br>ap 1/4<br>FeAr<br>clear | 7.<br>60 |
| 47        | Comp           |              |                     | 23:58:07                           |                       |                   |                   |                                 |          |
| 48        | HD 167965      | 181232       | 420730              | 00:01:14                           |                       | 0:31 W            | Air Mass<br>1.005 |                                 | 441      |
| 49        | HD 167965      | 181232       | 420730              | 00:09:20                           |                       | 0:43 W            | 1.0098            |                                 | 622      |
| 50        | Comp           |              |                     | 00:23:28                           |                       |                   |                   | FeAr<br>Clear                   | 60       |
| 51        | Bias (4)       |              |                     | 00:24                              |                       |                   |                   |                                 |          |
| 52/3      | Comp/Stellar   | Hartman      | Mask Position       |                                    |                       | 0:50 W            | +42°              | FeAr<br>Clear                   | 60/60    |

Spectr. Temp. .... Dome Temp./Hum. ... 22:50/84.5% Transparency Conditions ... Partially Cloudy

Focus ..... 6.71 ..... Notes: exposure meter at ambient

Spectr. Temp. ... c gain ..... Dome Temp./Hum. .... dome temp.

| Exp. Mtr. | Seeing | Pig. Mag. | Sp.  | Inst.       | Grating/Tilt       | Slit      | Emulsion | P.H.                     | Program                    | Remarks   | Quality |
|-----------|--------|-----------|------|-------------|--------------------|-----------|----------|--------------------------|----------------------------|---|---------|
| 1363      |        | 562       | A2Vn | Cass ccd    | 1300x1mm<br>h=6065 | 300<br>um | 6604A    | 17P<br>170ci<br>17B<br>1 | Bln Telluric<br>Std Search | Telescope still<br>on E. side of pier<br>→ Clouded in totally<br>at end, Air Mass End=1.0615<br>SNR ~ 100 |         |
|           |        |           |      |             |                    |           |          |                          |                            | NOTE: ADU values range<br>7770-10258  |         |
| 2810      |        | 559       | B7IV | ~ 205:1 S/W |                    |           |          | 18ci<br>19ci<br>20ci     | Telluric<br>Standard       | Max ADU 4.3K  | 21.8°   |
| 2300      |        | 554       | B7IV |             |                    |           |          | 21ci<br>16<br>1ci        | "                          | cloud took over   |         |
|           |        |           |      |             |                    |           |          | 3/4                      | Focus Test                 | Telescope still<br>on E. side of pier   |         |







137 #1

Sat/Sun

Date 1994 JULY 9/10

Observers [BLN]/WDE/HLW/SMT

Emulsion Batches:  $\downarrow$  Note thermostat  
 ..... was not turned down  
 ..... all observations are  
 ..... at about  $-113^{\circ}\text{C}$

| Plate No.  | Object                  | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison       |                |
|------------|-------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|------------------|----------------|
|            |                         |              |                     |                         |                       |                   |             | Type/Filter      | Exp.           |
| 0023971/72 | stellar/comp<br>Hartman |              |                     |                         |                       |                   |             | FeAr<br>clear    | 20/30          |
| 973        | Bias x 4                |              |                     |                         |                       |                   |             |                  |                |
| 974        | comp                    |              |                     |                         |                       |                   |             | FeAr<br>clear    | 60             |
| 975        | HD 148283               | 16 21 50     | 37° 37' 18"         | 02:41:44                |                       | 5:24 W            | +37°        |                  | 789            |
| 976        | HD 48283                | "            | "                   | 02:55:05                |                       | 5:37 W            |             |                  | 759            |
| 977        | Comp                    |              |                     |                         |                       |                   |             | FeAr<br>clear    | 60             |
| 978        | comp                    |              |                     |                         |                       |                   |             | FeAr<br>clear    | 60             |
| 979        | HD 158352               | 17 23 44     | +00 24 42           | 03:18:28                |                       | 4:57 W            | 0°          | 799 <sup>6</sup> | <del>799</del> |
| 980        | Comp                    |              |                     |                         |                       |                   |             | FeAr<br>clear    | 60             |
| 981        | Bias x 4                |              |                     |                         |                       |                   |             |                  |                |
| 982        | Comp                    |              |                     |                         |                       |                   |             | FeAr<br>clear    | 60s            |
| 983        | HD 192518               | 20 10 08     | +28 23 30           | 03 40 03                |                       | 2:31 W            | +29°        |                  | 600            |
| 984        | comp                    |              |                     |                         |                       |                   |             | FeAr<br>clear    | 60s            |
| 985        | Bias x 4                |              |                     |                         |                       |                   |             |                  |                |
| 986-995    | FLAT x 10               |              |                     |                         |                       | 2:37 W            | +28°        | Tung<br>clear    | 135            |

All to WORMes &amp; Perseus

CCD \* -103 °C  
 Spectr. Temp. ....  
 Focus ..... 6.77  
 Spectr. Temp. c.g.a.h. = 90

Dome Temp./Hum. .... 19.6 °C / 75.0 %  
 Transparency Conditions ... clear.  
 Dome fans off,  
 Dome Temp./Hum. .... 18.8 °C / 80.7 %  
 lambda cache

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.       | Grating/Tilt      | Slit  | Emulsion | P.H. | Program      | NOTE: Remarks  | Quality |
|-----------|--------|-----------|-----|-------------|-------------------|-------|----------|------|--------------|--|---------|
|           |        |           |     | CASS<br>CCD | 1800/mm<br>G=4565 | 306mm | 4490A    | 3/4  | focus<br>tot | Slit is not<br>aligned + to<br>dispersion ...  |         |
|           |        |           |     |             |                   |       |          | 1    | BSum4        | attempting to fix  |         |
|           |        |           |     |             |                   |       |          | 5    |              | by slight adjustment ...   |         |
| 1900      | 5.52   | ASV       |     |             | ~ 180             | SIN   |          | 6    | Ashell *     | Poor fix - dispersion<br>axis is ~ 80° wrt<br>slit - <u>will require</u>                         |         |
| 1530      | "      | "         |     |             |                   |       |          | 7    | "            | <u>processing to fix.</u>  |         |
|           |        |           |     |             |                   |       |          | 8    |              |  |         |
|           |        |           |     |             |                   |       |          | 9    |              |  |         |
| 467       | 5.44   | A8V       |     |             | ~ 50<br>sh:th S/N |       |          | 10   | Ashell *     | 306 mm slit.   |         |
|           |        |           |     |             |                   |       |          | 11   |              |  |         |
|           |        |           |     |             |                   |       |          | 1    | BSum4        | NOTE: Grating setting<br>changed after focus<br>test due to spectrograph<br>controller failure - |         |
|           |        |           |     |             |                   |       |          | 12   |              |  |         |
| 1414      | 5.18   | A7IV      |     |             | ~ 190             | SIN   |          | 13   | Ashell *     | should cause no<br>problem.  |         |
|           |        |           |     |             |                   |       |          | 14   |              |  |         |
|           |        |           |     |             |                   |       |          | 1    | BSum4        |  |         |
|           |        |           |     |             |                   |       |          | 15   |              |  |         |



Date 94 July 6 11... Observers [Bin] III... / H.W. / Smt

| Plate No.   | Object                      | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | <del>Declination</del><br>Arc Max | Comparison<br>Type/Filter | Exp. |
|-------------|-----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-----------------------------------|---------------------------|------|
| CC 23996/97 | stellar/comp<br>Hertzsprung |              |                     |                         |                       |                   |                                   | FeAr<br>clear             | 60   |
| 98          | Bias (4)                    |              |                     | 20:45                   |                       |                   |                                   |                           |      |
| 99          | Comp                        |              |                     | 20:59:46                |                       |                   |                                   | FeAr<br>clear             | 60   |
| 24000       | HD 87901                    | 10 03 03     | 12 27 22            | 21:02:27                |                       | 5:52 W            | AV. Mass<br>5.956                 |                           | 33   |
| 061         | HD 87901                    | 10 03 03     | 12 27 22            | 21:04:15                |                       | 5:54 W            | 6.230                             |                           | 52   |
| 2           | Comparison                  |              |                     | 21:06:19                |                       |                   |                                   | FeAr<br>Clear             | 60   |
| 3           | Comp                        |              |                     | 21:12:27                |                       |                   |                                   | "                         | "    |
| 4           | HD 124224                   | 14 07 12     | +02 53 00           | 21:15:18                |                       | 2:06 W            | 1.555                             |                           | 327  |
| 5           | HD 124224                   | 14 07 12     | +02 53 00           | 21:21:39                |                       | 2:18 W            | 1.606                             |                           |      |
| 6           | Comp                        |              |                     | 21:35:36                |                       |                   |                                   | FeAr<br>Clear             | 60   |
| 7           | Bias (4)                    |              |                     | 21:38                   |                       |                   |                                   |                           |      |
| 8           | HD 124224                   | 14 07 12     | 02 53 00            | 21:39:29                |                       | 2:36 W            | 1.701                             |                           | 704  |
| 9           | HD 124224                   | 14 07 12     | 02 53 00            | 21:52:05                |                       | 2:49 W            | 1.781                             |                           | 716  |
| 10          | Comp                        |              |                     | 22:05:41                |                       |                   |                                   | FeAr<br>clear             | 60   |
| 11          | HD 124224                   | 14 07 12     | 02 53 00            | 22:07:57                |                       | 3:5 W             | 1.8956                            |                           | 694  |



ccd Spectr. Temp. ... = 100.0... Dome Temp./Hum. 17.8°/59.9% Transparency Conditions Scattered Clouds on horizon<sup>440</sup>

Focus ..... 6.77 .....

Top-up from scratch Foc On  
N-fun turned of @ 2100  
ccd fnt 480 050 1024 41

Spectr. Temp. again = 99 Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Mag. | Sp.  | Inst.       | Grating/<br>Tilt     | Slit       | Emulsion<br>Clemnd. | PH.<br>Ci. | Program              | Remarks  | Quality |
|-----------|--------|------|------|-------------|----------------------|------------|---------------------|------------|----------------------|--|---------|
|           |        |      |      | ccd<br>cass | 1800 x 1mm<br>h=6065 | 306<br>μm  | 6604A               | 3/4        | Focus<br>TEST        | adjusted but<br>Note: slit not perfectly<br>h to dispersion ( $\frac{\Delta x}{\Delta y} \approx \frac{1.5}{40}$ pixels) |         |
| 3706      |        |      |      |             |                      |            |                     | 1          |                      |  |         |
|           |        |      |      |             |                      |            |                     | 5          |                      | Telescope mEast  |         |
| 2000      |        | 1.36 | BTV  |             |                      |            |                     | 6          | Telluric<br>standard | side of pier   |         |
| 2590      |        | 1.36 | BTV  |             |                      |            |                     | 7          | Telluric<br>standard |  |         |
|           |        |      |      |             |                      |            |                     | 8          |                      |  |         |
|           |        |      |      |             |                      |            |                     | 9          |                      |  |         |
| 2528      |        | 5.0  | ApSi |             |                      | ~250:1 S/N |                     | 10         | Bln He*              |  |         |
| 5180      |        | 5.0  | ApSi |             |                      | ~375:1 S/N |                     | 11         | Bln He*              |  |         |
|           |        |      |      |             |                      |            |                     | 12         |                      |  |         |
|           |        |      |      |             |                      |            |                     | 1          |                      |  |         |
| 5100      |        | 5.0  | ApSi |             |                      | ~370:1 S/N |                     | 13         | Bln He*              | Max ADU 11.5K  | 16.8°   |
| 5000      |        | 5.0  | ApSi |             |                      | ~360:1 S/N |                     | 14         | "                    | Max ADU 12.5K  | 16.7°   |
|           |        |      |      |             |                      |            |                     | 15         |                      |  |         |
| 4800      |        | 5.0  | ApSi |             |                      | ~365:1 S/N |                     | 16         | Bln He*              | Max ADU 12.3K  | 16.5°   |
|           |        |      |      |             |                      |            |                     | 1          |                      |  |         |

147  
PAGE 2 Sun/Mon

Emulsion Batches:

Date 94... July... 10/11. Observers [Bln] ~~PH~~ / Hlw. / Smt

| Plate No.        | Object                       | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | AIR MASS<br>Declination | Comparison<br>Type/Filter | Exp. |
|------------------|------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------------------|---------------------------|------|
| cc24012          | HD 124224                    | 14 07 12     | 02 53 00            | 22: 20: 05              |                       | 3 17 W            | 2.0066                  |                           | 710  |
| 13               | comp                         |              |                     | 22: 32: 59              |                       |                   |                         | FeAr<br>clear             | 60   |
| 14               | HD 124224<br><del>comp</del> | 14 07 12     | 02 53 00            | 22: 35: 32              |                       | 3 33 W            | 2.180                   |                           | 753  |
| 15               | HD 124224                    | "            | "                   | 22: 48: 23              |                       | 3 47 W            | 2.3685                  |                           | 829  |
| 16               | comp                         |              |                     | 23: 03: 29              |                       |                   |                         | FeAr<br>clear             | 60   |
| 17               | bias (4)                     |              |                     |                         |                       |                   |                         |                           |      |
| 18               | HD 124224                    | 14 07 12     | 02 53 00            | 23: 05: 48              |                       | 4 09 W            | 2.7374                  |                           | 1039 |
| 19               | HD 124224                    | "            | "                   | 23: 23: 39              |                       | 4 29 W            | 3.2472                  |                           | 1177 |
| 20               | comp                         |              |                     | 23: 44: 20              |                       |                   |                         | FeAr<br>clear             | 60   |
| 21               | HD 124224                    | 14 07 12     | 02 53 00            | 23: 46: 16              |                       | 4 59 W            | 4.616                   |                           | 1637 |
| 22               | comp                         |              |                     | 00: 14: 43              |                       |                   |                         | FeAr<br>clear             | 60   |
| 23               | bias (4)                     |              |                     | 00: 16:                 |                       |                   |                         |                           |      |
| cg40306<br>-9244 | 4x HD176844                  | 18 57 03     | +40 32 36           |                         |                       |                   |                         |                           | .067 |
| cg40310<br>11    | 2x " "                       | "            | "                   |                         | 0: 46                 |                   |                         |                           | .133 |
| 24               | Comp                         |              |                     | 00: 59: 56              |                       |                   |                         | FeAr<br>clear             | 60   |

CCD Spectr. Temp. .... = 100.0°C. Dome Temp./Hum. 16.4°C / 61.4% Transparency Conditions ... clear ..... 142  
 Focus ..... 6.77 .....  
 Spectr. Temp. ~~90.0~~ = 90.0 ..... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.    | Inst.    | Grating/Tilt         | Slit      | Emulsion | P.H.          | Program     | Remarks                                 | Quality |
|-----------|--------|-----------|--------|----------|----------------------|-----------|----------|---------------|-------------|---|---------|
| 4700      |        | 5.0       | ApSi   | CCD CASS | 1800R/nm<br>G = 6065 | 306<br>μm | 6604 A   | 17            | Bln He*     | ~ 360:1 S/N<br>max ADU 11.2 K           | 16.3°   |
|           |        |           |        |          |                      |           |          | 18            |             | Telescope still<br>on East side of pier |         |
| 4750      |        | 5.0       | ApSi   | ~ 370:   | 1 S/N                |           |          | 19            | Bln He*     | max ADU 12.5 K                          | 16.3°   |
| 4700      |        | 5.0       | ApSi   | ~ 375:   | 1 S/N                |           |          | 20            | Bln He*     | max ADU 13.3 K                          | 16.1°   |
| 3419      |        |           |        |          |                      |           |          | 21            |             |   |         |
|           |        |           |        |          |                      |           |          | 1             |             |   |         |
| 4600      |        | 5.0       | ApSi   | ~ 395:   | 1 S/N                |           |          | 22            | Bln He*     | max ADU 11.5                            | 15.7°   |
| 4500      |        | "         | "      |          |                      |           |          | 23            | "           | max ADU 10 K                            | 15.7°   |
| 3408      |        |           |        |          |                      |           |          | 24            |             |   |         |
| 4500      |        | 5.0       | ApSi   |          |                      |           |          | 25            | Bln He*     | (cloud)                                 | 15.4°   |
|           |        |           |        |          |                      |           |          | 25            |             |   |         |
|           |        |           |        |          |                      |           |          | <del>25</del> |             |   | 15.5°   |
|           |        | 6.65      | M2 III |          |                      |           |          |               | Seeing Test | Telescope back on<br>W side of pier     |         |
|           |        | "         | "      |          |                      |           |          |               | Seeing Test | Dome W, wind med NW                     |         |
|           |        |           |        |          |                      |           |          | 26            |             |   |         |



Date ... 1994 ... JUL: 10/11 Observers ... [B]nJ III / H/w/Smt

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| Plate No. | Object                    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination         | Comparison<br>Type/Filter | Exp. |
|-----------|---------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|---------------------|---------------------------|------|
| α 24025   | HD 187235                 | 19 43 55     | 38 09 36            | 01 02 40                |                       | 0:21              | Air Mass =<br>1.007 |                           | 531  |
| 26        | HD 187235                 | 19 43 55     | 38 09 36            | 01 12 15                |                       | 0:40 W            | 1.0138              |                           | 1069 |
| 27        | Comp                      |              |                     | 01:11:52                |                       |                   |                     | Fe Ar<br>clear            | 60   |
| 28        | Comp                      |              |                     | 01:37:29                |                       |                   |                     | Fe Ar<br>clear            | 60   |
| 29        | HD 187861                 | 19 47 29.5   | 40 05 42            | 01:40:05                |                       | 1:07 W            | Air Mass<br>1.2459  |                           | 1383 |
| 30        | Bias (4)                  |              |                     | 02:02:44                |                       |                   |                     |                           |      |
| 31        | Comp                      |              |                     | 02:05:25                |                       |                   |                     | Fe Ar<br>clear            | 60   |
| 32        | Comp                      |              |                     | 02:10:49                |                       |                   |                     | Fe Ar<br>clear            | 60   |
| 33        | HD 199629                 | 20 53 27     | 40 46 55            | 02:13:20                |                       | 0:16 W            | 1.0027              |                           | 147  |
| 34        | HD 199629                 | 20 53 27     | 40 46 55            | 02:17:39                |                       | 0:22 W            | 1.0038              |                           |      |
| 35        | Comp                      |              |                     | 02:23:22                |                       |                   |                     | Fe Ar<br>clear            | 60   |
| 36        | Comp                      |              |                     | 02:31:12                |                       |                   |                     | Fe Ar<br>clear            | 60   |
| 37        | HD 205314                 | 21 29 25     | 49 32 02            | 02:34:50                |                       | 0:15 W            | 1.0068              |                           | 912  |
| 38        | Comp HD <del>205314</del> |              |                     | 02:52:35                |                       |                   |                     | Fe Ar<br>clear            | 60   |
| 39        | HD 205314                 | 21 29 25     | 49 32 02            | 02:55:15                |                       | 0:57 W            | 1.00557             |                           | 1017 |



Spectr. Temp. ... -100.4 °C Dome Temp./Hum. 15.2°/66.4% Transparency Conditions Clear with passing clouds <sup>144</sup>

Focus ..... 6:7.7 .....

South Fan ON

Spectr. Temp. .. e.gain = 90 Dome Temp./Hum. ....

| Exp. Mtr.       | Seeing | Fig.<br>√ Mag. | Sp.  | Inst.       | Grating/<br>Tilt     | Slit      | Emulsion<br>clear/bd | P.H. | Program                    | Remarks                         | Quality |
|-----------------|--------|----------------|------|-------------|----------------------|-----------|----------------------|------|----------------------------|---------------------------------|---------|
| 1875            |        | 5.77           | B8Vn | Cass<br>CCD | 1800 fl/mm<br>h=6005 | 300<br>um | 6604A                | 27ci | Telluric<br>Standard       | Telescope on W.<br>side of pier |         |
| 3750            |        | 5.77           | B8Vn | ~330        | :1 S/W               |           |                      | 28   | Telluric<br>standard       | Max ADU 9 K                     |         |
|                 |        |                |      |             |                      |           |                      | 29ci |                            |                                 |         |
|                 |        |                |      |             |                      |           |                      | Sci  |                            |                                 | 15.0°   |
| 2000            |        | 6.54           | B7V  |             |                      |           |                      | 6ci  | Bln Telluric<br>Std Search | H-α emission                    | 14.7°   |
|                 |        |                |      |             |                      |           |                      | 7ci  |                            |                                 |         |
| <del>2000</del> |        |                |      |             |                      |           |                      | 8ci  |                            |                                 | 14.6    |
| 3000            |        | 3.94           | A1Vn |             |                      |           |                      | 9ci  | Bln Telluric<br>Std Search | H-α emission                    |         |
| 4600            |        | 3.94           | A1Vn |             |                      |           |                      | 10ci | — 11 —                     | " —                             | 14.5°   |
| 3760            |        |                |      |             |                      |           |                      | 11ci |                            |                                 |         |
| 3719            |        | 5.75           | A0V  |             |                      |           |                      | 12ci | Bln Telluric<br>Std Search |                                 |         |
| 3700            |        |                |      |             |                      |           |                      | 13ci |                            |                                 | 14.4°   |
| 3659            |        |                |      |             |                      |           |                      | 14ci |                            |                                 |         |
| 3700            |        | 5.75           | A0V  |             |                      |           |                      | 15ci | Bln Telluric<br>Std Search |                                 | 14.2    |

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Page #4

Date ... 1994 ... Jul. 10/11 Observers ... [Bin] III / ~~HW~~ / Smt

Emulsion Batches:

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| Plate No.       | Object             | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination <sup>o</sup> | Comparison<br>Type/Filter | Exp.   |
|-----------------|--------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|--------------------------|---------------------------|--------|
| cc 240 40       | Comp               |              |                     | 03:13:41                |                       |                   |                          | Fc Ar<br>clear            | 60     |
| 41              | Bias (4)           |              |                     | 03:18                   |                       |                   |                          |                           |        |
| 42              | Comp               |              |                     | 03:21:59                |                       |                   |                          | Fc Ar<br>clear            | 60     |
| 43              | Nova Cyg 92        | 202743       | 521739              | 03:24:27                |                       | 208 W             | 1.0859                   |                           | 900    |
| 44              | Comp               |              |                     | 03:42:06                |                       |                   |                          | Fc Ar<br>clear            | 60     |
| 45-64           | 20x Flats          |              |                     |                         |                       | 3:30 W            | +3:30°                   | Tung<br>4ap               | 6      |
| 65              | Bias (4)           |              |                     |                         |                       |                   |                          |                           |        |
| 66/67           | Stellar<br>Hartman |              |                     |                         |                       |                   |                          | Fc Ar<br>clear            | 60/60  |
| Jul 11 day work |                    | KK           |                     |                         |                       |                   |                          |                           |        |
| 68              | Comp               |              |                     |                         |                       |                   |                          | Fc Ne<br>Clear            | 1      |
| 69              | Comp               |              |                     |                         |                       |                   |                          | "<br>"                    | "<br>" |





147 Pg #1

Date 1994 JULY 11/12 Observers [BLN] WDE / HLW

Emulsion Batches:

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| Plate No.  | Object                  | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |      |
|------------|-------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|------|
|            |                         |              |                     |                         |                       |                   |             | Type/Filter   | Exp. |
| CC24070/71 | comp/stellar<br>Hartman |              |                     |                         |                       | 0:23W             |             | FeAr<br>clear | 60/6 |
| 072        | BIAS (4)                |              |                     |                         |                       |                   |             |               |      |
| 073        | comp                    |              |                     |                         |                       |                   |             | FeAr<br>clear | 60   |
| 074        | HD 87901                | 10 03 03     | 12 27 22            | 21:00:47                |                       | 5:55W             |             |               | 44   |
| 075        | HD 87901                | "            | "                   | 21:02:14                |                       | 5:56W             |             |               | 51   |
| 076        | comp                    |              |                     |                         |                       |                   |             | FeAr<br>clear | 60   |
| 077        | comp                    |              |                     |                         |                       |                   |             | FeAr<br>clear | 60   |
| 078        | HD 124224               | 14 07 12     | 02 53 00            | 21:12:29                |                       | 2:06W             |             |               | 202  |
| 079        | HD 124224               | "            | "                   | 21:16:28                |                       | 2:10W             |             |               | 199  |
| 080        | HD 124224               | "            | "                   | 21:20:05                |                       | 2:15W             |             |               | 220  |
| 081        | comp                    |              |                     |                         |                       |                   |             | FeAr<br>clear | 60   |
| 082        | HD 124224               | 14 07 12     | 02 53 00            | 21:26:50                |                       |                   |             |               | 225  |
| 083        | HD 124224               | "            | "                   | 21:30:52                |                       |                   |             |               | 238  |
| 084        | HD 124224               | "            | "                   | 21:35:07                |                       | 2:29W             |             |               | 259  |
| 085        | comp                    |              |                     |                         |                       | 2:34W             |             | FeAr<br>clear | 60   |



CCD  
Spectr. Temp. -100°C  
Focus 6.74  
Spectr. Temp. gain = 90

Dome Temp./Hum. 21.2°C/54.5% Transparency Conditions part cloudy

dome fans off.

| Exp. Mtr. | Seeing | V. Pr. Mag. | Sp. | Inst.    | Grating/Tilt     | Slit  | <sup>Chamber</sup><br><del>Emulsion</del> | P.H. | Program       | Remarks                      | Quality |
|-----------|--------|-------------|-----|----------|------------------|-------|---|------|---------------|------------------------------|---------|
|           | 2"     |             |     | CASS CCD | 1800nm<br>G=6065 | 306nm | 6604Å                                     | 314  | focus test    |                              |         |
|           |        |             |     |          |                  |       |   | 1    |               | BIAS4.BAT                    |         |
|           |        |             |     |          |                  |       |   | 5    |               | Telescope on E side of pier. |         |
| 2000      | 1.36   | B7V         |     |          |                  |       |   | 6    | Telluric std. | Air Mass ~ 5.85              | 4055/N  |
| 2000      | "      | "           |     |          |                  |       |   | 7    | "             | Air Mass ~ 6.55              | ←       |
|           |        |             |     |          |                  |       |   | 8    |               |                              |         |
|           |        |             |     |          |                  |       |   | 9    |               |                              |         |
| 2500      | 5.00   | APSi        |     |          |                  |       |   | 10   | Bln He *      |                              |         |
| 2500      | "      | "           |     |          |                  |       |   | 11   | "             | S/N ~ 270                    |         |
| 2500      | "      | "           |     |          |                  |       |   | 12   | "             |                              |         |
|           |        |             |     |          |                  |       |   | 13   |               |                              |         |
| 2700      | 5.00   | APSi        |     |          |                  |       |   | 14   | Bln He *      |                              |         |
| 2900      | "      | "           |     |          |                  |       |   | 15   | "             | SIN ~ 295                    |         |
| 3000      | "      | "           |     |          |                  |       |   | 16   | "             |                              |         |
|           |        |             |     |          |                  | 7.4 k |   | 17   |               |                              |         |

149 # 2

Date 1994 JUL 11/12 Observers [BLN] WDE (HLW)

Emulsion Batches:

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| Plate No.          | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |      |
|--------------------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|------|
|                    |           |              |                     |                         |                       |                   |             | Type/Filter   | Exp. |
| 086                | BIAS (4)  |              |                     |                         |                       |                   |             |               |      |
| 087                | HD124 224 | 140712       | 025300              | 21:44:56                |                       |                   |             |               | 356  |
| 088                | HD124224  | "            | "                   | 21:51:35                |                       | 2:47 W            |             |               | 341  |
| 089                | HD124224  | "            | "                   | 21:57:52                |                       | 2:53 W            |             |               | 365  |
| 090                | Comp      |              |                     |                         |                       |                   |             | FeAr<br>Clear | 60   |
| 091                | HD124224  | 140712       | 025300              | 22:05:10                |                       | 3:02 W            |             |               | 352  |
| <del>092</del> 092 | HD124 224 | "            | "                   | 22 13 18                |                       | 3:09 W            |             |               | 377  |
| 093                | HD124224  | "            | "                   | 22:19:55                |                       |                   |             | FeAr<br>clear | 60   |
| 094                | comp      |              |                     |                         |                       |                   |             | FeAr<br>clear | 60   |
| 095                | HD124224  | 140712       | 025300              | 22:29:26                |                       |                   |             |               | 414  |
| 096                | HD124224  | "            | "                   | 22:36:45                |                       | 3:33 W            |             |               | 418  |
| 097                | HD124224  | "            | "                   | 22:43:59                |                       | 3:41              |             |               | 451  |
| 098                | Comp      |              |                     |                         |                       |                   |             | FeAr<br>Clear | 60   |
| 099                | HD124224  | 14 07 12     | 02 53 00            | 22:55:05                |                       | 3:53 W            |             |               | 484  |
| 24100              | HD124224  | 14 07 12     | 02 53 00            | 23:03:37                |                       | 4:03 W            |             |               | 574  |

Spectr. Temp. .... Dome Temp./Hum. 20.0°C/57.1% Transparency Conditions ... Clear .....

Focus ..... 6.74 .....

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst.    | Grating/Tilt     | Slit  | <sup>C7</sup><br><del>Emulsion</del> | P.H. | Program        | Remarks          | Quality |
|-----------|--------|-----------|------|----------|------------------|-------|--------------------------------------|------|----------------|------------------|---------|
|           |        |           |      | CASS CCD | 1800nm<br>G=6065 | 306nm | 6604Å                                | 1    |                | rel. E of piers, |         |
| 4000      |        | 5.00      | ApSi |          | MAX ADU ~        | 12.8  | K                                    | 18   | BLN He*        |                  |         |
| 4000      |        | "         | "    |          | MAX ADU ~        | 14.8  | K                                    | 19   | "              | S/N ~ 355        |         |
| 4000      |        | "         | "    |          | MAX ADU ~        | 13.1  | K                                    | 20   | "              |                  |         |
|           |        |           |      |          |                  |       |                                      | 21   |                |                  |         |
| 4000      |        | 5.00      | ApSi |          | MAX ADU ~        | 13.2  | K                                    | 22   | BLN He*        |                  |         |
| 4000      |        | "         | "    |          | Max ADU ~        | 12.5  | K                                    | 23   | "              | S/N ~ 355        |         |
|           |        | "         | "    |          | MAX ADU ~        | 14.0  | K                                    | 24   | "              |                  |         |
|           |        |           |      |          |                  |       |                                      | 25   |                |                  |         |
| 4000      |        | 5.00      | ApSi |          | MAX ADU ~        | 13.2  | K                                    | 26   | BLN He*        |                  |         |
| 4000      |        | "         | "    |          | MAX ADU ~        |       |                                      | 27   | "              | S/N ~ 360        |         |
| 4000      |        | "         | "    |          | MAX ADU ~        | 10.7  | K                                    | 28   | "              |                  |         |
|           |        |           |      |          |                  |       |                                      | 29   |                |                  |         |
| 4000      |        | 5.00      | ApSi |          | Max ADU =        | 11.8  | K                                    | 5    | BLN He*<br>pgm |                  |         |
| 4014      |        | "         | "    |          |                  |       |                                      | 6    | "              | S/N ~ 350        |         |







CCD Spectr. Temp.  $-100^{\circ}\text{C}$

Dome Temp./Hum.  $18.8^{\circ}\text{C}/56.3\%$  Transparency Conditions  $\text{Scattered Thin Clouds}$  152

Focus  $b: 74$

Dome Fans OFF

Spectr. Temp.  $\text{Gain} = 90$

Dome Temp./Hum. ....

CSS Ahead of WWU by 5s.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.    | Inst.    | Grating/Tilt              | Slit      | Emulsion | P.H.        | Program        | Remarks          | Quality |
|-----------|--------|-----------|--------|----------|---------------------------|-----------|----------|-------------|----------------|------------------|---------|
| 4000      |        | 5.00      | ApSi   | Cass CCD | 1800 $\ell$ /mm<br>G=6065 | 306 $\mu$ | 6604A    | 6<br>8<br>1 | Bln He*<br>pgm |                  |         |
| 4000      |        | 5.00      | ApSi   |          |                           |           |          | 9           | Bln He*        |                  |         |
|           |        | "         | "      |          |                           |           |          | 10          | "              |                  |         |
|           |        | "         | "      |          |                           |           |          | 11          | "              |                  |         |
|           |        |           |        |          |                           |           |          | 17          |                |                  |         |
|           |        |           |        |          |                           |           |          | 2           |                |                  |         |
| 5229      |        |           |        |          |                           |           |          | 12          |                |                  |         |
| 4000      |        | 2.99      | ADIn   |          |                           |           |          | 13          | Telluric STD   |                  |         |
| 4000      |        | "         | "      |          |                           |           |          | 14          | "              |                  |         |
|           |        |           |        |          |                           |           |          | 15          |                |                  |         |
|           |        | 7.32      | KD III |          |                           |           |          |             | Seeing Test    | Dome W, no wind. |         |
|           |        | "         | "      |          |                           |           |          |             | Seeing Test    |                  |         |
|           |        |           |        |          |                           |           |          | 1           |                |                  |         |







Pg #1  
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Tue/Wed

Date 1994 Jul 12/13 Observers [B]n] III/Hlw

Emulsion Batches:  
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| Plate No. | Object       | R.A.<br>1900                    | Declination<br>1900       | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination             | Comparison<br>Type/Filter | Exp.                  |
|-----------|--------------|---------------------------------|---------------------------|-------------------------|-----------------------|-------------------|-------------------------|---------------------------|-----------------------|
| cc24153/4 | Comp/Stellar | Hartman                         | Mask posn'                |                         |                       | Zenith            | West<br>of pier         | FeAr<br>Clear             | 60                    |
| 55        | Bias (4)     |                                 |                           | 20:29                   |                       |                   |                         | FeAr<br>Clear             | 60                    |
| 56        | Comp         |                                 |                           | 20:43:08                |                       |                   |                         | FeAr<br>Clear             | 300<br><del>444</del> |
| 57        | HD87901      | 10 03 03                        | 12 27 22                  | 20 47 49                |                       | 5:50 W            | Air Mass End<br>= 5.712 |                           | 300<br><del>444</del> |
| 58        | H087901      | 10 03 03                        | 12 27 22                  | 20:54 07                |                       | 5:56 W            | 6.472                   |                           | 300                   |
| 59        | Comp         |                                 |                           | 21:01:50                |                       |                   |                         | FeAr<br>clear             | 60                    |
| 60        | Comp         |                                 |                           | 21:07:02                |                       |                   |                         | FeAr<br>clear             | 60                    |
| 61        | HD93521      | 10 42 42                        | 38 06                     | 21 09 20                |                       | 5:57 W            | 2320                    |                           | 1847                  |
| 62        | Comp         |                                 |                           | 21:41:46                |                       |                   |                         |                           |                       |
| 63        | Bias (4)     |                                 |                           | 21:43                   |                       |                   |                         |                           |                       |
| 64        | HD 93521     | 10 42 42                        | 38 06                     | 21:44:10                |                       | 6:17 W            | 2626                    |                           | 900                   |
| 65        | Comp         |                                 |                           |                         |                       |                   |                         | FeAr<br>clear             | 60                    |
| 66        | Bias (4)     |                                 |                           | 22:40                   |                       |                   |                         |                           |                       |
| 67        | Comp         |                                 |                           | 22:42:24                |                       |                   |                         | FeAr<br>clear             | 60                    |
| 68        | HD 150100    | <del>10 33 51</del><br>10 53 49 | <del>53 60</del><br>53 60 | 22:45:10                |                       | <del>6:25 W</del> | <del>10479</del>        |                           | 462                   |



Spectr. Temp.  $-100.0^{\circ}$  Dome Temp./Hum.  $24.3^{\circ}\text{C}/71.6\%$  Transparency Conditions  $\dots$  Partial Clouds 156

Focus  $\dots$  6.72  $\dots$

Dome Fans ON

Spectr. Temp.  $\dots$   $CGR = 20$

Dome Temp./Hum.  $\dots$  480 0 50 1024 4 1 ccdfmt

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst.            | Grating/Tilt               | Slit      | Emulsion            | P.H. | Program                  | Remarks  | Quality |
|-----------|--------|-----------|------|------------------|----------------------------|-----------|---------------------|------|--------------------------|--|---------|
|           |        |           |      | Cass CCD         | 1800 $\mu$ /mm<br>G = 6065 | 306 $\mu$ | 6604R               | 3/4  | Focus Test               |  | good    |
|           |        |           |      |                  |                            |           |                     | 1    |                          |  |         |
|           |        |           |      |                  |                            |           |                     | 5    |                          | Tel E. of piers,<br>exposure meter - running     |         |
| 53        |        | 1.36      | B7V  | $\sim 360:1$ S/W |                            |           | Max ADU $\sim 8518$ | 6    | Telluric Std             | very slow.                                       |         |
| 1809      |        | 1.36      | B7V  |                  |                            |           | max ADU $\sim 8.4K$ | 7    | " "                      | obs. through clouds 24.                          |         |
|           |        |           |      |                  |                            |           |                     | 8    |                          | Exposure meter - back<br>to normal for this one. |         |
|           |        |           |      |                  |                            |           |                     | 9    |                          |  |         |
| 984       |        | 7.04      | 09SV | $\sim 190:1$ S/W |                            |           | Max ADU 3500        | 10   | Bln 0* pgm               | Catwalk Humidity = 82%                           |         |
|           |        |           |      |                  |                            |           |                     | 11   |                          | at 2100  | 23.6°   |
|           |        |           |      |                  |                            |           |                     | 1    |                          |  |         |
| 150       |        | 7.04      | 09SV | $\sim 80:1$ S/W  |                            |           | max ADU 850         | 12ci |                          |  |         |
|           |        |           |      |                  |                            |           |                     | 13ci |                          |  |         |
|           |        |           |      |                  |                            |           |                     | 1ci  |                          | Huerikon crashed                                 |         |
|           |        |           |      |                  |                            |           |                     | 3ci  |                          |  |         |
| 2200      |        | 5.65      | B7SV | $\sim 275:1$ S/W |                            |           | Max ADU 9K          | 4ci  | Bln Telluric<br>Std 2000 |  | 22.7°   |
|           |        | 6.55      | B7V  |                  |                            |           |                     |      |                          | B7V sin  |         |



Spectr. Temp. ... 101.0 C ... Dome Temp./Hum. ... 22.7°/79.1% Transparency Conditions ... 158

Focus ... 61.72

Spectr. Temp. ... gain = 90 ... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg.<br>Mag.  | Sp.         | Inst.                                  | Grating/<br>Tilt    | Slit      | Emulsion<br>Densities | P.H. | Program                    | Remarks                          | Quality |
|-----------|--------|---------------|-------------|--|---------------------|-----------|-----------------------|------|----------------------------|----------------------------------|---------|
|           |        |               |             | Cass<br>CCD                            | 1800 21mm<br>G=60x5 | 306<br>um | 6604F                 | 5ci  |                            | Telescope still on E side        |         |
| 3754      |        |               |             |  |                     |           |                       | 6ci  |                            |                                  |         |
| 2200      |        | (658<br>5156) | A11M<br>B9V | ~ 200:1 SW<br>MAX ADU 7.1K             |                     |           |                       | 7ci  | Bin Telluric<br>Std Secord | (Binary - both<br>stars in slit) |         |
|           |        |               |             |  |                     |           |                       | 8ci  |                            | Shutters closed                  |         |
|           |        |               |             |  |                     |           |                       | 9ci  |                            | (lightning about) 22.4°          |         |
|           |        |               |             |  |                     |           |                       | 1    |                            |                                  |         |
|           |        |               |             | Waited for clouds & lightning to pass  |                     |           |                       |      | A                          | 1                                | 1       |
|           |        |               |             | Moved telescope to W side of pier      |                     |           |                       |      | T                          |                                  | 0       |
|           |        |               |             | Clouds re-appeared                     |                     |           |                       |      | W                          | O                                | R       |
|           |        |               |             | Lightning re-appeared                  |                     |           |                       |      | M                          |                                  |         |
|           |        |               |             | Humidity on catwalk now at 92% (01:00) |                     |           |                       |      | a                          | n                                | d       |
|           |        |               |             | Good Close, Good Close...              |                     |           |                       |      |                            |                                  |         |
|           |        |               |             |  |                     |           |                       |      |                            | Perseus                          |         |



Date ... 1994 ... Jul 13/14 Observers ... [Bin] III / H.W...

| Plate No.  | Object                    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination<br>Air Mass | Comparison<br>Type/Filter | Exp.  |
|------------|---------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------------------|---------------------------|-------|
| CC24194/95 | Comp / STELLAR<br>HARTMAN |              |                     |                         |                       |                   |                         | FeAR<br>clear             | 60/60 |
| 96         | Bias (4)                  |              |                     | 20:44                   |                       |                   |                         |                           |       |
| 97         | Comp                      |              |                     | 20:49:41                |                       |                   |                         | FeAR<br>clear             | 60    |
| 98         | HD 87901                  | 10 03 03     | +12 27 22           | 20:51:40                |                       | 5:54W             | 6.1592                  |                           | 58    |
| 99         | HD 87901                  | 10 03 03     | +12 27 22           | 20:53:04                |                       | 5:55W             | 6.337                   |                           | 62    |
| 200        | Comp                      |              |                     | 20:55:13                |                       |                   |                         | FeAR<br>clear             | 60    |
| 01         | Comp                      |              |                     | 21:00:17                |                       |                   |                         | FeAR<br>clear             | 60    |
| 02         | HD 93521                  | 10 42 42     | +38 06 00           | 21:05:18                |                       | 5:42W             | 2.1371                  |                           | 900   |
| 03         | Comp                      |              |                     | 21:21:33                |                       |                   |                         | FeAR<br>clear             | 60    |
| 04         | HD 93521                  | 10 42 42     | +38 06 00           | 21:23:23                |                       | 6:00W             | 2.368                   |                           | 907   |
| 05         | Comp                      |              |                     | 21:39:58                |                       |                   |                         | FeAR<br>clear             | 60    |
| 06         | HD 93521                  | 10 42 42     | +38 06 00           | 21:47:46                |                       | 6:18W             | 2.654                   |                           | 900   |
| 07         | Bias (4)                  |              |                     | 21:57                   |                       |                   |                         |                           |       |
| 08         | Comp                      |              |                     | 21:58:23                |                       |                   |                         | FeAR<br>Clear             | 60    |
| 09         | HD 93521                  | 10 42 42     | +38 06 00           | 22 00 09                |                       | 6:37 W            | 3.020                   |                           | 900   |



Spectr. Temp. ... -100.0 C. Dome Temp./Hum. ... 19.6°/62.2% Transparency Conditions ... Clear, ... scattered clouds ...  
 Focus ... 6.75 ... Dome lens off on horizon,  
 Spectr. Temp. ... gain = 9.2. Dome Temp./Hum. ...  
 CCD # 480 050 1024 41

| Exp. Mtr. | Seeing | V <sub>Mag.</sub> | Sp.   | Inst.       | Grating/<br>Tilt           | Slit      | Emulsion/<br>element | P.H. | Program              | Remarks                            | Quality |
|-----------|--------|-------------------|-------|-------------|----------------------------|-----------|----------------------|------|----------------------|------------------------------------|---------|
|           |        |                   |       | Cass<br>ccd | 1800 21mm<br>17=6065       | 306<br>um | 6604A                | 3/4  | Focus Test           | Telescope on W side of pier        |         |
|           |        |                   |       |             |                            |           |                      | 1    |                      |                                    |         |
| 3090      | 1.36   |                   | B7V   |             |                            |           |                      | 5ci  |                      | Telescope on E side of pier        |         |
| 2500      | 1.36   |                   | B7V   |             |                            |           |                      | 6ci  | Telluric<br>Standard | Max ADU 13.3K                      |         |
| 2500      |        |                   |       |             |                            |           |                      | 7ci  | — " —                | " " 12.5K                          |         |
| 3041      |        |                   |       |             |                            |           |                      | 8ci  |                      |                                    |         |
|           | 7.04   |                   | 09.5V |             |                            |           |                      | 9ci  |                      |                                    | 18.4°   |
| 806       |        |                   |       |             | ~160:1 S/N                 |           |                      | 10ci | Blnd* pgm            | Max ADU 2.1K                       |         |
|           |        |                   |       |             |                            |           |                      | 11ci |                      |                                    | 18.2°   |
| 660       | 7.04   |                   | 09.5V |             | ~160:1 S/N<br>Max ADU 1.9K |           |                      | 12ci | Blnd* pgm            | (21:30)<br>Humidity 80% on catwalk |         |
|           |        |                   |       |             |                            |           |                      | 13ci |                      |                                    | 17.9°   |
| 570       | 7.04   |                   | 09.5V |             | ~155:1 S/N<br>Max ADU 1.7K |           |                      | 14ci | Blnd* pgm            |                                    |         |
|           |        |                   |       |             |                            |           |                      | 1    |                      |                                    |         |
| 3200      |        |                   |       |             |                            |           |                      | 15   |                      |                                    |         |
| 455       | 7.04   |                   | 09.5V |             | ~145:1 S/N<br>Max ADU 1.6K |           |                      | 16   | Blnd* pgm            |                                    |         |

Pg #2  
161

Date 1994 Jul 13/14 Observers [Bln] III/HW

Emulsion Batches:

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| Plate No. | Object   | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination<br>Air Mass | Comparison<br>Type/Filter | Exp. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------------------|---------------------------|------|
| CC24210   | Comp     |              |                     | 22:15:50                |                       |                   |                         | FeAr<br>Clear             | 60   |
| 11        | HD93521  | 10 42 42     | +38 06 00           | 22:17:27                |                       | 6:54W             | 3.468                   |                           | 915  |
| 12        | Comp     |              |                     | 22:33:45                |                       |                   |                         | FeAr<br>Clear             | 60   |
| 13        | HD93521  | 10 42 42     | +38 06 00           | 22:36:00                |                       | 7:02W             | >4                      |                           | 900  |
| 14        | Comp     |              |                     | 22:52:02                |                       |                   |                         | FeAr<br>Clear             | 60   |
| 15        | Bias(4)  |              |                     | 22:53                   |                       |                   |                         |                           |      |
| 16        | Comp     |              |                     | 23:00                   |                       |                   |                         | FeAr<br>Clear             | 60   |
| 17        | HD167370 | 18 09 45     | 38 44 44            | 23:02:21                |                       | 0:12W             | 1.0048                  |                           | 800  |
| 18        | Comp     |              |                     | 23:18:58                |                       |                   |                         | FeAr<br>Clear             | 60   |
| 19        | Comp     |              |                     | 23:28:57                |                       |                   |                         | FeAr<br>Clear             | 60   |
| 20        | HD167387 | 18 09 55     | 60 23 02            | 23:32:32                |                       | 0:55W             | 1.0547                  |                           | 1450 |
| 21        | Comp     |              |                     | 23:57:54                |                       |                   |                         | FeAr<br>Clear             | 60   |
| 22        | Bias(4)  |              |                     | 23:59                   |                       |                   |                         |                           |      |
| 23        | Comp     |              |                     | 00:05:48                |                       |                   |                         | FeAr<br>Clear             | 60   |
| 24        | HD177724 | 19 00 49     | 13 42 53            | 00:07:40                |                       | 0:13W             | 1.1564                  |                           | 63   |

Spectr. Temp.  $-100.5^{\circ}\text{C}$ Dome Temp./Hum.  $17.2/68.7$ Transparency Conditions  $\text{Clear}$ 

162

Focus  $6.75$ Spectr. Temp.  $\text{Cg. Fin. } = 9.9$ 

Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | V. Pos. Mag. | Sp.    | Inst.                   | Grating/Tilt       | Slit      | Emission clambda | P.H. | Program                    | Remarks   | Quality |
|-----------|--------|--------------|--------|-------------------------|--------------------|-----------|------------------|------|----------------------------|---|---------|
|           |        |              |        | Cass CCD                | 18002/mm<br>G=6065 | 306 $\mu$ | 6604 Å           | 17   |                            | Telescope still on E side of pier                   | 17.1°   |
| 340       | 5-6"   | 7.04         | 095    | $\sim 140:1$<br>Max ADU | S/N                | 1.3 K     |                  | 18   | Bln O* pgm                 |   | 17.0°   |
|           |        |              |        |                         |                    |           |                  | 19ci |                            |   |         |
| 216       |        | 7.04         | 09.5V  |                         |                    |           |                  | 20ci | Bln O* pgm                 | (22:40)<br>82% Humidity on catwalk                  |         |
| 3048      |        |              |        |                         |                    |           |                  | 21ci |                            |   | 16.6°   |
|           |        |              |        |                         |                    |           |                  | 22   |                            |   |         |
| 1460      |        | 6.04         | B9 III | Max ADU                 | 4.9 K              |           |                  | 23ci | Bln Telluric<br>Std Search | Telescope now on W side of pier<br>$\sim 260:1$ S/N | 16.7°   |
|           |        |              |        |                         |                    |           |                  | 24   |                            |   |         |
| 3325      |        |              |        |                         |                    |           |                  | 25ci |                            |   | 16.4°   |
| 2000      |        | 6.31         | A1 Vm  | Max ADU                 | 6.5 K              |           |                  | 26ci | Bln Telluric<br>Std Search |   |         |
|           |        |              |        |                         |                    |           |                  | 27ci |                            |   |         |
|           |        |              |        |                         |                    |           |                  | 1ci  |                            |   |         |
|           |        |              |        |                         |                    |           |                  | 28ci |                            |   |         |
| 3000      |        | 3.31         | AV     | Max ADU                 | 8520               |           |                  | 29ci | Telluric<br>Standard       | 86% Humidity on catwalk                             | 16.1°   |

exposure meter  
reset itself ~~and~~  
after about 300 counts



Date 1994 Jul 13/14 Observers [Bln] III/Hlw

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| Plate No.       | Object         | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination          | Comparison<br>Type/Filter | Exp. |
|-----------------|----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|----------------------|---------------------------|------|
| 1cc24225        | HD177724       | 19 00 49     | 13 42 53            | 00:09:29                |                       | 0:15 W            | Air Mass =<br>1.1569 | FeAr<br>71                | 35   |
| 26              | Comparison     |              |                     | 00:11:48                |                       |                   |                      | FeAr<br>Clear 60          |      |
| cg 40318<br>-21 | 4x<br>HD176844 | 18 57 03     | +40 32 36           |                         |                       |                   |                      | .067                      |      |
| cg 40322<br>23  | 2x<br>HD176844 | 18 57 03     | +40 32 36           |                         | 00 28                 |                   |                      | .133                      |      |
| a24 227         | Comp           |              |                     | 00:39:28                |                       |                   |                      | FeAr<br>clear 60          | 45   |
| 28              | HD192983       | 20 12 49     | + 49 55 29          | 00:40:36                |                       | -0:07 E           | 1.0064               | 1068                      | 26   |
| 29              | Comp           |              |                     | 01:01:01                |                       |                   |                      | FeAr<br>clear 60          |      |
| 30              | Bias (4)       |              |                     | 01:02                   |                       |                   |                      |                           |      |
| 31              | Comp           |              |                     | 01:12:53                |                       |                   |                      | FeAr<br>clear 60          | 20   |
| 32              | HD194244       | 20 19 32     | +0 44 41            | 01:16:38                |                       | 0:11 W            | 1.3649               | 522                       | 12   |
| 33              | Comp           |              |                     | 01:28:27                |                       |                   |                      | 60                        | 53   |
| 34-53           | 20x FLAT       |              | ~38°                | 01:59                   |                       | ~6:15 W           |                      | 1/4 Ap<br>Tung<br>6       |      |
| 54              | Bias (4)       |              |                     | 02:02                   |                       |                   |                      |                           |      |
| 55              | Comp           |              |                     | 02:47:37                |                       |                   |                      | FeAr<br>Clear 60          |      |
| 56              | HD194244       | 20 19 32     | +00 44 41           | 02:49:48                |                       | 1:56 W            | 1.5549               | 1200                      | 351  |



Spectr. Temp. ... -100.4 °C ..... Dome Temp./Hum. 16.1°C/73.2 ..... Transparency Conditions ... Approaching Clouds ..... 164  
 Focus ..... 6.75 .....  
 Spectr. Temp. ... gain = 90 ..... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.    | Inst.  | Grating/Tilt       | Slit | Emulsion | P.H. | Program                    | Remarks   | Quality |
|-----------|--------|-----------|--------|--|--------------------|------|----------|------|----------------------------|---|---------|
| 3500      |        | 3.31      | A0Vn   | Cass CCD   | 1800l/mm<br>G=6065 | 306µ | 6604A    | 30   | Telluric Std.              | Telescope on W. side of pier<br>Max ADU 7.1K<br>(00:30)<br>88% humidity on camera |         |
|           | 5-6"   | 6.65      | M2 III |  |                    |      |          |      | Sci                        |   |         |
|           | 5-6"   | 6.65      | M2 III |  |                    |      |          |      | <del>Sci</del> Seeing Test | Dome W, mod W wind<br>above slit  |         |
|           |        |           |        |  |                    |      |          |      | Seeing Test                |   |         |
| 4549      |        |           |        | NOTE COUNTS ON EXP METER 1.5X HIGHER<br>~200:1 S/N       |                    |      |          | 6ci  |                            | Spectrograph controller<br>failed for no apparent reason                          |         |
| 2600      |        | 6.31      | A2Vn   |  |                    |      |          | 7ci  | Bln Telluric Std Search    | (01:00)<br>90% Humidity on camera 15.7°   |         |
|           |        |           |        |  |                    |      |          | 8ci  |                            |   |         |
|           |        |           |        |  |                    |      |          | 1ci  |                            |   |         |
| 262       |        |           |        | NOTE COUNTS ON EXP METER<br>DOWN BY A FACTOR             |                    |      |          | 9ci  |                            |   |         |
| 128       |        | 6.15      | B9V    | OF ~15<br>↓ THEN ↓                                       |                    |      |          | 10ci | Bln Telluric Std Search    | closed up →<br>clouds & maybe (?)<br>a little rain                                |         |
| 5333      |        |           |        |  |                    |      |          | 11ci |                            |   |         |
|           |        |           |        | Telescope on E. side of pier<br>Range: 10623 - 11770 ADU |                    |      |          |      |                            | BUT NOTE: Hα emission is (~70:1 S/N)<br>above the continuum! (max ADU 0.5)        |         |
|           |        |           |        | Telescope on W. side of pier                             |                    |      |          | 12   |                            | Humidity 92% on camera  | 16.1°   |
| 3517      |        | 6.15      | B9V    |  |                    |      |          | 13   | Hα emission                | Max ADU 7K  | 15.6°   |



Spectr. Temp. ... 100.0° ... Dome Temp./Hum. 15.6°/70.0% Transparency Conditions Clear : Oh Yeah! 166

Focus ... 6.75

Spectr. Temp. ... 99.0° ... Dome Temp./Hum. ....

| Exp. Mtr.               | Seeing | V. Mag. | Sp.             | Inst.       | Grating/<br>Tilt   | Slit      | Emulsion | P.H. | Program                    | Remarks                    | Quality |
|-------------------------|--------|---------|-----------------|-------------|--------------------|-----------|----------|------|----------------------------|----------------------------|---------|
|                         |        |         |                 | Pass<br>ccd | 1900/1mm<br>G=600Å | 306<br>µm | 6604A    | 14c  |                            |                            |         |
| 5146                    |        |         |                 |             |                    |           |          | 15   |                            | Humidity 92%<br>on catwalk | 15.70   |
| 1906                    |        | S.40    | AV <sub>h</sub> | 2220:1      | S/N                |           |          | 16   | Bin Telluric<br>Std Search | MAX AOU 4.2K               | 15.7°   |
|                         |        |         |                 |             |                    |           |          | 17   |                            |                            |         |
| 43-k                    |        |         | G2V             |             |                    |           |          | 18   | Just for fun               |                            |         |
| All to WORM and Perseus |        |         |                 |             |                    |           |          |      |                            |                            |         |



167 page #1

Emulsion Batches:

Date ..1994.. Jul 14/15 Observers ..[Bln].. III.. /Ri./Smt  
Thu/Fri

| Plate No. | Object                    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination          | Comparison<br>Type/Filter            | Exp.          |
|-----------|---------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|----------------------|--------------------------------------|---------------|
| CC24263/4 | COMP / STELLAR<br>HARTMAN |              |                     |                         |                       |                   |                      | Fe Ar<br>clear                       | 60<br>/60     |
| 65        | Bias (4)                  |              |                     | 21:25                   |                       |                   |                      |                                      |               |
| 66        | COMP                      |              |                     | 21:39:21                |                       |                   |                      | Fe Ar<br>clear                       | 60            |
| 67        | HD 144708                 | 16 02 03     | -12 28 35           | 21:50:11                |                       | 1:16W             | A: r m m s<br>1.9358 |                                      | 900           |
| 68        | COMP                      |              |                     | 22:06:19                |                       |                   |                      | Fe Ar<br>clear                       | 60            |
| 69        | COMP                      |              |                     | 22:16:49                |                       |                   |                      | Fe Ar<br>clear                       | 60            |
| 70        | HD 159139                 | 17 28 54     | +28 23 47           | 22:18:56                |                       | 0:16W             | 1.0392               |                                      | 900           |
| 71        | COMP                      |              |                     | 22:35:22                |                       |                   |                      | Fe Ar<br>clear                       | 60            |
| 72        | Bias (4)                  |              |                     | 22:38                   |                       |                   |                      | <del>Fe Ar</del><br><del>clear</del> | <del>60</del> |
| 73        | COMP                      |              |                     | 22:41:49                |                       |                   |                      | Fe Ar<br>clear                       | 60            |
| 74        | HD 167380                 | 18 09 45     | 38 44 44            | 22:48:59                |                       | 0:05 W            | 1.0641               |                                      | 1200          |
| 75        | COMP                      |              |                     | 23:06:04                |                       |                   |                      | Fe Ar<br>clear                       | 60            |
| 76        | COMP                      |              |                     | 23:14:10                |                       |                   |                      | Fe Ar<br>clear                       | 60            |
| 77        | HD 167387                 | 18 09 55     | 60 23 02            | 23:17:34                |                       | 0:40W             | 1.0492               |                                      | 1200          |
| 78        | COMP                      |              |                     | 23:48:55                |                       |                   |                      | Fe Ar<br>clear                       | 60            |



Spectr. Temp. ... 100.0 C ...

Dome Temp./Hum. 18.6°/60.5%

Scattered cloud  
Transparency Conditions ... haze ...

Focus ... 6.7?

Dome fms on Top 50 Prm  
Scratch

Spectr. Temp. again = 9.0

Dome Temp./Hum. ....

ccdfmt 480 050 1024 4 1

| Exp. Mtr.       | Seeing | ✓ Prg. Mag. | Sp. | Inst.       | Grating/Tilt       | Slit         | Emission | P.H. | Program                    | Remarks   | Quality |
|-----------------|--------|-------------|-----|-------------|--------------------|--------------|----------|------|----------------------------|---|---------|
| <del>3627</del> |        |             |     | Cass<br>ccd | 1800/1mm<br>G=6065 | 300<br>um    | 6604A    | 3/4  |                            |   |         |
|                 |        |             |     |             |                    |              |          | 1    |                            |   |         |
| 7302            |        |             |     |             |                    |              |          | 5ci  |                            | N fan off (21:40)   | 18.2°   |
| 3831            | 5.78   | B9.5V       |     | 2260:1 SIN  | Max ADU 5.8K       |              |          | 6ci  | Bln Telluric<br>Std Search | → H $\alpha$ emission<br>Humidity 87% on<br>the catwalk (22:00) |         |
|                 |        |             |     |             |                    |              |          | 7ci  |                            |   |         |
|                 |        |             |     |             |                    |              |          | 8ci  |                            |   | 18.0°   |
| 3261            | 5.62   | A1V         |     |             |                    | Max ADU 9.2K |          | 8ci  | Telluric Std               |   | 17.7°   |
| 3154            |        |             |     |             |                    |              |          | 8ci  |                            |   |         |
|                 |        |             |     |             |                    |              |          | 1ci  |                            |   |         |
| 3214            |        |             |     |             |                    |              |          | 9ci  |                            |   | 17.6°   |
| 4050            | 6.04   | B9 III      |     | 2330:1 SIN  | Max ADU 10.3K      |              |          | 10ci | Bln Telluric<br>Std Search |   | 17.4°   |
| <del>4050</del> |        |             |     |             |                    |              |          | 11ci |                            |   |         |
|                 |        |             |     |             |                    |              |          | 12ci |                            |   |         |
| 1854            | 6.31   | A1V         |     | 220:1 SIN   | Max ADU 5.6K       |              |          | 13ci | Bln Telluric<br>Std Search | Humidity 89% on<br>catwalk (23:30)                              | 17.1°   |
| 4048            |        |             |     |             |                    |              |          | 14ci |                            |   |         |

\* All to Perseus & WORM

Date 1994 July 14/15 Observers [Bln] III / Sm + Ri

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| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination<br>Approx | Comparison<br>Type/Filter | Exp. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-----------------------|---------------------------|------|
| CC 24279  | Bias (4)  |              |                     | 23:40                   |                       |                   |                       |                           |      |
| 80        | Comp      |              |                     | 23:56:59                |                       |                   |                       | Fe Ar<br>clear            | 60   |
| 81        | HD 184606 | 19 30 11     | +19 33 18           | 23:59:08                |                       | 0:16E             | 1.0976                |                           | 300  |
| 82        | Comp      |              |                     | 00:05:19                |                       |                   |                       | Fe Ar<br>clear            | 60   |
| 83        | Comp      |              |                     | 00:15:33                |                       |                   |                       | Fe Ar<br>clear            | 60   |
| 84        | HD 188107 | 19 48 24     | +04 08 29           | 00:19:20                |                       | 0:05W             | 1.2957                |                           | 1500 |
| 85        | Comp      |              |                     | 00:45:33                |                       |                   |                       | Fe Ar<br>clear            | 60   |
| 86        | Bias (4)  |              |                     | 00:49                   |                       |                   |                       |                           |      |
| 87        | Comp      |              |                     | 00:51:28                |                       |                   |                       | Fe Ar<br>clear            | 60   |
| 88        | HD 188293 | 19 49 13     | -08 29 16           | 00:54:06                |                       | 0:30W             | 1.6443                |                           | 960  |
| 89        | Comp      |              |                     | 00:14:21                |                       |                   |                       | Fe Ar<br>clear            | 60   |
| 90        | Comp      |              |                     | 01:16:38                |                       |                   |                       | Fe Ar<br>clear            | 60   |
| 91        | HD 188294 | 19 49 13     | -08 29 51           | 01:19:16                |                       | 1:04W             | 1.7057                |                           | 1300 |
| 92        | Comp      |              |                     | 01:46:23                |                       |                   |                       | Fe Ar<br>clear            | 60   |
| 93        | Comp      |              |                     | 01:03:01                |                       |                   |                       |                           | 60   |

CCD  
 Spectr. Temp. ... -100.0 C ... Dome Temp./Hum. 16.9° / 78.3% Transparency Conditions ... Cirrus about 9 .....  
 Focus ..... 6.77 ..... clouds on S. horizon  
 Spectr. Temp. ... 90 ..... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Pr. Mag. | Sp.   | Inst.       | Grating/Tilt | Slit | Emulsion | P.H. | Program                 | Remarks   | Quality |
|-----------|--------|----------|-------|-------------|--------------|------|----------|------|-------------------------|---|---------|
|           |        |          |       |             |              |      |          | 1    |                         |   |         |
| ~3050     |        |          |       |             |              |      |          | 15ci |                         | Sp. controller needed to be reset after the last move (23:55)             |         |
| 1615      |        | 5.00     | B9TII | ~205:1 S/W  |              | Max  | APU 3.0K | 16ci | Bln Telluric std Search |   | 16.9°   |
| 3095      |        |          |       |             |              |      |          | 17ci |                         | CCD 3 problem:  |         |
| 3114      |        |          |       |             |              |      |          | 18ci |                         | "obj FEAR" did not get sent to controller                                 |         |
| 2190      |        | 6.55     | B9SVn | Heremission | ~275:1 S/W   | Max  | APU      | 19ci | Bln Telluric std Search | FeNe comp source was pierced [Ctrl S killed source before exposure began] |         |
| 3130      |        |          |       |             |              |      |          | 20ci |                         |   |         |
|           |        |          |       |             |              |      |          | 1    |                         |   |         |
| 29□       |        |          |       |             |              |      |          | 21ci |                         |   | 16.4°   |
| 1875      |        | 5.71     | B7Vn  | ~250:1 S/W  |              | Max  | APU 4.6K | 22ci | Bln Telluric Std Search |   |         |
| 3246      |        |          |       |             |              |      |          | 23ci |                         |   | 16.1°   |
| 3369      |        |          |       |             |              |      |          | 24ci |                         |   |         |
| 1344      |        | 6.49     | B8V   | ~225:1 S/W  |              | Max  | APU 3.0K | 25ci | Bln Telluric std Search | 93% humidity on catwalk (01:40)   |         |
| 3302      |        |          |       |             |              |      |          | 26ci |                         |   |         |
| 3548      |        |          |       |             |              |      |          | 27ci |                         |   |         |



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page #3

Emulsion Batches:

Date 1994 July 14 11.5 Observers [Bin] III / Smt / R. i.

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| Plate No.     | Object                    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination<br>Air Mass | Comparison<br>Type/Filter | Exp.  |
|---------------|---------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------------------|---------------------------|-------|
| CL24294       | Bias (4)                  |              |                     | 02:04:52                |                       |                   |                         |                           |       |
| 95            | HD 159139                 | 17 27 54     | 28 28 47            | 02:06:57                |                       | 4:04 W            | 1.5736                  |                           | 900   |
| 96            | COMP                      |              |                     | 02:23:24                |                       |                   |                         | Fe Ar<br>clear            | 60    |
| 97            | COMP                      |              |                     | 02:30:13                |                       |                   |                         | Fe Ar<br>clear            | 60    |
| 98            | HD 208565                 | 21 52 04     | + 11 36 05          | 02:33:10                |                       | 0:05 W            | 1.1771                  |                           | 900   |
| 99            | COMP                      |              |                     | 02:49:54                |                       |                   |                         | Fe Ar<br>clear            | 60    |
| 300           | COMP                      |              |                     | 02:54:41                |                       |                   |                         | Fe Ar<br>clear            | 60    |
| 01            | HD 209833                 | 22 01 03     | 28 28 41            | 02:57:10                |                       | 0:21 W            | 1.0379                  |                           | 900   |
| 02            | COMP                      |              |                     | 03:13:09                |                       |                   |                         | Fe Ar<br>clear            | 60    |
| 03            | Bias (4)                  |              |                     | 03:07                   |                       |                   |                         |                           |       |
| 04            | COMP                      |              |                     | 03:18:35                |                       |                   |                         | Fe Ar<br>clear            | 60    |
| 05            | HD 211297                 | 22 11 01     | + 8 38              | 03:21:16                |                       | 0:44 W            | 1.2470                  |                           | 1500  |
| 06            | COMP                      |              |                     | 03:47:11                |                       |                   |                         | Fe Ar<br>clear            | 60    |
| 07-26         | FLATS x 20                |              | ~0° 0'              |                         |                       | 0:45 W            |                         | 1/4 Ap<br>Tung            | 6     |
| <del>27</del> | Bias (4)                  |              |                     | 04:02                   |                       |                   |                         |                           |       |
| 28/29         | COMP (Stellar<br>Hot man) |              |                     |                         |                       |                   |                         | Fe Ar<br>clear            | 60/60 |



<sup>CCD</sup>  
 Spectr. Temp.  $\sim 100.4^{\circ}\text{C}$  ..... Dome Temp./Hum.  $16.5^{\circ}/102.3\%$  Transparency Conditions *getting hazier* ..... 172  
 Focus ..... *b.77* .....  
 Spectr. Temp. *cgain = 90* ..... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | $\frac{\text{Pte.}}{\text{Mag.}}$ | Sp.            | Inst.      | Grating/<br>Tilt | Slit | Emulsion     | P.H. | Program                 | Remarks                               | Quality |
|-----------|--------|-----------------------------------|----------------|------------|------------------|------|--------------|------|-------------------------|---------------------------------------|---------|
|           |        |                                   |                |            |                  |      |              | 1    |                         | 93.5% humidity on the catwalk (02:10) |         |
| 1813      |        | 5.62                              | AIV            |            |                  |      |              | 28ci | Telluric Standard       | 94% humidity on catwalk (02:25)       | 16.40   |
| 3582      |        | <del>5.54</del>                   | <del>A2V</del> |            |                  |      |              | 29ci |                         |                                       |         |
| 3246      |        |                                   |                |            |                  |      |              | 30ci |                         |                                       | 16.20   |
| 2809      |        | 5.54                              | A2V            | $\sim 310$ | S/W              |      | Max 7.9K     | 6ci  | Bln Telluric Std Search |                                       |         |
| 3300      |        |                                   |                |            |                  |      |              | 7ci  |                         |                                       |         |
|           |        |                                   |                |            |                  |      |              | 8ci  |                         |                                       | 16.00   |
| 1940      |        | 5.63                              | B9V            | $\sim 235$ | S/W              |      | Max 5K ADU   | 9ci  | Bln Telluric Std Search |                                       | 15.90   |
| 3237      |        |                                   |                |            |                  |      |              | 10ci |                         |                                       |         |
|           |        |                                   |                |            |                  |      |              | 11   |                         |                                       | 16.00   |
| 1485      |        | 6.21                              | AIV            | $\sim 215$ | S/W              |      | Max ADU 3.8K | 12ci | Bln Telluric Std Search | 95% humidity on the catwalk (3:30)    |         |
| 3318      |        |                                   |                |            |                  |      |              | 13ci |                         |                                       |         |
|           |        |                                   |                |            |                  |      |              | 14ci |                         |                                       |         |
|           |        |                                   |                |            |                  |      |              | 1    |                         |                                       |         |
| 3424/3511 |        |                                   |                |            |                  |      |              | 3/4  | Focus TSS               |                                       |         |

All to Perseus & WORM

Date 1994 July 15/16 Observers Hml/Rr/Smt.....

| Plate No.          | Object                  | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T.   | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison     |                |
|--------------------|-------------------------|--------------|---------------------|---------------------------|-----------------------|-------------------|-------------|----------------|----------------|
|                    |                         |              |                     |                           |                       |                   |             | Type/Filter    | Exp.           |
| CC 24330           | Bins (4)                |              |                     | 20:36:37                  |                       |                   |             |                |                |
| CC 24331/2         | COMP/STELLAR<br>HARTMAN |              |                     |                           |                       |                   |             | Fc AR<br>CLEAR | Fc AR<br>60/60 |
| CC 24333           | Comp                    |              | 2000                | <del>21:47</del><br>21:48 |                       |                   |             | Fc AR<br>CLEAR | 60             |
| CC 24334           | HD 120315               | 13 47 32     | 149 18 48           | 21:58                     |                       |                   |             |                | 20 s           |
| <del>CC 2433</del> | <del>"</del>            | <del>"</del> | <del>"</del>        | <del>21:53 41</del>       |                       |                   |             |                |                |
|                    |                         |              |                     | <del>21:57 37</del>       |                       |                   |             |                |                |
| CC 24335           | Comp                    |              |                     | 22 11:37                  |                       |                   |             | Fc AR<br>CLEAR | 60             |

Spectr. Temp. <sup>CCD</sup> -100..... Dome Temp./Hum. 19.5/77.5% Transparency Conditions *very fast moving* 174  
 Focus *G:82*.....  
 Spectr. Temp. <sup>CCD</sup> *90*..... Dome Temp./Hum. ....  
*thick clouds with holes*

| Exp. Mtr.              | Seeing | Ptg. Mag. | Sp. | Inst.       | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|------------------------|--------|-----------|-----|-------------|--------------|------|----------|------|---------|---------|---------|
|                        |        |           |     |             | 1800/446     | 300  | 4298A    | 1    |         |         |         |
|                        |        |           |     |             | "            | "    |          | 3/4  |         |         |         |
|                        |        | 1.86      | B3N | ORSS<br>CCD | 1800/446     | 300  |          | Sci  |         |         |         |
| ~4100                  |        |           |     |             |              |      |          | 6ci  |         |         |         |
| 2900                   |        |           |     |             |              |      |          | 7ci  |         | clouds  |         |
| 3387                   |        |           |     |             |              |      |          | Sci  |         |         |         |
| ALL TO PERSEUS & WORM. |        |           |     |             |              |      |          |      |         |         |         |





CCD Spectr. Temp. .... 100°C ..... Dome Temp./Hum. 20.1°C / 64.0% Transparency Conditions . clear with few high clouds <sup>176</sup>  
 Focus ..... 6.82 .....  
 Spectr. Temp. → gain 90 . Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst. | Grating/Tilt | Slit        | Emission | P.H.           | Program        | Remarks                               | Quality |
|-----------|--------|-----------|------|-------|--------------|-------------|----------|----------------|----------------|---------------------------------------|---------|
|           |        |           |      | CASS  | 1800         | 366 $\mu$ m | 4 248A   | 3/4            |                | TV Guider won't                       |         |
|           |        |           |      | CCD   | G = 4446     |             |          | <del>8</del> 1 |                | find any star in                      |         |
|           |        |           |      |       |              |             |          | 5              | <del>Hnd</del> | AS mode.                              |         |
| 5170      |        | 3.89      | B5II | "     | "            | "           | "        | 6ci            | Hnd            | Guarded in TV mode<br>~250:1 S/N      |         |
| 9393      |        | 3.89      | B5II | "     | "            | "           | "        | 7ci            |                | ~320:1 S/N                            |         |
| 4435      |        |           |      |       |              |             |          | 8ci            |                |                                       |         |
| 1773      |        | 3.89      | B5II | "     | "            | "           | "        | 9ci            |                | ~10.5K 350:1 S/N<br><del>~10.5K</del> |         |
| 10912     |        |           |      | "     | "            | "           | "        | 10ci           |                | 10K                                   |         |
| 4512      |        |           |      | "     | "            | "           | "        | 11ci           |                |                                       |         |
| 12019     |        | 3.89      | B5II | "     | "            | "           | "        | 12ci           |                |                                       |         |
| 12011     |        | 3.89      | B5II | "     | "            | "           | "        | 13ci           |                |                                       |         |
| 4515      |        |           |      | "     | "            | "           | "        | 14ci           |                |                                       |         |
| 12178     |        | 3.89      | B5II | "     | "            | "           | "        | 15ci           |                |                                       |         |
| 11613     |        | 3.89      | B5II | "     | "            | "           | "        | 16ci           |                |                                       |         |
| 4587      |        |           |      | "     | "            | "           | "        | 17ci           |                |                                       |         |
|           |        |           |      |       |              |             |          | 18             |                |                                       |         |

Date July 16/17..... Observers Hm./Ri./Smt.....

| Plate No.                    | Object                 | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End    | Declination | Comparison<br>Type/Filter | Exp. |
|------------------------------|------------------------|--------------|---------------------|-------------------------|-----------------------|----------------------|-------------|---------------------------|------|
| <del>CC 2435</del><br>147777 | <del>HD 147394</del>   | 16° 16' 49"  | 46° 33' 55"         | 01:57:58                |                       | 5h 16m <del>46</del> | 46° 20' 15" |                           | 300s |
| CC 2435 <del>31</del>        | "                      | "            | "                   | 02:03:46                |                       | 5h 12m               | 46° 20' 15" |                           | 330s |
| 55                           | Comp                   |              |                     |                         |                       |                      |             | FeAr<br>Clear             | 60s  |
| 56                           | Bias (4)               |              |                     |                         |                       |                      |             |                           |      |
| 57                           | <del>HD 886</del> Comp | 00h 08m 05m  | 14° 37' 40"         | 02:24:38                |                       |                      |             | FeAr<br>Clean             | 60s  |
| 58                           | HD 886                 | 00h 08m 05s  | 14° 37' 40"         | 02:27:50                |                       |                      | 15° 6' 6"N  |                           | 60s  |
| 59                           | "                      | "            | "                   | 02:30:04                |                       | 2h 19m E             | 15° 6' 3"N  |                           | 90s  |
| 60                           | "                      | "            | "                   | 02:32:19                |                       | 2h 17m E             | 15° 6' 3"N  |                           | 90s  |
| 61                           | Comp                   |              |                     | 02:35:29                |                       |                      |             | FeAr<br>Clean             | 60s  |
| 62                           | HD 886                 | 00h 08m 05s  | 14° 37' 40"         | 02:39:45                |                       | 2h 19m E             | 15° 6' 3"N  |                           | 90s  |
| 63                           | "                      | "            | "                   | 02:42:07                |                       | 2h 7m E              | 15° 6' 3"N  |                           | 90s  |
| 64                           | "                      | "            | "                   | 02:44:06                |                       | 2h 5m E              | 15° 6' 0"N  |                           | 90s  |
| 65                           | Comp                   |              |                     | 02:47:22                |                       |                      |             | FeAr<br>Clean             | 60s  |
| 68                           | HD 886                 | 00h 08m 05s  | 14° 37' 40"         | 02:51:16                |                       | 2h 58m E             | 15° 5' 54"N |                           | 80s  |
| 66                           | "                      | "            | "                   | 02:54:51                |                       | 1h 53m               | 15° 5' 54"N |                           | 90s  |
| 67                           | "                      | "            | "                   | 02:57:01                |                       | 1h 51m               | "           |                           | 90s  |

Spectr. Temp. -100.5  
Focus 61.82  
Spectr. Temp. Gain 90

Dome Temp./Hum. 18.9°/69.2  
Dome Temp./Hum. ....

Transparency Conditions clear w. few high clouds

| Exp. Mtr. | Seeing | Ptg. Mag.       | Sp.  | Inst.       | Grating/Tilt   | Slit             | Emulsion<br><i>lambda</i> | <del>Pf.</del> | Program | Remarks | Quality |
|-----------|--------|-----------------|------|-------------|----------------|------------------|---------------------------|----------------|---------|---------|---------|
| 8780      |        | 3.89            | B5IV | Cass<br>CCP | 1800<br>6=4446 | 300 <sub>u</sub> | 4298A                     | 18ci           | Hnd     |         |         |
| 10802     |        | 3.89            | B5IV | "           | "              | "                | "                         | 19ci           | "       |         |         |
| 4628      |        |                 |      | "           | "              | "                | "                         | 20ci           |         |         |         |
|           |        |                 |      | "           | "              | "                | "                         | 1              |         |         |         |
| 4502      |        | <del>3.89</del> | B2IV | "           | "              | "                | "                         | 21ci           |         |         |         |
| 6858      |        | 2.83            | B2IV | "           | "              | "                | "                         | 22ci           |         |         |         |
| 10610     |        | 2.83            | B2IV | "           | "              | "                | "                         | 23ci           |         |         |         |
| 10675     |        | 2.83            | B2IV | "           | "              | "                | "                         | 24ci           |         |         |         |
| 4651      |        |                 |      | "           | "              | "                | "                         | 25ci           |         |         |         |
| 10576     |        | 2.83            | B2IV | "           | "              | "                | "                         | 26ci           |         |         |         |
| 9828      |        | "               | "    | "           | "              | "                | "                         | 27ci           |         |         |         |
| 11186     |        | "               | "    | "           | "              | "                | "                         | 28ci           |         |         |         |
| 4609      |        |                 |      | "           | "              | "                | "                         | 29ci           |         |         |         |
| 10180     |        | 2.83            | B2IV | "           | "              | "                | "                         | 30ci           |         |         |         |
| 10590     |        | "               | "    | "           | "              | "                | "                         | 5ci            |         |         |         |
| 11170     |        | "               | "    | "           | "              | "                | "                         | 6ci            |         |         |         |



Date July 16/17 ..... Observers Hml/Ri/Smt .....

Emulsion Batches:

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| Plate No. | Object                 | R.A.<br>1900                                    | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End                | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|------------------------|---|---------------------|-------------------------|-----------------------|----------------------------------|-------------|---------------------------|------|
| CC2436    | Comp                   |   |                     | 3:01:30                 |                       |                                  |             | FeAr<br>Clear             | 60s  |
| CC2437    | BIAS(A)                |   |                     |                         |                       |                                  |             |                           |      |
| 71        | Comp                   |   |                     | 3:06:55                 |                       |                                  |             | FeAr<br>Clear             | 60s  |
| 72        | HD886                  | 00 <sup>h</sup> 08 <sup>m</sup> 05 <sup>s</sup> | 14°37'40"           | 3:11:67                 |                       | 1 <sup>h</sup> 40 <sup>m</sup> E | 15°5'51"    |                           | 80s  |
| 74        | "                      | "   | "                   | 3:13:30                 |                       | 1 <sup>h</sup> 36 <sup>m</sup> E | 15°5'51"    |                           | 93s  |
| 73        | "                      | "   | "                   | 3:15:18                 |                       | 1 <sup>h</sup> 33 <sup>m</sup> E | 15°5'51"    |                           | 90s  |
| 75        | Comp                   |   |                     | 3:20:24                 |                       |                                  |             | FeAr<br>Clear             | 60s  |
| 76        | HD886                  | 00 <sup>h</sup> 08 <sup>m</sup> 05 <sup>s</sup> | 14°37'40"           | 3:23:05                 |                       | 1 <sup>h</sup> 26 <sup>m</sup> E | 15°5'51"    |                           | 90s  |
| 77        | "                      | "   | "                   | 3:25:05                 |                       | 1 <sup>h</sup> 24 <sup>m</sup> E | 15°5'51"    |                           | 90s  |
| 78        | "                      | "   | "                   | 3:27:41                 |                       | 1 <sup>h</sup> 22 <sup>m</sup> E | 15°5'48"    |                           | 90s  |
| 79        | Comp                   |   |                     | 3:35:42                 |                       |                                  |             | FeAr<br>Clear             | 60s  |
| 80        | BIAS(A)                |   |                     |                         |                       |                                  |             |                           |      |
| 81        | <del>HD886</del> HD886 | 00 <sup>h</sup> 08 <sup>m</sup> 05 <sup>s</sup> | 14°37'40"           | 3:39:47                 |                       | 1 <sup>h</sup> 9 <sup>m</sup> E  | 15°5'48"    |                           | 90s  |
| 82        | "                      | "   | "                   | 3:41:50                 |                       | 1 <sup>h</sup> 7 <sup>m</sup> E  | 15°5'48"    |                           | 90s  |
| 83        | "                      | "   | "                   | 3:45:06                 |                       | 1 <sup>h</sup> 5 <sup>m</sup> E  | 15°5'48"    |                           | 120s |
| 84        | Comp                   |   |                     | 3:50:17                 |                       |                                  |             | FeAr<br>Clear             | 60s  |



Spectr. Temp.  $-100^{\circ}.5$  ..... Dome Temp./Hum. .... 18.4°C / 71.9% Transparency Conditions *Clear, few clouds* .....

Focus  $6.82$  .....

Spectr. Temp.  $Gain 9.0$  ..... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst.    | Grating/Tilt  | Slit        | Emission $\epsilon$ lambda | P.H. $\epsilon$ T | Program | Remarks | Quality |
|-----------|--------|-----------|------|----------|---------------|-------------|----------------------------|-------------------|---------|---------|---------|
| 4670      |        |           |      | Caas CCO | 1800<br>G=44% | 300 $\mu$ m | 4298 $\text{\AA}$          | 7ci               | Hml     |         |         |
|           |        |           |      | "        | "             | "           | "                          | 1                 | "       |         |         |
| 4775      |        |           |      | "        | "             | "           | "                          | 8ci               | "       |         |         |
| 10600     |        | 2.83      | B2IV | "        | "             | "           | "                          | 9ci               | "       |         |         |
| 12720     |        | "         | "    | "        | "             | "           | "                          | 10ci              | "       |         |         |
| 12220     |        | "         | "    | "        | "             | "           | "                          | 11ci              | "       |         |         |
| 4655      |        | "         | "    | "        | "             | "           | "                          | 12ci              | "       |         |         |
| 11980     |        | 2.83      | B2IV | "        | "             | "           | "                          | 13ci              | "       |         |         |
| 12530     |        | "         | "    | "        | "             | "           | "                          | 14ci              | "       |         |         |
| 11230     |        | "         | "    | "        | "             | "           | "                          | 15ci              | "       |         |         |
| 4681      |        |           |      | "        | "             | "           | "                          | 16ci              | "       |         |         |
|           |        |           |      |          |               |             |                            | 1                 | "       |         |         |
| 10190     |        | 2.83      | B2IV | "        | "             | "           | "                          | 17ci              | "       |         |         |
| 10425     |        | 2.83      | B2IV | "        | "             | "           | "                          | 18ci              | "       |         |         |
| 13280     |        | "         | "    | "        | "             | "           | "                          | 19ci              | "       |         |         |
| 4527      |        |           |      | "        | "             | "           | "                          | 20ci              | "       |         |         |



Spectr. Temp.  $-100.5^{\circ}$   
Focus  $6.82$   
Spectr. Temp.  $Gain 90$

Dome Temp./Hum.  $17.5^{\circ}/76.4\%$   
Dome Temp./Hum. ....

Transparency Conditions  $clear, few clouds$

| Exp. Mtr.             | Seeing | Ptg. Mag. | Sp. | Inst.    | Grating/Tilt   | Slit  | Emulsion | <del>P.T.</del> | Program | Remarks | Quality |
|-----------------------|--------|-----------|-----|----------|----------------|-------|----------|-----------------|---------|---------|---------|
| 101120                |        | 2.83      | BAT | CCD Cass | 1800<br>G=4446 | 300um |          | 21G             | Hnd     |         |         |
| 14170                 |        | "         | "   | "        | "              | "     |          | 22G             | "       |         |         |
| 16160                 |        | "         | "   | "        | "              | "     |          | 23G             | "       |         |         |
|                       |        |           |     | "        | "              | "     |          | 14G             |         |         |         |
|                       |        |           |     |          |                |       |          | 24G             |         |         |         |
| All to WORM + PERSEUS |        |           |     |          |                |       |          |                 |         |         |         |





CCD  
 Spectr. Temp.  $-104 \rightarrow -111^\circ$   
 Focus  $6.82 \rightarrow 6.77$   
 Spectr. Temp.  $sga.m$

Dome Temp./Hum.  $20.0^\circ\text{C}/69.2\%$  Transparency Conditions *partly cloudy*  
*increasing cloud.*  
 Dome Temp./Hum.

1984

| Exp. Mtr.              | Seeing | Pig. Mag.          | Sp. | Inst.                 | Grating/Tilt      | Slit | Emission | F.H. ci      | Program  | Remarks             | Quality |
|------------------------|--------|--------------------|-----|-----------------------|-------------------|------|----------|--------------|----------|---------------------|---------|
|                        |        |                    |     | CASS<br>CCD<br>DIRECT | 0/18°             |      | 8000 Å   |              |          | 500 500 256 256 1 1 |         |
|                        |        |                    |     |                       |                   |      | 3900 Å   |              |          |                     |         |
|                        |        |                    |     |                       |                   |      | 8464 Å   |              |          |                     |         |
|                        |        |                    |     | CASS<br>CCD           | 1800/<br>G = S115 |      | 5303 Å   | 1            |          |                     |         |
| 6885                   |        | <del>5.5 F70</del> |     |                       |                   |      |          | <del>1</del> |          |                     |         |
| 119                    |        | S.5 F70            |     |                       |                   |      |          | 3            | AsmSp/KK |                     |         |
| <del>119</del>         |        |                    |     |                       |                   |      |          | 2            |          |                     |         |
|                        |        |                    |     |                       |                   |      |          | 4            |          | clouded over        |         |
| ALL TO PERSEUS & WORM. |        |                    |     |                       |                   |      |          |              |          |                     |         |

Pg #1  
185

Date 1994 July 18/19 Observers KK/HW

Emulsion Batches:

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.....  
.....

| Plate No.  | Object   | R.A.                 | Declination           | Starting Time | Ending Time | Hour Angle | Declination | Comparison  |                 |
|------------|----------|----------------------|-----------------------|---------------|-------------|------------|-------------|-------------|-----------------|
|            |          | <del>1900-2000</del> | <del>1900-2000</del>  | E.S.T.        | E.S.T.      | End        |             | Type/Filter | Exp.            |
| cd00058-60 | Jupiter  |                      |                       | 21 11         |             |            |             |             | .2 s            |
| 61-63      | Jupiter  |                      |                       |               |             |            |             |             | .1 s            |
| 64-67      | Jupiter  |                      |                       |               |             |            |             |             | 1 s             |
| 68*        | Jupiter  | 1900                 | 1900:                 |               |             |            |             |             | 0.5 s           |
| 69-74      | HD8890B  | 01 22 36             | 88 46 06              | 22 05         |             |            |             |             | 0.1 s           |
| 75         | Bias (4) |                      |                       |               |             |            |             |             |                 |
| 76         | NGC 6720 | 18 53 36             | 33 03                 |               |             |            |             |             | 60 <sup>s</sup> |
| 77         | "        |                      | (2000)                |               |             |            |             |             | 60 <sup>s</sup> |
| 78         | "        |                      | "                     |               |             |            |             |             | 180             |
| 79         | NGC 6543 | 17 58 36             | 66 37 00              | 23:27         |             |            |             |             | 60              |
| 80         | "        |                      | (2000)                |               |             |            |             |             | 180             |
| 81         | "        |                      | "                     | 23 32 22      |             |            |             |             | 240             |
| 82         | "        |                      | "                     | 23 38 39      |             |            |             |             | 720             |
| 83         | Cas A    | 23 21 12             | <sup>1970</sup> 58 32 | 0 29 10       |             |            |             |             | 720             |
| 84         | Cas A    |                      | "                     |               |             |            |             |             | 360             |









Pg# 1  
189

Date July 19/20 1994 Observers Hlw./Smt./E.V.s.

Emulsion Batches:  
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.....  
.....

| Plate No.       | Object                  | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.  |
|-----------------|-------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| ce24418/9<br>20 | Comp/Stellar<br>Bias x4 | Hartman      | Mask Posn'          |                         |                       | 0:10 W            | +40°        | FeNe<br>Clear             | 20/3x |
| 21              | Comp                    |              |                     |                         |                       |                   |             | FeNe<br>Clear             | 20    |
| 22              | HD119850                | 13 40 36     | +15 27 00           | 21 00 39                |                       | 2:58 W            | +15°        |                           | 600s  |
| 23              | COMP                    |              |                     |                         |                       |                   |             | FeNe<br>Clear             | 20    |
| 24              | Comp                    |              |                     |                         |                       |                   |             |                           |       |
| 25              | AC+66 4437              | 14 40 33     | +66 28 51           | 21 27 37                |                       | 2:41 W            | +66°        |                           | 1331  |
| 26              | Comp                    |              |                     |                         |                       |                   |             | FeNe<br>Clear             | 20    |
| 27              | Bias x4                 |              |                     |                         |                       |                   |             |                           |       |
| 28              | Comp                    |              |                     |                         |                       |                   |             | FeNe<br>Clear             | 20    |
| 29              | AC+62 26749             | 17 34 30     | +61 45 00           | 21 59 39                |                       | 0:15 W            | +62°        |                           | 1095  |
| 30              | Comp                    |              |                     |                         |                       |                   |             | FeNe<br>Clear             | 20    |
| 31              | Comp                    |              |                     |                         |                       |                   |             | FeNe<br>Clear             | 20    |
| 32              | BD+68 946               | 17 36 56     | +68 24 47           | 22 29 47                |                       | 0:36 W            | +68°        |                           | 600   |
| 33              | Comp                    |              |                     |                         |                       |                   |             | FeNe<br>Clear             | 20    |

Spectr. Temp. .... Dome Temp./Hum.  $24.6^{\circ}\text{C}/54.5\%$  Transparency Conditions  $\overset{190}{\text{Some clouds on horizon}}$   
 Focus .....  $6.71$  ..... Dome Fans Off.  
 Spectr. Temp. .... Dome Temp./Hum. .... 480 0 50 1024 4 1 ccd/m<sup>2</sup>

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst.    | Grating/Tilt       | Slit      | Emulsion | P.H. | Program  | Remarks                       | Quality |
|-----------|--------|-----------|------|----------|--------------------|-----------|----------|------|----------|-------------------------------|---------|
|           |        |           |      | Ca55 CCD | 1800l/mm<br>G=5115 | 306 $\mu$ | 5303A    | 3/4  |          |                               |         |
|           |        |           |      |          |                    |           |          | 1    |          |                               |         |
|           |        |           |      |          |                    |           |          | 5    |          |                               |         |
| 446       |        | 8.48      | M1   |          |                    |           |          | 6    | Vys Std. |                               |         |
|           |        |           |      |          |                    |           |          | 7    |          |                               |         |
|           |        |           |      |          |                    |           |          | 8    |          |                               |         |
| 40        |        | 10.8      | M0   |          |                    |           |          | 9    | Vys Pgm. | Clouds approaching from South |         |
|           |        |           |      |          |                    |           |          | 10   |          |                               |         |
|           |        |           |      |          |                    |           |          | 11   |          |                               |         |
| 80        |        | 9.95      | M1Ve |          |                    |           |          | 12   | Vys Pgm  |                               |         |
|           |        |           |      |          |                    |           |          | 13   |          |                               |         |
|           |        |           |      |          |                    |           |          | 14   |          |                               |         |
| 143       |        | 9.15      | M5   |          |                    |           |          | 15   | Vys Pgm  |                               |         |
|           |        |           |      |          |                    |           |          | 16   |          |                               |         |





Spectr. Temp. .... Dome Temp./Hum.  $23.3^{\circ}/58.3\%$  Transparency Conditions  $\text{Thick clouds in S, }^{192}$   
 Focus .....  $6.71$  ..... thinner in N.  
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr.   | Seeing | Pig. Mag. | Sp. | Inst.            | Grating/Tilt                       | Slit          | Emulsion | P.H. | Program     | Remarks  | Quality |
|---|--------|-----------|-----|------------------|------------------------------------|---------------|----------|------|-------------|--|---------|
|   |        |           |     | Cass CCD         | 1800 $\lambda/\text{mm}$<br>G=5115 | 306 $\mu$     | 5303A    | 17   |             |  |         |
| 54  | 9.83   | M0        |     |                  |                                    |               |          | 18   | Vys Std.    | Getting cloudier                                   |         |
|   |        |           |     |                  |                                    |               |          | 19   |             |  |         |
|   |        |           |     |                  |                                    |               |          | 1    | bsum4.bat   |  |         |
|   | 6.65   | M2III     |     | Max intensities: | 236,                               | 179, 180, 222 |          |      | Seeing Test | Dome W, light E wind.                              |         |
| Note: Says<br>".067" in<br>header, this is wrong! | 6.65   | M2III     |     | Max intensities: | 196,                               | 195           |          |      | Seeing Test | thin clouds, star tracked<br>below 306 $\mu$ slit. |         |
| 0   | 12.0   | M0        |     |                  |                                    |               |          | 20   |             | → break for clouds.                                |         |
|   |        |           |     |                  |                                    |               |          | 21   | Vys Pgm     |  |         |
|   |        |           |     |                  |                                    |               |          | 22   |             |  |         |
|   |        |           |     |                  |                                    |               |          | 1    |             | Spectrograph Controller died.                      |         |
|   |        |           |     |                  |                                    |               |          | 23   |             |  |         |
| 86  | 8.66   | M2        |     |                  |                                    |               |          | 24   | Vys Std.    |  |         |
|   |        |           |     |                  |                                    |               |          | 25   |             | Totally clouded in                                 |         |
|   |        |           |     |                  |                                    |               |          | 26   |             | now.   |         |
| All to Perseus & WORMies                          |        |           |     |                  |                                    |               |          | 1    |             |  |         |

Pg#1  
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\* Thomas Callegari (Stepson)

Emulsion Batches:

Date 1994 Jul 20/21 Observers H/w  $\{Vys\}$ 

| Plate No.     | Object                          | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.  |
|---------------|---------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| cc24455/6     | Comp/stellar Hartman Mask Posn' |              |                     |                         |                       |                   |             | FeNe<br>Clear             | 20/30 |
| 57            | Bias * 4                        |              |                     |                         |                       |                   |             |                           |       |
| 58            | Comp                            |              |                     |                         |                       |                   |             | FeNe<br>Clear             | 20    |
| 59            | BD+45 2743                      | 18 32 26     | +45 39 53           | 22 22 05                |                       | 0:19 E            | +45°        |                           | 983   |
| 60            | Comp                            |              |                     |                         |                       |                   |             | FeNe<br>Clear             | 20    |
| 61            | Comp                            |              |                     |                         |                       |                   |             | FeNe<br>Clear             | 20    |
| 62            | AC+3 2528-176                   | 18 45 01     | +02 58 45           | 22 48 09                |                       | 0:07 W            | +3°         |                           | 1800  |
| 63            | Comp                            |              |                     |                         |                       |                   |             | FeNe<br>Clear             | 20    |
| 64            | Bias * 4                        |              |                     |                         |                       |                   |             |                           |       |
| cg40330-<br>3 | 4x<br>HD176844                  | 18 57 03     | +40 32 36           |                         |                       |                   |             |                           | .067  |
| cg40334/5     | 2x<br>HD176844                  | 18 57 03     | +40 32 36           |                         | 23 40                 |                   |             |                           | .133  |
| 65            | Comp                            |              |                     |                         |                       |                   |             | FeNe<br>Clear             | 20    |
| 66            | AC+8 147-294                    | 19 30 16     | +08 14 48           | 23 52 21                |                       | 0:14 W            | +8°         |                           | 1150  |
| 67            | <del>Bias * 4</del><br>Comp     |              |                     |                         |                       |                   |             | FeNe<br>Clear             | 20    |
| 68            | Bias * 4                        |              |                     |                         |                       |                   |             |                           |       |
| 69-74         | 6x Flats                        |              |                     |                         |                       |                   |             | Tung<br>1/2 Ap            | 4     |

Spectr. Temp. .... Dome Temp./Hum. 22.1°/90.2% Transparency Conditions Hazy, foggy ..... 194  
 Focus ..... 6.73 ..... Dome Fans ON. poor transparency.  
 Spectr. Temp. .... Dome Temp./Hum. 21.5°/92.6% 480 0 50 1024 4 1 ccdfmt.

| Exp. Mtr.                  | Seeing | Pig. Mag. | Sp.   | Inst.    | Grating/Tilt       | Slit | Emulsion | P.H. | Program     | Remarks                     | Quality |
|----------------------------|--------|-----------|-------|----------|--------------------|------|----------|------|-------------|-----------------------------|---------|
|                            |        |           |       | Cass CCD | 1800ℓ/mm<br>G=5115 | 306μ | 5303A    | 3/4  | FocusTest   |                             | good    |
|                            |        |           |       |          |                    |      |          | 1    | bsum4.bat   |                             |         |
|                            |        |           |       |          |                    |      |          | 5    |             |                             |         |
| 26                         |        | 9.83      | M0    |          |                    |      |          | 6    | Vys Stds    | Sp. Controller failed       |         |
|                            |        |           |       |          |                    |      |          | 7    |             | 95% Humidity on Catwalk     |         |
|                            |        |           |       |          |                    |      |          | 8    |             | @ 2250                      |         |
| 105                        |        | 10.7      | M2    |          |                    |      |          | 9    | Vys Pgm     | Much sky background         |         |
|                            |        |           |       |          |                    |      |          | 10   |             | ( <u>must</u> subtract it.) |         |
|                            |        |           |       |          |                    |      |          | ,    |             |                             |         |
|                            |        | 6.65      | M2III |          |                    |      |          |      | Seeing Test | Dome W, no wind.            |         |
| Note Headers<br>are wrong. |        | 8.65      | M2III |          |                    |      |          |      | Seeing Test | N fan ON                    |         |
|                            |        |           |       |          |                    |      |          | 11   |             |                             |         |
| 8                          |        | 10.4      | M0    |          |                    |      |          | 12   | Vys Pgm     |                             |         |
|                            |        |           |       |          |                    |      |          | 13   |             |                             |         |
|                            |        |           |       |          |                    |      |          | 1    |             |                             |         |
|                            |        |           |       |          |                    |      |          | 14   |             |                             |         |

ALL TO WORM AND  
Perseus







Date .. 1994... July 26/27 Observers .. [Bln] III / Hlw....

| Plate No. | Object  | R.A.<br>1900        | Declination<br>1900  | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.  |
|-----------|---|---------------------|----------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| a 24478/9 | Comp <del>Stellar</del> Hartman                               |                     |                      |                         |                       |                   |             |                           | 60/60 |
| 80        | Bias (4)  |                     |                      | 20:41                   |                       |                   |             |                           |       |
| 81        | Comp  |                     |                      |                         |                       |                   |             | FeAr<br>clear             | 60    |
| 82        | HD 145122   | 16 04 16            | +72 28 16            | 20 58 27                |                       |                   |             |                           | 678   |
| 83        | Comp  |                     |                      | 21 12 28                |                       |                   |             | FeAr<br>clear             | 60    |
| 84        | Comp  |                     |                      | 21 22 37                |                       |                   |             | FeAr<br>clear             | 60    |
| 85        | HD 145964   | 16 08 36            | -20 51 11            | 21 24 56                |                       |                   |             |                           | 909   |
| 86        | Comp  |                     |                      | 21 40 49                |                       |                   |             | FeAr<br>clear             | 60    |
| 87        | Bias (4)  |                     |                      | 21:42                   |                       |                   |             |                           |       |
| 88        | Comp  |                     |                      | 21:49:04                |                       |                   |             | FeAr<br>clear             | 60    |
| 89        | <del>SAO 102013</del> ? 17 23 10 (1955) 15 35 32<br>HD 157741 | <del>17 20 3</del>  | <del>+45 41 49</del> | 21:51:36                |                       |                   |             |                           | 1200  |
| 90        | Comp  |                     |                      | 22:13:23                |                       |                   |             | FeAr<br>clear             | 60    |
| 91        | Comp  |                     |                      | 22:30:21                |                       |                   |             | FeAr<br>clear             | 60    |
| 92        | <del>HD 179747</del><br><del>HD 179748</del>                  | <del>18 20 13</del> | <del>+05 09 46</del> | 22:35:26                |                       |                   |             |                           | 1800  |
| 93        | Comp  |                     |                      | 23:06:24                |                       |                   |             | FeAr<br>clear             | 60    |

Note:

Turned off clock drive at  
end of comp, causing tel  
LST to read wrong, causing  
next two misidentifications

Spectr. Temp. ... -100.0 C... Dome Temp./Hum. 18.6°/58.3% Transparency Conditions Clear

Focus ... 6.6.7... Dome focus off (Blue collimatn was out of focus + collimatn)

Spectr. Temp. ... cgsin = 9.0... Dome Temp./Hum. ... \*Note new ecd fnt + focus ecd fnt 432 050 1024 1

| Exp. Mtr.     | Seeing | Pris. Mag.  | Sp.        | Inst.    | Grating/Tilt        | Slit           | Emulsion | P.H. | Program                    | Remarks  | Quality |
|---------------|--------|-------------|------------|----------|---------------------|----------------|----------|------|----------------------------|--|---------|
| 3052/<br>3071 |        |             |            | Cass CCD | 1800 8/mm<br>G=6005 | 306            | 6604A    | 3/4  | Focus Test                 | DDO 74 encoders<br>pgm is not working tonight,<br>we're reading off big wheels.                                |         |
| 3227          |        |             |            |          |                     |                |          | 1    |                            |  |         |
| 3500          |        |             |            | ADV      | max ADU 7K          | ~275           | 1 S/N    | 6    | 3in Telluric<br>Std Search | T=18.4°C   |         |
|               |        |             |            |          |                     |                |          | 7    |                            |  |         |
|               |        |             |            |          |                     |                |          | 8    |                            |  | 18.2°   |
| 932           |        |             |            | ADV      | ~250:1 S/N          | MAX ADU 5K     |          | 9    | 3in Telluric<br>Std Search | NOTE: hot pixel<br>is now located at<br>column 23 (was<br>at column B prior to<br>collimatn adjustments)       | 18.0    |
| 2259          |        |             |            |          |                     |                |          | 10   |                            |  |         |
|               |        |             |            |          |                     |                |          | 1    |                            |  |         |
| 2199          |        |             |            |          |                     |                |          | 11   |                            |  |         |
| 296           |        | 7.9<br>6.35 | k 5<br>BAV |          | max ADU 3K          | S/N ~<br>180:1 |          | 9    | 3in Telluric<br>Std Search | NOTE: This is NOT<br>SPECTRA OF B9 BUT<br>RA + DEC SETTINGS OK<br>(+ NOTHING ELSE ANYWHERE<br>NEARBY IN FIELD) | 17.4    |
| 2425          |        |             |            |          |                     |                |          | 12   |                            |  | 17.2    |
|               |        |             |            |          |                     |                |          | 13   |                            |  |         |
| 667           |        | 6.74        | BAV        |          |                     |                |          | 14   | 3in Telluric<br>Std Search |  |         |
| 2223          |        |             |            |          |                     |                |          | 15   |                            | T=17.0°C   |         |

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Date 1994 Jul 26/27 Observers III/H/W [Bh]

Emulsion Batches:

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.....

| Plate No. | Object       | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.  |
|-----------|--------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| CC24494   | Bias (4)     |              |                     | 23:08                   |                       |                   |             |                           |       |
| 95        | Comp         |              |                     | 23:27:43                |                       |                   |             | FeAr<br>Clear             | 60    |
| 96        | HD171623     | 18 30 49     | +18 07 24           | 23 30 11                |                       |                   |             |                           | 600   |
| 97        | Comp         |              |                     | 23 42 05                |                       |                   |             | FeAr<br>Clear             | 60    |
| 98        | Comp         |              |                     | 23 47 22                |                       |                   |             | FeAr<br>Clear             | 60    |
| 99        | HD169578     | 18 20 13     | +5 01 46            | 23 49 44                |                       |                   |             |                           | 1789  |
| 500       | Comp         |              |                     | 00 20 32                |                       |                   |             | FeAr<br>clear             | 60    |
| 1         | Bias (4)     |              |                     | 00:22                   |                       |                   |             |                           |       |
| 2/3       | Comp/Stellar | Hartman      |                     |                         |                       |                   |             | FeAr<br>clear             | 60/60 |
| 4         | Comp         |              |                     | 00:48:22                |                       |                   |             | FeAr<br>clear             | 60    |
| 5         | HD 192 983   | 20 12 49     | 49 55 29            | 00:51:05                |                       |                   |             |                           | 650   |
| 6         | Comp         |              |                     | 01:02:57                |                       |                   |             | FeAr<br>clear             | 60    |
| 7         | Comp         |              |                     | 01:16:16                |                       |                   |             | FeAr<br>clear             | 60    |
| 8         | HD210419     | 22 05 09     | -4 23 03            | 01:19:07                |                       |                   |             |                           | 1000  |
| 9         | Comp         |              |                     | 01:37:21                |                       |                   |             | FeAr<br>clear             | 60    |



Spectr. Temp. .... Dome Temp./Hum. 17.0/62.2 Transparency Conditions Clear ..... 200  
 Focus ..... 6.67 .....  
 Spectr. Temp. .... Dome Temp./Hum. .... 432 0 50 1024 4 1 ccdFmt

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.   | Inst.    | Grating/Tilt    | Slit        | Emulsion | P.H. | Program                    | Remarks  | Quality               |
|-----------|--------|-----------|-------|----------|-----------------|-------------|----------|------|----------------------------|--|-----------------------|
|           |        |           |       | Cass CCD | 1800 L<br>G=60W | 306 $\mu$ m | 6604A    | 1    | bias 4. bat                | <div style="border: 1px solid black; padding: 5px;">           Note: hot pixel<br/>           is now at column 23,<br/>           so we are purposefully<br/>           guiding at high column # to<br/>           avoid it         </div> |                       |
| 2400      | 5.78   | A0Vn      | ~330i | S/N      |                 |             |          | 16   | Bin Telluric               |  |                       |
|           |        |           |       |          |                 |             |          | 17   | Std search                 |  |                       |
|           |        |           |       |          |                 |             |          | 18   |                            |  | ← H $\alpha$ emission |
|           |        |           |       |          |                 |             |          | 19   |                            |  |                       |
| 2500      | 6.74   | B9V       |       |          |                 |             |          | 20   | Bin Telluric<br>Std Search |  | 16.6°                 |
|           |        |           |       |          |                 |             |          | 21   |                            |  |                       |
|           |        |           |       |          |                 |             |          | 1    |                            |  |                       |
|           |        |           |       |          |                 |             |          | 3/4  |                            |  | 16.3°                 |
|           |        |           |       |          |                 |             |          | 22   |                            |  |                       |
| 2500      | 6.31   | A2Vn      |       |          |                 |             |          | 23   | Bin Telluric<br>Std Search |  |                       |
|           |        |           |       |          |                 |             |          | 24   |                            |  |                       |
|           |        |           |       |          |                 |             |          | 25   |                            |  |                       |
| 2500      | 6.27   | A1Vn      |       |          |                 |             |          | 26   | Bin Telluric<br>Std Search |  | 15.6°                 |
|           |        |           |       |          |                 |             |          | 27   |                            |  |                       |

201 page # 3

a Bill Hodges

Emulsion Batches:

Date . 1994. Jul. 26/27 Observers .. [B.H.] III / H.L.W.

| Plate No. | Object        | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|---------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce 24510  | Bias (4)      |              |                     | 01:39                   |                       |                   |             |                           |      |
| 11        | Comp          |              |                     | 02:00:59                |                       |                   |             | FeAr<br>Clear             | 60   |
| 12        | Nova Cas 93   | 23 36 59     | 56 57 45            | 02:08:33                |                       |                   |             |                           | 304  |
| 13        | Comp          |              |                     | 02:15:58                |                       |                   |             | FeAr<br>Clear             | 60   |
| 14        | Nova Cas 1993 | 23 36 59     | 56 57 45            | 02:18:05                |                       |                   |             |                           | 1897 |
| 15        | Comp          |              |                     | 02:50:45                |                       |                   |             | FeAr<br>Clear             | 60   |
| 16        | Bias (4)      |              |                     | 03:00                   |                       |                   |             |                           |      |
| 17        | Comp          |              |                     | 03:14:03                |                       |                   |             | FeAr<br>Clear             | 60   |
| 18        | HD 211211     | 22 10 32     | 42 27 28            | 03 16 58                |                       |                   |             |                           | 283  |
| 19        | Comp          |              |                     | 03:22:54                |                       |                   |             | FeAr<br>Clear             | 60   |
| 20        | Comp          |              |                     | 03 29 00                |                       |                   |             | FeAr<br>Clear             | 60   |
| 21        | HD 177724     | 19 00 49     | 43 42 53            | 03 30 52                |                       |                   |             |                           | 34   |
| 22        | Comp          |              |                     | 03 32 42                |                       |                   |             | FeAr<br>Clear             | 60   |
| 23        | Comp          |              |                     | 03 40 44                |                       |                   |             | FeAr<br>Clear             | 60   |
| 24        | HD 222847     | 23 39 01     | -18 49 55           | 03:45:09                |                       |                   |             |                           | 393  |







Spectr. Temp. .... Dome Temp./Hum. 15.3°/66.1% Transparency Conditions ..... Clear ..... 204

Focus ..... 6.73 .....

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | V-Prism<br>Mag. | Sp. | Inst. | Grating/<br>Tilt    | Slit | Emulsion | P.H. | Program                     | Remarks                                    | Quality |
|-----------|--------|-----------------|-----|-------|---------------------|------|----------|------|-----------------------------|--|---------|
|           |        |                 |     |       |                     |      |          | 15   |                             |  |         |
|           |        |                 |     |       |                     |      |          | 16   | Bin Telluric<br>Std, Search |  | 15.3°   |
| 2500      |        | 6.65            | BBV |       |                     |      |          | 17   | ↓                           | local star contribution<br>to spectra (42) | 15.2°   |
|           |        |                 |     |       |                     |      |          | 18   |                             |  |         |
|           |        |                 |     |       |                     |      |          | 1    |                             |  |         |
|           |        |                 |     |       |                     |      |          | 19   |                             |  |         |
|           |        |                 |     |       | 1<br>ε Perseus<br>1 |      |          | 3/4  | Focus Test                  |  | 14.0°   |

All to WORM









Spectr. Temp. .... Dome Temp./Hum.  $20.8^{\circ} / 59.9\%$  Transparency Conditions *some scattered thin clouds* <sup>208</sup>  
 Focus  $255 / 250$   
 Spectr. Temp. .... Dome Temp./Hum. .... *increasing cloud from south*

| Exp. Mtr. | Seeing | $\sqrt{\text{Mag.}}$ | Sp. | Inst.          | Grating/<br>Tilt           | Slit                           | Emulsion          | P.H. | Program       | Remarks  | Quality |
|-----------|--------|----------------------|-----|----------------|----------------------------|--------------------------------|-------------------|------|---------------|--|---------|
|           |        |                      |     | Echelle<br>CCD | 300 $\lambda$ /mm<br>17.0  | 60 $\mu$<br>$\times 400$       | 6483 $\text{\AA}$ | 3/4  | Focus Test    | Requested region = 6707 $\text{\AA}$<br>but some very bright<br>lines to the red caused us<br>to centre at 6483 $\text{\AA}$ . 6707<br>order is well on chip though. | good    |
|           |        |                      |     |                | $\times \text{gr} = .5550$ |                                | $\lambda = .225$  | 1    | 5             |  |         |
| 487       | 3"     | 3.66                 | FOp |                |                            |                                |                   | 6    | KK pgm        | $< 200 / 1$ S/N @ H $\alpha$   |         |
|           |        |                      |     |                |                            |                                |                   | 5    |               |  |         |
| 18        |        | 3.66                 | FOp |                |                            |                                |                   | 6    | KK pgm        | Through lots of cloud.   |         |
|           |        |                      |     |                |                            |                                |                   | 5    |               |  |         |
|           |        |                      |     |                |                            |                                |                   | 5    |               |  |         |
| 1         |        | 2.99                 | ADU |                |                            |                                |                   | 6    | Telluric std. | Lots of cloud.   |         |
|           |        |                      |     |                |                            |                                |                   | 5    |               |  |         |
|           |        |                      |     |                |                            |                                |                   | 1    |               |  |         |
|           |        |                      |     |                |                            | 60 $\mu$ $\times$<br>500 $\mu$ |                   | 3    |               | Max ADU 12.6 K   |         |
|           |        |                      |     |                |                            |                                |                   | 1    |               |  |         |
|           |        |                      |     |                | 300 $\lambda$ /mm<br>19.20 | 60 $\mu$ $\times$<br>400 $\mu$ | 6300 $\text{\AA}$ | 3/4  | Focus Test    |  |         |
|           |        |                      |     |                | $\times = 5630$            |                                | $\lambda = .225$  |      |               |  |         |



Spectr. Temp. <sup>CD</sup> -110.0°C ..... Dome Temp./Hum. 19.4°C/67.5% Transparency Conditions *clearish* .....  
 Focus ..... 2.50 .....  
 Spectr. Temp. .... Dome Temp./Hum. .... *Then Rapid Clouding in.*

| Exp. Mtr.                              | Seeing | Pig. Mag. | Sp. | Inst.          | Grating/Tilt                              | Slit                    | Emulsion   | P.H. $\frac{C}{i}$ | Program | Remarks               | Quality |
|--|--------|-----------|-----|----------------|---|-------------------------|------------|--------------------|---------|-----------------------|---------|
|  |        |           |     | Echelle<br>CCD | 300 $\mu$ /mm<br>19.20<br>$\kappa = 5630$ | 60 $\mu$ x<br>400 $\mu$ | 6300 $\mu$ | 5                  |         |                       |         |
| <i>Exp meter<br/>DARK<br/>SLIDE in</i> | 2.3"   | 2         | F   |                |   |                         |            | 6                  | KK Pgm  | PART cloudy           |         |
|  |        |           |     |                |   |                         |            | 5                  |         | $\sim 12.6K$ max adu. |         |
|  |        | 2         | F   |                |   |                         |            | 6                  | KK Pgm  | $\sim 11K$ max adu.   |         |
|  |        | 2         | F   |                |   |                         |            |                    |         | $\sim 7.7K$ max adu   |         |
|  |        |           |     |                |   | 60 $\mu$ x<br>500 $\mu$ |            | 1                  |         |                       |         |
|  |        |           |     |                |   |                         |            | 1                  |         |                       |         |
| <p> </p>                               |        |           |     |                |   |                         |            |                    |         |                       |         |

2<sup>nd</sup> pg #1

## Jason's Last Night

Emulsion Batches:

Sat / Sun

Date 1994 July 30/31.....

Observers [L.H.]. J.n./H.L./S.Mt....

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| Plate No.     | Object    | R.A.     |           | Starting Time | Ending Time | Hour Angle | Declination | Comparison  |      |
|---------------|-----------|----------|-----------|---------------|-------------|------------|-------------|-------------|------|
|               |           | 1900     | 1900      |               |             |            |             | Type/Filter | Exp. |
| cc07524<br>28 | FLATS x 5 |          |           |               |             | 00 08 E    | +46°        |             | 1.5s |
| 29            | BIAS (4)  |          |           |               |             |            |             |             |      |
| 30            | Comp      |          |           |               |             |            |             | Tb Ar       | 2s   |
| 31            | HD 8890   | 01 22 36 | +88 46    | 20 15 41      |             | 10 02 E    | +89 14      |             | 185  |
| 32            | Comp      |          |           |               |             |            |             |             | 2s   |
| 33            | HD 8890   |          |           | 20 21 21      |             |            |             |             | 200  |
| 34            | Comp      |          |           |               |             |            |             |             | 2    |
| 35            | HD 8890   |          |           | 20 26 10      |             |            |             |             | 216  |
| 36            | Comp      |          |           |               |             |            |             |             | 2    |
| 37            | BIAS (4)  |          |           |               |             | 02 55 W    | +64°        | Tel Reverse |      |
| 38            | Comp      |          |           |               |             |            |             |             |      |
| 39            | HD 123999 | 14 01 41 | +64 51 14 | 20 47 28      |             | 03 06 W    | +64°        |             | 335s |
| 40            | COMP      |          |           |               |             |            |             | Tb Ar       | 2s   |
| 41            | HD 123999 |          |           | 20 55 41      |             | 03 24 W    | +64°        |             | 938s |
| 42            | COMP      |          |           |               |             |            |             | Tb Ar       | 2s   |



Spectr. Temp. .... Dome Temp./Hum. +21.2°C... 74.9% H Transparency Conditions *Part cloudy* .....

Focus ..... *250* ..... Both Fans ON, then SE turned off

Spectr. Temp. .... Dome Temp./Hum. .... *c Lambda* 0 0 256 1024 4 1 CCDfmt

| Exp. Mtr.         | Seeing | Ptg. Mag. | Sp. | Inst.            | Grating/Tilt     | Slit                  | Emulsion | P.H. | Program | Remarks   | Quality |
|-------------------|--------|-----------|-----|------------------|------------------|-----------------------|----------|------|---------|---|---------|
| using 100 f scale |        |           |     | Echelle<br>19.20 | x 300/mm<br>5630 | 60um<br>500um #       | 6300A    |      |         |   |         |
|                   |        |           |     |                  |                  |                       |          | 1ci  |         |   |         |
|                   |        |           |     |                  |                  | 60um<br>400um Micr pt |          | 3ci  |         |   |         |
| 185               | 2.3"   | 2         | F   |                  |                  |                       |          | 4ci  | kk ppm  | 9.7K ADU max<br>(Teluric vel ppm)                                     |         |
| "                 |        |           |     |                  |                  |                       |          | 3ci  |         |   |         |
| 200               |        |           |     |                  |                  |                       |          | 4ci  |         | 10.4K ADU max   |         |
| 185               |        |           |     |                  |                  |                       |          |      |         |   |         |
|                   |        |           |     |                  |                  |                       |          | 1ci  |         | regular vertical bars<br>like a noise pattern                         |         |
|                   |        |           |     |                  |                  |                       |          | 3ci  |         | Tel East Side<br>But not far from<br>previous polaris posn            |         |
| 200               |        | 3.65      | A03 |                  |                  |                       |          |      |         |   |         |
| 600               |        |           |     |                  |                  |                       |          |      |         | ~ max adu 7.8K<br>A few saturated points for<br>2 sec comp - changed. |         |

Pg #2  
213

Emulsion Batches:

Date July 30./3.1..... Observers [L.H.] T.M./H.L.W./S.M.S.

| Plate No. | Object   | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison  |       |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------|-------|
|           |          |              |                     |                         |                       |                   |             | Type/Filter | Exp.  |
| cc07343   | COMP     |              |                     |                         |                       |                   |             | ThAr        | 1s    |
| 44        | HD187691 | 19 46 12     | +10 10 00           | 21 31 08                |                       | 01 38 E           |             |             | 1350s |
| 45        | COMP     |              |                     |                         |                       |                   |             | ThAr        | 1s    |
| 46        | HD187691 |              |                     | 21 56 52                |                       | 01 14 E           |             |             | 1341s |
| 47        | COMP     |              |                     |                         |                       |                   |             | ThAr        | 1s    |
| 48        | BIAS(4)  |              |                     |                         |                       |                   |             |             |       |
| 49        | COMP     |              |                     |                         |                       |                   |             | ThAr        | 1s    |
| 50        | HD177724 | 19 00 49     | +13 42 53           | 22 28 02                |                       |                   |             |             | 400   |
| 51        | Comp     |              |                     |                         |                       |                   |             | ThAr        | 1     |
| 52        | HD177724 | 19 00 49     | +13 42 53           | 22 38 10                |                       | 0:05 W            | +14°        |             | 897   |
| 53        | Comp     |              |                     |                         |                       |                   |             | ThAr        | 1     |
| 54        | COMP     |              |                     |                         |                       |                   |             | ThAr        | 1     |
| 55        | HD175492 | 18 50 32     | +22 31 06           | 22 59 15                |                       | 00:48 W           |             |             | 1600  |
| 56        | Comp     |              |                     |                         |                       |                   |             | ThAr        | 1     |
| 57        | HD175492 | 18 50 32     | +22 31 06           | 23 29 08                |                       | 1:20 W            |             |             | 1710  |
| 58        | COMP     |              |                     |                         |                       |                   |             | ThAr        | 1     |

<sup>CCD</sup>  
 Spectr. Temp.  $-100.50$  ..... Dome Temp./Hum.  $20.5^{\circ}\text{C}/71.2\%$  Transparency Conditions  $\text{hazy}$  .....  
 Focus  $250$  .....  
 Spectr. Temp. .... Dome Temp./Hum.  $19.7^{\circ}\text{C} 80.0\%$

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.        | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program           | Remarks   | Quality |
|-----------|--------|-----------|------------|-------|--------------|------|----------|------|-------------------|---|---------|
|           |        |           |            |       |              |      | 6300A    |      |                   | exposure time for comp changed to 1 sec to avoid saturation |         |
| 30        |        | 5.10      | F8V        |       |              |      |          | 6 ci | KK pgm<br>std vel | and adm ~ 2K  |         |
| 21        |        |           |            |       |              |      |          | 6 ci | KK pgm            |   |         |
|           |        |           |            |       |              |      |          | 3 ci |                   |   |         |
| 340       |        | 2.99      | A0IV       |       |              |      |          | 4    | Telluric Std.     |   |         |
|           |        |           |            |       |              |      |          | 3    |                   |   |         |
| 700       |        | 2.99      | A0IV       |       |              |      |          | 4    | Telluric Std.     |   |         |
|           |        |           |            |       |              |      |          | 3    |                   |   |         |
|           |        |           |            |       |              |      |          | 3    |                   |   |         |
| 262       | 1.2"   | 4.59      | G4III+ABV  |       |              |      |          | 5    | KK pgm            | MA X 2 6500 ADU   |         |
|           |        |           |            |       |              |      |          | 3    |                   |   |         |
| 267       |        | 4.59      | G4 III+ABV |       |              |      |          | 5    | KK pgm            |   |         |
|           |        |           |            |       |              |      |          | 3    |                   |   |         |



25  
pg #3

Date 1994 Jul 30/31 Observers [KK] Tn/Hlw/Smt

Emulsion Batches:

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| Plate No. | Object   | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison  |                 |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------|-----------------|
|           |          |              |                     |                         |                       |                   |             | Type/Filter | Exp.            |
| ce07559   | Bias (4) |              |                     |                         |                       |                   |             |             |                 |
| 60        | COMP     |              |                     |                         |                       |                   |             | ThAr        | 1s              |
| 61        | HD161096 | 17 38 30     | +04 37 00           | 00 05 37                |                       | 250 W             |             |             | 600s            |
| 62        | COMP     |              |                     |                         |                       | Z                 |             | ThAr        | <del>200s</del> |
| 63        | COMP     |              |                     |                         |                       |                   |             | ThAr        | 1s              |
| 64        | HD 8890  | 01 22 36     | 88 46               | 00 24 44                |                       | 5 55 E            | +89°        |             | 200s            |
| 65        | Comp     |              |                     |                         |                       |                   |             | ThAr        | 1s              |
| 66        | HD 8890  |              |                     | 00 29 33                |                       | 5 48 E            | +89°        |             | 296s            |
| 67        | COMP     |              |                     |                         |                       |                   |             | ThAr        | 1s              |
| 68        | HD 8890  |              |                     | 00 36 50                |                       | 5 37 E            | +89°        |             | 492s            |
| 69        | COMP     |              |                     |                         |                       |                   |             | ThAr        | 1s              |
| 70        | Comp     |              |                     |                         |                       |                   |             | ThAr        | 1s              |
| 71        | HD185734 | 19 35 26     | +29 55 22           | 00 56 24                |                       | 2:05 W            |             |             | 1585            |
| 72        | Comp     |              |                     |                         |                       |                   |             | ThAr        | 1               |
| 73        | HD185734 | 19 35 26     | +29 55 22           | 01 24 26                |                       | 2:23 W            |             |             | 1255            |
| 74        | Comp     |              |                     |                         |                       |                   |             | ThAr        | 1               |



Spectr. Temp. .... Dome Temp./Hum. 19.3°/81.37° Transparency Conditions . *Mag* .....

Focus ..... 250 .....

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr.      | Seeing       | Ptg. Mag.       | Sp.              | Inst.          | Grating/Tilt                                    | Slit                  | Emulsion | P.H. | Program | Remarks                   | Quality |
|----------------|--------------|-----------------|------------------|----------------|---|-----------------------|----------|------|---------|---------------------------|---------|
|                |              |                 |                  | Echelle<br>CCD | 300 $\lambda$ /mm<br>19.20<br>$\lambda = .5630$ | 60 $\mu$<br>400 $\mu$ | 6300A    | 1    |         |                           |         |
| 194            |              | 2.77            | K2III            |                |   |                       |          |      |         | bid. vel.                 |         |
| <del>194</del> |              | <del>2.77</del> | <del>K2III</del> |                |   |                       |          |      |         |                           |         |
|                |              |                 |                  |                |   |                       |          | 3    |         |                           |         |
|                | 2 $^{\circ}$ | 2               | F                |                |   |                       |          | 6    | KK pgm  | max ~ <del>10K</del> adv. |         |
|                |              |                 |                  |                |   |                       |          | 3    |         |                           |         |
| 213            |              |                 |                  |                |   |                       |          | 6    | KK pgm  |                           |         |
|                |              |                 |                  |                |   |                       |          | 3    |         |                           |         |
| 215            |              |                 |                  |                |   |                       |          | 6    | KK pgm  | max ~ 10K adv.            |         |
|                |              |                 |                  |                |   |                       |          | 3    |         |                           |         |
|                |              |                 |                  |                |   |                       |          | 3    |         |                           |         |
| 216            |              | 4.69            | G8 III-IV        |                |   |                       |          | 4    | KK pgm  |                           |         |
|                |              |                 |                  |                |   |                       |          | 3    |         |                           |         |
| 166            |              | 4.69            | G8 III-IV        |                |   |                       |          | 4    | KK pgm  |                           |         |

27 pg #4

Emulsion Batches:

Date 1994 Jul 30/31

Observers [KK] T<sub>n</sub>/H/w/Smt

| Plate No. | Object   | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison  |      |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------|------|
|           |          |              |                     |                         |                       |                   |             | Type/Filter | Exp. |
| ce07575   | Bias (4) |              |                     |                         |                       |                   |             |             |      |
| 76        | Comp     |              |                     |                         |                       |                   |             | ThAr        | 1    |
| 77        | HD196524 | 20 32 52     | +14 15 00           | 01 50 19                |                       | 1:45 W            | +14°        |             | 880  |
| 78        | Comp     |              |                     |                         |                       |                   |             | ThAr        | 1    |
| 79        | HD196524 | 20 32 52     | +14 15 00           | 02 08 01                |                       | 2:02 W            | +14°        |             | 880  |
| 80        | Comp     |              |                     |                         |                       |                   |             | ThAr        | 1    |
| 81        | Comp     |              |                     |                         |                       |                   |             | ThAr        | 1    |
| 82        | HD215182 | 22 38 18     | +29 42 00           | 02 27 54                |                       | 0:09 W            | +30°        |             | 400  |
| 83        | Comp     |              |                     |                         |                       |                   |             | ThAr        | 1    |
| 84        | HD215182 | 22 38 18     | +29 42 00           | 02 36 25                |                       | 0:18 W            | +30°        |             | 433  |
| 85        | COMP     |              |                     |                         |                       |                   |             | ThAr        | 1    |
| 86        | BIAS(4)  |              |                     |                         |                       |                   |             |             |      |
| 87        | Comp     |              |                     |                         |                       |                   |             | ThAr        | 1    |
| 88        | HD6582   | 01 01 36     | +54 26 00           | 03 02 01                |                       | 01:22 E           |             |             | 1576 |
| 89        | Comp     |              |                     |                         |                       |                   |             | ThAr        | 1    |

Spectr. Temp. .... Dome Temp./Hum. <sup>+18.5°/85.3%</sup> Transparency Conditions ... Hazy, Humid ..... 218

Focus ..... 250 .....

Spectr. Temp. .... Dome Temp./Hum. ....

NE Dome Fan ON

| Exp. Mtr. | Seeing | Obj. Mag.       | Sp.               | Inst.            | Grating/Tilt       | Slit        | Emulsion | P.H. | Program | Remarks   | Quality |
|-----------|--------|-----------------|-------------------|------------------|--------------------|-------------|----------|------|---------|---|---------|
|           |        |                 |                   | Echelle<br>19.20 | x 3002/m<br>= 5630 | 60µ<br>400µ | 6300A    | 1    |         |   |         |
|           |        | <del>3.78</del> |                   |                  |                    |             |          | 3    |         |   |         |
| 345       |        | 3.78            | F5 IV             |                  |                    |             |          | 5    | KK pgm  |   |         |
|           |        |                 |                   |                  |                    |             |          | 3    |         |   |         |
| 283       | 2"     | 3.78            | F5 IV             |                  |                    |             |          | 5    | KK pgm  | 4700 ADU max<br>93% Humidity on Catwalk<br>@ 0215 |         |
|           |        |                 |                   |                  |                    |             |          | 3    |         |   |         |
|           |        |                 |                   |                  |                    |             |          | 3    |         |   |         |
| 415       |        | 2.9             | G8 II? - F?       |                  |                    |             |          | 6    | KK pgm  |   |         |
|           |        |                 |                   |                  |                    |             |          | 3    |         |   |         |
| 354       |        | 2.9             | G8 II? - F?       |                  |                    |             |          | 6    | KK pgm  |   |         |
|           |        |                 |                   |                  |                    |             |          | 3    |         |   |         |
|           |        |                 |                   |                  |                    |             |          | 1    |         |   |         |
|           |        |                 |                   |                  |                    |             |          | 3    |         |   |         |
| 60        | 1.2"   | 5.12            | G5 V <sub>p</sub> |                  |                    |             |          | 4    | KK pgm  | 3400 ADU max                                      |         |
|           |        |                 |                   |                  |                    |             |          | 3    |         |   |         |









<sup>CCD</sup>  
 Spectr. Temp.  $-100^{\circ}$  ..... Dome Temp./Hum.  $21.3^{\circ}\text{C}/81.4\%$  Transparency Conditions *foggy / hazy* ..... 222  
 Focus .....  $250$  .....  
 Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.                 | Grating/<br>Tilt                  | Slit                     | Emulsion | P.H. | Program     | Remarks                     | Quality |
|-----------|--------|-----------|-----|-----------------------|-----------------------------------|--------------------------|----------|------|-------------|-----------------------------|---------|
|           |        |           |     | ECCHELLE CCD<br>19.20 | $\times 3000\text{mm}$<br>0 56 30 | 60c width<br>400c height | 6300F    | 1/2  |             | CCD FMT<br>0 0 128 1024 8 1 |         |
|           |        |           |     |                       |                                   |                          |          | 1    |             | 0 0 256 1024 4 1            |         |
|           |        |           |     |                       |                                   |                          |          | 3    |             |                             |         |
| 270       |        | 2         | F   |                       |                                   |                          |          | 4    | KK pgm      | max adu ~ 5K                |         |
|           |        |           |     |                       |                                   |                          |          | 3    |             |                             |         |
| 420       | 2.3"   | 2         | F   |                       |                                   |                          |          | 4    | KK pgm      | 15.8k max                   |         |
|           |        |           |     |                       |                                   |                          |          | 3    |             |                             |         |
| 210       |        | 2         | F   |                       |                                   |                          |          | 4    | KK pgm      | max adu ~ 12K               |         |
|           |        |           |     |                       |                                   |                          |          | 3    |             |                             |         |
|           |        |           |     |                       |                                   |                          |          | 1    |             |                             |         |
|           |        |           |     |                       |                                   |                          |          | 3    |             |                             |         |
| 48        | 2"     | 5.10      | F8V |                       |                                   |                          |          | 4    | KE Std Vel. | 1700 ADU max                |         |
|           |        |           |     |                       |                                   |                          |          | 3    |             |                             |         |
| 52        |        |           |     |                       |                                   |                          |          | 4    | KE Std Vel. | 1700 ADU max                |         |
|           |        |           |     |                       |                                   |                          |          | 3    |             |                             |         |



223'  
p942

Emulsion Batches:

Date 1994 July 31 / Aug 1. Observers [H.K.] J.N. / Smt.....

| Plate No.          | Object   | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End    | Declination | Comparison  |      |
|--------------------|----------|--------------|---------------------|-------------------------|-----------------------|----------------------|-------------|-------------|------|
|                    |          |              |                     |                         |                       |                      |             | Type/Filter | Exp. |
| <del>CE07639</del> | COMP     |              |                     |                         |                       |                      |             | ThAr        | 1    |
| 40                 | HD137909 | 15 2342      | +29 27              | 21 50 08                |                       | 3 00 W               |             |             | 1000 |
| 41                 | Comp     |              |                     |                         |                       |                      |             | ThAr        | 1    |
| 42                 | HD137909 |              |                     | 22 09 40                |                       | 3 24 W               |             |             | 1300 |
| 43                 | COMP     |              |                     |                         |                       |                      |             | ThAr        | 1    |
| 44                 | BIAS(4)  |              |                     |                         |                       | 3 27 W <del>29</del> |             |             |      |
| <del>45-49</del>   | 5x FLAT  |              |                     |                         |                       | 3 30 W +29           |             | Tung        | 2    |
| ce07650            | Comp     |              |                     |                         |                       |                      |             | ThAr        | 1s   |
| 51                 | HD137909 | 15 2342      | +29 27              | 22 57 26                |                       | 4 12 W               |             |             | 1299 |
| 52                 | Comp     |              |                     |                         |                       |                      |             | ThAr        | 1s   |
| 53                 | HD137909 |              |                     | 23 21 19                |                       | 4 36 W               |             |             | 1300 |
| 54                 | COMP     |              |                     |                         |                       |                      |             | ThAr        | 1s   |
| 55                 | COMP     |              |                     |                         |                       |                      |             | ThAr        | 1s   |
| 56                 | HD177724 | 19 00 49     | +13 42 53           | 23 49 10                |                       | 1 14 W               |             |             | 540s |
| 57                 | COMP     |              |                     |                         |                       |                      |             | ThAr        | 1s   |



CCD  
 Spectr. Temp. -100.5°C ..... Dome Temp./Hum. +21.3°C 78%  
 Focus ..... 250 .....  
 Spectr. Temp. .... Dome Temp./Hum. +20.5°C 80%

Transparency Conditions ... very hazy .....

| Exp. Mtr. | Seeing | Mag. | Sp. | Inst.            | X Grating/<br>Tilt | Slit                      | Emulsion | P.H. | Program   | Remarks  | Quality |
|-----------|--------|------|-----|------------------|--------------------|---------------------------|----------|------|-----------|--|---------|
|           |        |      |     | echelle<br>19.20 | 300 l/mm<br>.5630  | 60 $\mu$ W<br>400 $\mu$ H | 6300A    | 3c   |           |  |         |
| 249       | 2"     | 366  | Fop |                  |                    |                           |          | 5cc  | kk pgm    | 4.000 ADU MAX<br>1.225 AIRMASS   |         |
| 530       |        |      |     |                  |                    |                           |          | 3c   |           |  |         |
|           |        |      |     |                  |                    |                           |          | 5ci  | KK pgm    | 1.289 airmass<br>6.000 ADU MAX   |         |
|           |        |      |     |                  |                    |                           |          | 3c   |           |  |         |
|           |        |      |     |                  |                    |                           |          | 1c   |           |  |         |
|           |        |      |     |                  |                    |                           |          | 6c   |           | max adu ~ 14K - 14.5K  |         |
|           |        |      |     | echelle<br>18.9  | 300 l/mm<br>.5650  | 60 $\mu$<br>400 $\mu$ H   | 6480A    | 7c   |           | ONLY 300 $\mu$ ERS Red of the 6300A previous Region<br>OTHER side of Blaze from July 29/30<br>- OBSERVATIONS |         |
| 507       | 2"     | 366  | Fop |                  |                    |                           |          | 4ci  | kk pgm    | 1.50 AIRMASS. ~ 5K adu.  |         |
|           |        |      |     |                  |                    |                           |          | 6c   |           |  |         |
| 290       |        | 366  | Fop |                  |                    |                           |          | 4ci  | KK pgm    | 1.63 AIRMASS<br>5K ADU max   |         |
|           |        |      |     |                  |                    |                           |          | 6    |           |  |         |
|           |        |      |     |                  |                    |                           |          | 6    |           |  |         |
| 524       |        | 2.99 | AOV |                  |                    |                           |          | 4    | Tel. Std. | 1.19 AIRMASS<br>~ 0.5K max adu.  |         |
|           |        |      |     |                  |                    |                           |          | 6    |           |  |         |



Spectr. Temp.  $-100.5^{\circ}\text{C}$  ..... Dome Temp./Hum.  $20.5^{\circ}\text{C}/74.6\%$  Transparency Conditions *hozy* ..... 226

Focus  $\cdot 250$  .....

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr.      | Seeing | Mag.  | Sp.    | Inst.                | Grating/<br>Tilt                        | Slit   | Emission<br>CX    | P.H.<br>C1      | Program           | Remarks                        | Quality |
|----------------|--------|-------|--------|----------------------|---|--|-------------------|-----------------|-------------------|--------------------------------|---------|
|                |        |       |        | ECHELLE CCO<br>18.90 | 300 $\lambda/\text{mm}$<br>$\cdot 5550$ | 60 $\mu\text{W}$<br>400 $\mu\text{H}$          | 6480 $\text{\AA}$ | 6               |                   |                                |         |
| 109            | 5.10   | F8 II |        |                      |   |  |                   | 4               | KK Std. Vel.      | 1.21 AIRMASS<br>3.5 K max adu. |         |
|                |        |       |        |                      |   |  |                   | 6               |                   |                                |         |
|                |        |       |        |                      |   |  |                   | 1               |                   |                                |         |
|                |        |       |        |                      |   | 60 $\mu\text{W}$<br>500 $\mu\text{H}$          | For FLATS.        |                 |                   | MAX = 12.8 K ADU               |         |
|                |        |       |        | ECHELLE<br>19.2      | 300 $\lambda/\text{mm}$<br>$\cdot 5630$ | 60 $\mu\text{W}$<br>400 $\mu\text{H}$<br>".225 | 6300 $\text{\AA}$ | 7               |                   |                                |         |
| 612            | 3"     | 3.23  | B75 II |                      |   |  |                   | 4               | KK pgn            | max = ~8 K adu                 |         |
|                |        |       |        |                      |   |  |                   | 7               |                   |                                |         |
| 430            |        |       |        |                      |   |  |                   | 4               | KK pgn.           |                                |         |
|                |        |       |        |                      |   |  |                   | 7 <sub>C1</sub> |                   |                                |         |
|                |        |       |        |                      |   |  |                   | 3               |                   |                                |         |
| 417            | 2      | F     |        |                      |   |  |                   | 5               | KK Pgn            | max = ~5.3 K adu.              |         |
|                |        |       |        |                      |   |  |                   | 3               |                   |                                |         |
| 775            |        |       |        |                      |   |  |                   | 5               | KK Pgn!           |                                |         |
| <del>775</del> |        |       |        |                      |   |  |                   | 3               | <del>KK Pgn</del> | max = ~14.0 K adu.             |         |



227 pg #4

Emulsion Batches:

Date July 31, Aug 1 Observers [KK]/Th/Smt.....

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 .....  
 .....

| Plate No.               | Object                      | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison  |       |
|-------------------------|-----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------|-------|
|                         |                             |              |                     |                         |                       |                   |             | Type/Filter | Exp.  |
| CE07677                 | HD8890                      | 01 22 36     | +88 46 00           | 02 13 08                |                       | 03 58 W           |             |             | 364s  |
| 78                      | COMP                        |              |                     |                         |                       |                   |             | ThAr        | 1     |
| 79                      | BIAS(4)                     |              |                     |                         |                       |                   |             |             |       |
| 80                      | Comp                        |              |                     |                         |                       |                   |             | ThAr        | 1sec  |
| 81                      | HD204867                    | 21 26 18     | -06 01              | 02 29 37                |                       | 01 30 W           |             |             | 624   |
| 82                      | COMP                        |              |                     |                         |                       |                   |             | ThAr        | 1     |
| 83                      | HD204867                    |              |                     | 02 41 46                |                       | 01 44 W           |             |             | 734   |
| 84                      | COMP                        |              |                     |                         |                       |                   |             | ThAr        | 1     |
| 85-89                   | 5x FLAT                     |              |                     |                         |                       |                   |             | Tung        | 1.7   |
| 90                      | BIAS(4)                     |              |                     |                         |                       |                   |             |             |       |
| 91                      | In board / out board        |              |                     |                         |                       |                   |             |             |       |
| 92                      | Focus                       |              |                     | 03 20                   |                       | 02 56W            | +21°        | ThAr        | 2     |
| STARTED AT 04 EST Aug 1 |                             |              |                     |                         |                       |                   |             |             |       |
| CE07693                 | Echelle non motion Test exp |              |                     |                         |                       |                   |             |             |       |
| - CE07735               | " " " " "                   |              |                     |                         |                       |                   |             |             |       |
| - CE07737               | " " " " "                   |              |                     |                         |                       |                   |             |             |       |
| - → 7749                | " " " " "                   |              |                     |                         |                       |                   |             |             |       |
|                         |                             |              |                     | 19 33                   | 00 07                 | -00 00 30         | -33 09      | ThAr        | 10sec |
|                         |                             |              |                     |                         |                       | -00 00 30         | -33 13      | "           | "     |



Temp. <sup>CD</sup> -100.5°C Dome Temp./Hum. 19.4°C / 81.6% Transparency Conditions ... hazy

Focus ... e.250

Spectr. Temp. ... Dome Temp./Hum. 119.4°C

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst.           | Grating/Tilt         | Slit                   | Emulsion          | P.H.               | Program      | Remarks                           | Quality  |
|-----------|--------|-----------|------|-----------------|----------------------|------------------------|-------------------|--------------------|--------------|-----------------------------------|----------|
| 546       |        | 2         | F    | ECHOLLE<br>19.2 | 300 lines<br>5630    | 60μW<br>400μH<br>".225 | 6300A             | 5<br>3<br>1<br>3c: | KK pgn.      | max adu = ~ 8K<br>DOME WETTISH    |          |
| 422       |        | 2.91      | GO1b |                 |                      |                        |                   | 6<br>3             | KK Std. Vel. | ~ 6.7K max adu.                   |          |
| 361       |        |           |      |                 |                      |                        |                   | 6<br>3             | KK Std. Vel. | ~ 7K max adu.                     |          |
|           |        |           |      |                 |                      | 60μW<br>500μH<br>".215 |                   |                    |              | max adu. ~ 13.8K                  | -100.5°C |
|           |        |           |      |                 |                      | 60μW<br>400μH<br>".225 |                   | 1/2c:              | Focus Test   | CCD FWHM<br>0 0 128 1074 8 1      |          |
|           |        |           |      | All to          | WORM & PERSEUS       |                        |                   |                    |              | Aug 1<br>Dome T @ 21:40 = +22.9°C |          |
|           |        |           |      | CCDT →          | -114°C               | Echelle<br>19.2        | 300 lines<br>5630 | 60μW<br>400μH      | 6300A        |                                   |          |
|           |        |           |      | CCDT →          | -116.8 @ 00:10 Aug 2 |                        |                   |                    |              | Dome T = +21.8 @ 00:15 Aug 2      |          |

NOTE: hot pixel in column 31  
 (guiding on opp. side of central column... (w. red. v. l. t.)...)

Date 1994 August 213

Observers [B]n] III / T.n.....

CS383 0 sec out from WNW-time.....

| Plate No.               | Object                    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination        | Comparison<br>Type/Filter       | Exp.   |
|-------------------------|---------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|--------------------|---------------------------------|--------|
| CL 24553 <sup>552</sup> | Comp / Stellar<br>Hartman |              |                     |                         |                       | 00 15 W           | +46°               |                                 | 60/60  |
| 54                      | Bias (4)                  |              |                     | 20:4                    |                       |                   |                    |                                 |        |
| 55                      | Comp                      |              |                     | 20:44:46                |                       |                   |                    | FAR<br>Clear                    | 60     |
| 55                      | HD 146416                 | 16 11 05     | -21 19 13           | 20:48:03                |                       | 1:24:21 W         | Air mass<br>2.6645 |                                 | 1482   |
| 57                      | Comp                      |              |                     | 21:15:06                |                       |                   |                    | FAR<br>Clear                    | 60     |
| 58                      | Bias (4)                  |              |                     |                         |                       |                   |                    |                                 |        |
| 59                      | Comp                      |              |                     | 21:22:45                |                       |                   |                    | FAR<br>Clear                    | 60     |
| 60                      | HD 157741                 | 17 20 03     | +15 41 49           | 21:25:27                |                       | 0 44 16 W         | 1.1521             |                                 | 872    |
| 61                      | Comp                      |              |                     | 21:41:36                |                       |                   |                    | FAR<br>Clear                    |        |
| → 62<br>63              | FLATS x 2                 |              |                     |                         |                       | 00 00'            | +5°                | TUNE<br>Apz 1/4<br>FAR<br>Clear | 6 sec  |
| 64                      | Comp                      |              |                     | 21:55:22                |                       |                   |                    | FAR<br>Clear                    | 60s    |
| 65                      | HD 169578                 | 18 20 13     | +05 01 46           | 21 57 15                |                       | 0:20:06 W         | 1.2873             |                                 | 1150   |
| 66                      | Comp                      |              |                     | 22:17:36                |                       |                   |                    | FAR<br>Clear                    | 60s    |
| 67                      | Bias (4)                  |              |                     | 22:21                   |                       |                   |                    | 4x                              | 67 sec |
| CG 40337-40<br>9142     | HD 176844<br>"            | 18 57 03     | +40 32 36           | 22:27                   |                       | 0 0               | +40°               | 2x                              | 139ms  |

Spectr. Temp. ... 100:0°C Dome Temp./Hum. ... +19.5°C ... 8362/4 Transparency Conditions ... H.A.I.F. ... cloudy .....

Focus ... 6.70 .....

Dome fans on

Spectr. Temp. ... again 9.0 ... Dome Temp./Hum. ....

ced fnt 400 0 50 1024 1

| Exp. Mtr. | Seeing | Mag. | Sp.    | Inst.       | Grating/<br>Tilt      | Slit              | Emulsion | P.H. | Program                    | Remarks   | Quality        |
|-----------|--------|------|--------|-------------|-----------------------|-------------------|----------|------|----------------------------|---|----------------|
|           |        |      |        | Cass<br>CCP | 1800 1mm<br>7=6065 um | 306               | 6604A    | 6/7  | Focus<br>TEST              |   |                |
|           |        |      |        |             |                       |                   |          | 1    |                            |   |                |
|           |        |      |        |             |                       |                   |          | 8    |                            |   |                |
| 286       | 3      | 6.41 | B9V    | max 7K ADU  |                       | ~170:1 SW         |          | 9    | Bln Telluric<br>Std Search | humidity 93%<br>on catwalk at 21:00<br>cloudy             |                |
|           |        |      |        |             |                       |                   |          | 10   |                            | ↔ dock drive off  |                |
|           |        |      |        |             |                       |                   |          | 11   |                            |   |                |
| 1924      | ~4     | 6.35 | B9V    |             |                       |                   |          | 12   | Bln Telluric<br>Std Search | 94.5% humidity<br>on catwalk 21:35<br>obs. through clouds | (5/4)<br>18.7° |
|           |        |      |        |             |                       |                   |          | 13   |                            |   |                |
|           |        |      |        |             |                       |                   |          | 14c  |                            | 15,276 MAX ADU<br>15,050 " "                              |                |
|           |        |      |        |             |                       |                   |          | 15   |                            |   |                |
| 1932      | 3"     | 6.74 | B9V    | -240:1 SW   |                       | Max 3.1 KADU      |          | 16   | Bln Telluric<br>Std Search |   |                |
| 3694      |        |      |        |             |                       |                   |          | 17   |                            |   |                |
|           |        |      |        |             |                       |                   |          | 1    |                            |   |                |
|           | 2"     | 6.65 | M2 III |             |                       | (Above 306u slit) |          |      | Seeing Test                | only NE FAN ON<br>Dome west<br>no wind                    |                |



231  
A#2

Date .1994.. Aug. 2/3... Observers ... F. Binz III ... I. T. N. / B. H. Hodges

Emulsion Batches:

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| Plate No. | Object               | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination       | Comparison<br>Type/Filter | Exp.  |
|-----------|----------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------------|---------------------------|-------|
| α 24568   | Comp                 |              |                     | 22:44:57                |                       |                   |                   | FEAR<br>clear             | 60    |
| 69        | HD150118             | 1633 51      | 53 07 30            | 22:50:15                |                       | 2:50 W            | Airmass<br>1.1460 |                           | 475   |
| * 70      | HD150118             | 1633 51      | 53 07 30            | 23:02:35                |                       | 3:01 W            | 1.656             |                           | 403   |
| * 71      | Comp                 |              |                     | 23:11:49                |                       |                   |                   | FEAR<br>clear             | 60    |
| * 72      | Bias (4)             |              |                     | 23:18                   |                       |                   |                   |                           |       |
| * 73      | Comp                 |              |                     | 23:19:39                |                       |                   |                   | FEAR<br>clear             | 60s   |
| 74        | HD 88293             | 19 49 13     | -08 29 16           | 23 22 14                |                       | 0:9 W             | Airmass<br>1.6299 |                           | 764   |
| 75        | Comp                 |              |                     | 23:37:15                |                       |                   |                   | FEAR<br>clear             | 60s   |
| 76        | HD 188294            | 19 49 13     | -08 29 51           | 23:39:28                |                       | 0:33 <del>W</del> | Airmass<br>1.6553 |                           |       |
| 77        | Comp                 |              |                     | 00:06:18                |                       |                   |                   | FEAR<br>clear             | 60    |
| 78-97     | FLATS x 20           |              | +9°                 |                         |                       | 0:45 W            |                   | 1/4 ap<br>clear           | 6     |
| 98        | Bias (4)             |              |                     | 00:25:12                |                       |                   |                   |                           |       |
| 99/600    | Comp/Stellar Horkman |              | +9°                 |                         |                       | 0:45 W            | +9°               | FEAR<br>clear             | 60/60 |



Spectr. Temp. .... Dome Temp./Hum.  $89.4\%$  /  $18.4^\circ$  Transparency Conditions . *PART. Cloudy* ..... 232  
 Focus ....  $6.70$  .....  
 Spectr. Temp. .... Dome Temp./Hum.  $86\%$   $18.5^\circ$  .....

| Exp. Mtr.  | Seeing           | Mag. | Sp.  | Inst.       | Grating/<br>Tilt      | Slit | Emulsion | P.H.          | Program                    | Remarks  | Quality |
|--|------------------|------|------|-------------|-----------------------|------|----------|---------------|----------------------------|--|---------|
|  |                  |      |      | CASS<br>ccd | 1800/nm<br>G=6065     | 306u |          | 18            |                            |  |         |
| 1843   |                  |      | 6.5B | A11nm       | (guided too far over) |      |          | 19            | Bln Telluric<br>Std Search | (V=5.56 + 0.9V)<br>HO150117 stars slit   | 18.40   |
| 1756   | $1.5''$<br>$2''$ |      |      |             |                       |      |          | 20            | " - "                      | (binning too close to be<br>resolved in this binning<br>mode - ~ 1 pixel separation) |         |
|  |                  |      |      |             |                       |      |          | 21            |                            |  |         |
|  |                  |      |      |             |                       |      |          | <del>18</del> |                            |  |         |
|  |                  |      |      |             |                       |      |          | 22            |                            |  |         |
| 1607   | $1.2''$          | 5.71 | 87   | $\bar{N}$   |                       |      |          | 23            | Bln Telluric<br>Std Search | 1.628 Air mass   | 17.9°   |
|  |                  |      |      |             |                       |      |          | 24            |                            |  |         |
| 1564   |                  | 6.49 | 88   | V           |                       |      |          | 25            | Bln Telluric<br>Std Search |  | 17.7°   |
| 2062   |                  |      |      |             |                       |      |          | 26            |                            | closed up due to   |         |
|  |                  |      |      |             |                       |      |          | 27            |                            | humidity - 96% on<br>cutwath   |         |
|  |                  |      |      |             |                       |      |          | 1             |                            |  |         |
|  |                  |      |      |             |                       |      |          | 28/29         | Focus Test                 | 18.4°  | 18.4°   |
| Note: 2 pixel shift in complines from<br>Focus test done at start of night |                  |      |      |             |                       |      |          |               |                            |  |         |



Spectr. Temp.  $-1000$ Dome Temp./Hum.  $22.1^{\circ}C/65.6\%$ Transparency Conditions *Clean, ... few high clouds, ...*Focus  $6.70$ Spectr. Temp. *gain*  $90$ Dome Temp./Hum.  $21.3^{\circ}C/79.6\%$ CCD format  $400, 0, 50, 1024, 4, 1$ *234*  
*increasing clouds haze*

| Exp. Mtr.        | Seeing | Ptg. Mag. | Sp.    | Inst.       | Grating/Tilt   | Slit      | Emulsion<br><i>lambda</i> | D.H.<br><i>ct</i> | Program | Remarks        | Quality |
|------------------|--------|-----------|--------|-------------|----------------|-----------|---------------------------|-------------------|---------|----------------|---------|
|                  |        |           |        | Cass<br>CCD | 1800<br>G=4446 | 306 $\mu$ | 4298 $\text{\AA}$         | 2/3               |         |                |         |
|                  |        |           |        | "           | "              | "         | "                         | 1                 |         |                |         |
|                  |        |           |        | "           | "              | "         | "                         | 4ci               |         |                |         |
| <del>10290</del> |        | 3.89      | B5 IV  |             |                |           |                           | 5ci               | Hnd     |                |         |
|                  |        |           |        | "           | "              | "         | "                         | 4ci               |         |                |         |
| 7680             |        | 3.89      | B5 II  | "           | "              | "         | "                         | 6ci               | Hnd pgm | MAX 7300/1 SA  |         |
|                  |        |           |        | "           | "              | "         | "                         | 7ci               |         |                |         |
| 6780             | 2"     | 3.89      | B5 III | "           | "              | "         | "                         | 8ci               |         | abs. max 15400 |         |
|                  |        |           |        | "           | "              | "         | "                         | 9ci               |         |                |         |
| 6400             |        | 3.89      | B5 II  | "           | "              | "         | "                         | 10ci              |         |                |         |
|                  |        |           |        | "           | "              | "         | "                         | 11ci              |         |                |         |
| 6470             |        | 3.89      | B5 III | "           | "              | "         | "                         | 12ci              |         |                |         |
|                  |        |           |        | "           | "              | "         | "                         | 13ci              |         |                |         |
| 6300             |        | 3.89      | B5 IV  | "           | "              | "         | "                         | 14ci              |         |                |         |
|                  |        |           |        | "           | "              | "         | "                         | 15ci              |         |                |         |
|                  |        |           |        | "           | "              | "         | "                         | 16ci              |         |                |         |



235 p42

Emulsion Batches:

Date 3/4 Aug 1994 Observers Ami / Tn

| Plate No. | Object   | R.A.<br>1900                                    | Declination<br>1900 | Starting Time<br>E.S.T.    | Ending Time<br>E.S.T. | Hour Angle<br>End                | Declination                           | Comparison<br>Type/Filter | Exp. |
|-----------|----------|---|---------------------|----------------------------|-----------------------|----------------------------------|---------------------------------------|---------------------------|------|
| CC 24614  | Comp     |   |                     |                            |                       |                                  |                                       | FeAr<br>Clean             | 60s  |
| 6147      | HD160762 | 17 <sup>h</sup> 36 <sup>m</sup> 38 <sup>s</sup> | 46° 03' 34"         | 22 <sup>m</sup> : 22:28.32 |                       | 1 <sup>h</sup> 25 <sup>m</sup> W | <del>46° 03' 36"</del><br>17° 34' 14" |                           | 444s |
| 618       | Comp     |   |                     | 22: 31.08                  |                       |                                  | 46° 03' 36"                           | FeAr<br>Clean             | 60s  |
| 619       | HD160762 | 17 <sup>h</sup> 36 <sup>m</sup> 38 <sup>s</sup> | 46° 03' 34"         | 22: 35:02                  |                       | 1 <sup>h</sup> 35 <sup>m</sup> W | <del>46° 03' 36"</del><br>17° 34' 14" |                           | 368s |
| 620       | Comp     |   |                     | 22: 45:28                  |                       |                                  | 46° 03' 36"                           | FeAr<br>Clean             | 60s  |
| 621       | HD160762 | 17 <sup>h</sup> 36 <sup>m</sup> 38 <sup>s</sup> | 46° 03' 34"         | 22: 47:45                  |                       | 1 <sup>h</sup> 47 <sup>m</sup> W | <del>46° 03' 36"</del><br>17° 34' 14" |                           | 357s |
| 622       | Comp     |   |                     | 22: 49:105                 |                       |                                  | 46° 03' 36"                           | FeAr<br>Clean             | 60s  |
| 623       | HD160762 | 17 <sup>h</sup> 36 <sup>m</sup> 38 <sup>s</sup> | 46° 03' 34"         | 22: 57:53                  |                       | 1 <sup>h</sup> 57 <sup>m</sup> W | <del>46° 03' 36"</del><br>17° 34' 14" |                           | 366s |
| 624       | Comp     |   |                     | 23: 07:07                  |                       |                                  | 46° 03' 36"                           | FeAr<br>Clean             | 60s  |
| 625       | HD160762 | 17 <sup>h</sup> 36 <sup>m</sup> 38 <sup>s</sup> | 46° 03' 34"         | 23: 09:07                  |                       | f                                | <del>46° 03' 36"</del><br>17° 34' 14" |                           | 528  |
| 626       | Comp     |   |                     |                            |                       |                                  | 46° 03' 36"                           | FeAr<br>Clean             | 60s  |
| 627       | HD160762 | 17 <sup>h</sup> 36 <sup>m</sup> 38 <sup>s</sup> | 46° 03' 34"         | 23: 21:24                  |                       | 2 <sup>h</sup> 23 <sup>m</sup> W | <del>46° 03' 36"</del><br>17° 34' 14" |                           | 496s |
| 628       | Comp     |   |                     | 23: 30:54                  |                       |                                  | 46° 03' 36"                           | FeAr<br>Clean             | 60s  |
| 629       | HD160762 | 17 <sup>h</sup> 36 <sup>m</sup> 38 <sup>s</sup> | 46° 03' 34"         | 23: 34:01                  |                       | 2 <sup>h</sup> 34 <sup>m</sup> W | <del>46° 03' 36"</del><br>17° 34' 14" |                           | 366s |
| 630       | Comp     |   |                     | 23: 43:09                  |                       |                                  | 46° 03' 36"                           | FeAr<br>Clean             | 60s  |
| 631       | BIAS(A)  |   |                     | 23: 45:30                  |                       |                                  |                                       |                           |      |



Spectr. Temp.  $-100^{\circ}$ .....Dome Temp./Hum.  $21.3^{\circ}\text{C}/79.6\%$ Transparency Conditions *Hazy, high clouds*.....

236

Focus  $6.70$ .....Spectr. Temp.  $\text{again } 90$ .....Dome Temp./Hum.  $20.9^{\circ}\text{C}/82.1\%$ 

| Exp. Mtr.   | Seeing      | Ptg. Mag.   | Sp.         | Inst.               | Grating/<br>Tilt       | Slit        | Emulsion<br><i>Clamdale</i> | P.H.<br>CT  | Program | Remarks            | Quality |
|-------------|-------------|-------------|-------------|---------------------|------------------------|-------------|-----------------------------|-------------|---------|--------------------|---------|
|             |             |             |             | <i>Cass<br/>cen</i> | <i>1800<br/>G=4446</i> | <i>30cm</i> | <i>4298A</i>                | <i>16c1</i> |         |                    |         |
| <i>6020</i> | <i>1.2"</i> | <i>3.80</i> | <i>B3IV</i> | "                   | "                      | "           | "                           | <i>17c1</i> |         | <i>13K MAX.</i>    |         |
|             |             |             |             | "                   | "                      | "           | "                           | <i>18c1</i> |         |                    |         |
| <i>6030</i> |             | <i>3.80</i> | <i>B3IV</i> | "                   | "                      | "           | "                           | <i>19c1</i> |         |                    |         |
|             |             |             |             | "                   | "                      | "           | "                           | <i>20c1</i> |         |                    |         |
| <i>6100</i> |             | <i>3.80</i> | <i>B3IV</i> | "                   | "                      | "           | "                           | <i>21c1</i> |         |                    |         |
|             |             |             |             | "                   | "                      | "           | "                           | <i>22c1</i> |         |                    |         |
| <i>6100</i> |             | <i>3.80</i> | <i>B3IV</i> | "                   | "                      | "           | "                           | <i>23c1</i> |         | <i>11K ADU max</i> |         |
|             |             |             |             | "                   | "                      | "           | "                           | <i>24c1</i> |         |                    |         |
| <i>6560</i> | <i>1.2"</i> | <i>3.80</i> | <i>B3IV</i> | "                   | "                      | "           | "                           | <i>25c1</i> |         | <i>12K ADU MAX</i> |         |
|             |             |             |             |                     |                        |             |                             | <i>26c1</i> |         |                    |         |
| <i>6500</i> |             | <i>3.80</i> | <i>B3IV</i> | "                   | "                      | "           | "                           | <i>27c1</i> |         |                    |         |
|             |             |             |             | "                   | "                      | "           | "                           | <i>28c1</i> |         |                    |         |
| <i>6500</i> |             | <i>3.80</i> | <i>B3IV</i> | "                   | "                      | "           | "                           | <i>29c1</i> |         |                    |         |
|             |             |             |             |                     |                        |             |                             | <i>30c1</i> |         |                    |         |
|             |             |             |             |                     |                        |             |                             | <i>31</i>   |         |                    |         |

237  
pg#3

Date 3/4 August 199A Observers Hml/Tn

Emulsion Batches:

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| Plate No.      | Object                  | R.A.<br>1900                                   | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End                | Declination | Comparison<br>Type/Filter | Exp.    |
|----------------|-------------------------|--|---------------------|-------------------------|-----------------------|----------------------------------|-------------|---------------------------|---------|
| CGA03A3<br>-46 | HD195047                | 20 <sup>h</sup> 23 <sup>m</sup> 9 <sup>s</sup> | 47° 35'             |                         |                       | 2 00 00                          | +47°        | 4x                        | 67usec  |
| CGA03A1-48     | "                       | "  | "                   |                         |                       |                                  |             | 2x                        | 133usec |
| CL2463A        | <del>COMP</del> BIAS(A) |  |                     | 00:5:05                 |                       |                                  |             | FeAr<br>Clean             | 60s     |
| 33             | COMP                    |  |                     | 0:11:09                 |                       |                                  |             | FeAr<br>Clean             | 60s     |
| 34             | HD 886                  | 00 08 05                                       | +14 37 40           | 00:15:28                |                       | 3 <sup>h</sup> 14 <sup>m</sup> E | +15° 7' 51" |                           | 6135    |
| 35             | Comp                    |  |                     | 00:29:16                |                       |                                  |             | FeAr<br>Clean             | 60s     |
| 36             | HD 886                  |  |                     | 00:32:13                |                       | 3 <sup>h</sup> 2 <sup>m</sup> E  | +15° 7' 48" |                           | 3935    |
| 37             | Comp                    |  |                     | 00:41:57                |                       |                                  |             | FeAr<br>Clean             | 60s     |
| 38             | HD 886                  |  |                     | 00:44:55                |                       | 2 <sup>h</sup> 51 <sup>m</sup> E | +15° 7' 42" |                           | 2495    |
| 39             | Comp                    |  |                     | 00:52:13                |                       |                                  |             | FeAr<br>Clean             | 60s     |
| 40             | HD 886                  |  |                     | 00:55:42                |                       | 2 <sup>h</sup> 40 <sup>m</sup> E | +15° 7' 39" |                           | 2235    |
| 41             | Comp                    |  |                     | 01:02:08                |                       |                                  |             | FeAr<br>Clean             | 60s     |
| 42             | HD 886                  |  |                     | 01:04:39                |                       | 2 <sup>h</sup> 31 <sup>m</sup> E | +15° 7' 36" |                           | 2725    |
| 43             | Comp                    |  |                     | 01:16:51                |                       |                                  |             | FeAr<br>Clean             | 60s     |
| 44             | HD 886                  |  |                     | 01:15:51                |                       | 2 <sup>h</sup> 6 <sup>m</sup> E  | +15° 7' 30" |                           | 8885    |
| 45             | Comp                    |  |                     | 01:33:07                |                       |                                  |             | FeAr<br>Clean             | 60s     |

Spectr. Temp.  $-100^{\circ}\text{C}$  Dome Temp./Hum.  $87.1\%$   $20.8^{\circ}\text{C}$  Transparency Conditions *Hazy (v.erg)* 258

Focus  $6.70$

Spectr. Temp.  $\text{again } 90$

Dome Temp./Hum.  $86.1\%$   $20.4^{\circ}\text{C}$

*v light SSW wind*

| Exp. Mtr. | Seeing | Pr. Mag. | Sp.  | Inst.    | Grating/Tilt   | Slit            | Emulsion | P.H. | Program   | Remarks            | Quality |
|-----------|--------|----------|------|----------|----------------|-----------------|----------|------|-----------|--------------------|---------|
|           | $<1''$ | $7.9$    | G5IV | Cass CCD | 1800<br>G=4446 | 30um            | 4298A    |      | Tr Seeing | Seeing Test        |         |
|           | nice   |          |      |          |                | Above 30um slit |          |      | iv "      | Dome West, no fans |         |
|           |        |          |      |          |                |                 |          | Sci  |           | increasing cloud   |         |
| 6515      | $1.2$  | $2.83$   | B2IV |          |                |                 |          | 6ci  | Hml pgm   | 11K ADU max        |         |
|           |        |          |      |          |                |                 |          | 7ci  |           |                    |         |
| 6550      |        | $2.83$   | B2IV |          |                |                 |          | 8ci  |           |                    |         |
|           |        |          |      |          |                |                 |          | 9ci  |           |                    |         |
| 6630      |        | $2.83$   | B2IV |          |                |                 |          | 10ci |           |                    |         |
|           |        |          |      |          |                |                 |          | 11ci |           |                    |         |
| 6560      |        | $2.83$   | B2IV |          |                |                 |          | 12ci |           |                    |         |
|           |        |          |      |          |                |                 |          | 13ci |           |                    |         |
| 6500      |        | $2.83$   | B2IV |          |                |                 |          | 14ci |           |                    |         |
|           |        |          |      |          |                |                 |          | 15ci |           |                    |         |
| 3260      |        | $2.83$   | B2IV |          |                |                 |          | 16ci |           | Thick cloud again  |         |
|           |        |          |      |          |                |                 |          | 17ci |           |                    |         |





Spectr. Temp. .... 100°

Dome Temp./Hum. .... 20.4°C/87.2%

Transparency Conditions . Clouded .. Out., Humidity <sup>240</sup>

Focus ..... 6.70

Spectr. Temp. .... gain 90

Dome Temp./Hum. .... 20.4°C/87.7%

| Exp. Mtr. | Seeing | Pig. Mag. | Sp. | Inst.                  | Grating/Tilt   | Slit | Emission <del>Channel</del> | PH. <del>ET</del>  | Program | Remarks             | Quality |  |
|-----------|--------|-----------|-----|------------------------|----------------|------|-----------------------------|--------------------|---------|---------------------|---------|--|
|           |        |           |     | Casa CCD               | 1800<br>G=4446 | 30um | 4298A <sup>0</sup>          |                    | H/β     | 134 AD4 (12.1-13.1) |         |  |
|           |        |           |     |                        |                |      |                             | 1                  |         |                     |         |  |
|           |        |           |     |                        |                |      |                             | 10j<br>2/3<br>2/22 |         |                     |         |  |
|           |        |           |     | All to WORM + PERSEUS. |                |      |                             |                    |         |                     |         |  |

241 Pg #1

Date Aug 16 1994 Observers Hml/Smt

Emulsion Batches:

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| Plate No.  | Object                  | R.A.<br>1900                                    | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T.      | Hour Angle<br>End                                | Declination | Comparison<br>Type/Filter | Exp.  |
|------------|-------------------------|---|---------------------|-------------------------|----------------------------|--|-------------|---------------------------|-------|
| CC24669/70 | Focus Test<br>Comp/Star |   |                     | 23:03:47                |                            |  |             |                           | 60/70 |
| 171        | BIASCA)                 |   |                     | 23:43                   |                            |  |             |                           |       |
| 72         | comp                    |   |                     | 23:43:40                |                            |  |             | FeAr<br>Clean             | 60s   |
| 73         | HD14739A                | 16 <sup>h</sup> 16 <sup>m</sup> 44 <sup>s</sup> | 46° 33' 5"          | 23:48                   | 23:50                      | 4 <sup>h</sup> 13 <sup>m</sup> 40 <sup>s</sup> W |             |                           | 250s  |
| 74         | comp                    |   |                     | 23:55                   |                            | 4 <sup>h</sup> 23 <sup>m</sup> W                 |             | FeAr<br>Clean             | 60s   |
| 75         | HD14739A                | 16 <sup>h</sup> 16 <sup>m</sup> 44 <sup>s</sup> | 46° 33' 5"          | 00:00                   | 00:04.<br><del>00:05</del> | 4 <sup>h</sup> 23 <sup>m</sup> W                 |             |                           | 330s  |
| 76         | comp                    |   |                     | 00:05                   | 00:05                      |  |             | FeAr<br>Clean             | 60s   |
| 77         | BIASCA)                 |   |                     | 00:12                   |                            |  |             |                           |       |
| 78         | HD160762 Comp           | 17 <sup>h</sup> 36 <sup>m</sup> 38 <sup>s</sup> |                     | 00:14                   |                            |  |             | FeAr<br>Clean             | 60s   |
| 79         | HD160762                | 17 <sup>h</sup> 36 <sup>m</sup> 38 <sup>s</sup> | 46° 03' 34"         | 00:12                   | 00:23                      | 3 <sup>h</sup> 24 <sup>m</sup> W                 |             |                           | 300s  |
| 80         | comp                    |   |                     | 00:25                   |                            |  |             | FeAr<br>Clean             | 60s   |
| 81         | HD160762                | "   | "                   | 00:27:50                | 00:36                      | 3 <sup>h</sup> 36 <sup>m</sup> W                 |             |                           | 400s  |
| 82         | comp                    |   |                     | 00:36:10                |                            |  |             | FeAr<br>Clean             | 60s   |
| 83         | HD160762                | "   | "                   | 00:38:30                | 00:45:10                   | 3 <sup>h</sup> 34 <sup>m</sup> W                 |             |                           | 400s  |
| 84         | comp                    |   |                     | 00:49:00                | 00:50                      |  |             | FeAr<br>Clean             | 60s   |
| 85         | HD160762                | "   | "                   | 00:52:17                | 00:59                      | 4 <sup>h</sup> 0 <sup>m</sup> W                  |             |                           | 400s  |

Spectr. Temp.  $-100.15^{\circ}$ Dome Temp./Hum.  $13.99^{\circ}/64.5\%$ Transparency Conditions *c. clear, nice, g. cool.* 242Focus  $6.77$ Spectr. Temp.  $90.0^{\circ}$ Dome Temp./Hum.  $12.99^{\circ}/68.5\%$ 

| Exp. Mtr.        | Secing | Pig. Mag. | Sp. | Inst.   | Grating/Tilt   | Slit | Emulsion | P.H. $\lambda$  | Program | Remarks                | Quality |
|------------------|--------|-----------|-----|---|----------------|------|----------|-----------------|---------|------------------------|---------|
|                  |        |           |     | 1800, CEP<br><del>6-4445</del><br>CEP<br>Cass | 1800<br>G=444p | 30um | 4298A    | 3/4<br>1<br>5ci |         |                        |         |
| 460              | 384    | B5IV      | "   | "   | "              | "    | "        | 6ci             | Hand.   | Airmass 1.3745         |         |
| <del>8800</del>  |        |           |     |   |                |      |          | 7ci             |         |                        |         |
| 8300             | 384    | B5IV      |     |   |                |      |          | 8ci<br>9ci<br>1 | Hand.   |                        |         |
|                  |        |           |     |   |                |      |          | 10ci            |         |                        |         |
| 4250             | 380    | B3IV      | "   | "   | "              | "    | "        | 11ci            | Hand    | Airmass 1.2064         |         |
|                  |        |           |     |   |                |      |          | 12ci            |         |                        |         |
| 12300            | "      | "         | "   | "   | "              | "    | "        | 13ci            | Hand    | 1/Kmax AB <sub>2</sub> |         |
|                  |        |           |     |   |                |      |          | 14ci            | Hand    |                        |         |
| 11730            | "      | "         | "   | "   | "              | "    | "        | 15ci            |         |                        |         |
| <del>12300</del> |        |           |     |   |                |      |          | 16ci            | Hand    |                        |         |
| 12300            | "      | "         | "   | "   | "              | "    | "        |                 |         |                        |         |

243  
Pg #2

Emulsion Batches:

Date Aug 15/94 Observers H. H. / Smt

| Plate No. | Object   | R.A.<br>1900                                    | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End                 | Declination | Comparison    |      |
|-----------|----------|---|---------------------|-------------------------|-----------------------|-----------------------------------|-------------|---------------|------|
|           |          |   |                     |                         |                       |                                   |             | Type/Filter   | Exp. |
| CC-24685  | COMP     |   |                     | 1:00:49                 |                       |                                   |             | FeAr<br>Clear | 60s  |
| 86        | HD160762 | 17 <sup>h</sup> 30 <sup>m</sup> 38 <sup>s</sup> | 46°03'34"           | 1:02                    | 1:10                  | 4 <sup>h</sup> 11 <sup>m</sup> W  |             |               | 400  |
| 87        | COMP     |   |                     | 1:08:19                 | 1:12                  |                                   |             | FeAr<br>Clear | 60s  |
| 88        | HD160762 | "   | "                   | 1:14:20                 | 1:15                  | 4 <sup>h</sup> 23 <sup>m</sup> W  |             |               | 415  |
| 89        | COMP     |   |                     |                         |                       |                                   |             | FeAr<br>clear | 60s  |
| 90        | HD160762 |   |                     | 01:24 30                |                       | 04 33 W                           |             |               | 415  |
| 91        | COMP     |   |                     |                         |                       |                                   |             | FeAr<br>clear | 60   |
| 92        | BIASCA)  |   |                     | 01:44:12                |                       |                                   |             |               |      |
| 93        | COMP     |   |                     | 01:45:06                |                       |                                   |             | FeAr<br>clear | 60   |
| 94        | HD886    | 00 <sup>h</sup> 28 <sup>m</sup> 05 <sup>s</sup> | 14°37'40"           | 01:44:06                | 01:52                 | #1 <sup>h</sup> 39 <sup>m</sup> E |             |               | 200s |
| 95        | COMP     |   |                     | 02:03                   |                       |                                   |             | FeAr<br>Clear | 240s |
| 96        | HD886    | "   | "                   | 02:09                   | 02:16                 | 1 <sup>h</sup> 16 <sup>m</sup> E  |             |               | 400s |
| 97        | COMP     |   |                     | 02:17:54                |                       |                                   |             | FeAr<br>Clear | 240s |
| 98        | HD886    |   |                     | 02:24                   | 02:32                 | 0 <sup>h</sup> 59 <sup>m</sup> E  |             |               | 500s |
| 99        | COMP     |   |                     | 02:34                   |                       |                                   |             | FeAr<br>Clear | 240s |



CCD Spectr. Temp.  $-100.5$  Dome Temp./Hum.  $12.9^{\circ}\text{C}/68.5\%$  Transparency Conditions *clear*

Focus  $6.77$   
Spectr. Temp.  $90.0\text{ gain}/0\text{ gain}$  Dome Temp./Hum.  $12.7^{\circ}\text{C}/69.3\%$

| Exp. Mtr.        | Seeing | Ptg. Mag. | Sp. | Inst.        | Grating/Tilt   | Slit | Emulsion<br><i>Emulsion</i> | P.H.<br><i>ci</i> | Program | Remarks                             | Quality |
|------------------|--------|-----------|-----|--------------|----------------|------|-----------------------------|-------------------|---------|-------------------------------------|---------|
|                  |        |           |     | CCD<br>CaASS | 1800<br>G=4446 | 306u | 4298                        | 17ci              | Hnd     |                                     |         |
| 11650            | 3.80   | B2IV      | "   | "            | "              | "    | "                           | 18ci              | Hnd     | ~ 11.                               |         |
|                  |        |           |     |              |                |      |                             | 19ci              |         |                                     |         |
| 11700            | "      | "         | "   | "            | "              | "    | "                           | 20ci              | Hnd     | ~ 11.3K max <i>ada</i>              |         |
|                  |        |           |     |              |                |      |                             | 21ci              |         |                                     |         |
| 1150             |        |           |     |              |                |      |                             | 22                | Hnd     |                                     |         |
| <del>1150</del>  |        |           |     |              |                |      |                             | 23                |         |                                     |         |
|                  |        |           |     |              |                |      |                             | 1                 |         |                                     |         |
|                  |        |           |     |              |                |      |                             | 24                |         |                                     |         |
| 11700            | 2.83   | B2IV      |     |              |                |      |                             | 25                | Hnd     | (90 gain)<br>Gain to 0, 4.3 max ADU |         |
|                  |        |           |     |              |                |      |                             | 26                |         |                                     |         |
| <del>23500</del> | "      | "         |     |              |                |      |                             | 27                | Hnd     | 8.3K max ADU                        |         |
|                  |        |           |     |              |                |      |                             | 28                |         | 2.6K max ADU                        |         |
| 29600            |        |           |     |              | ~ 330:         | S/N  |                             | 29                | Hnd     | 2.6 max ADU                         |         |
|                  |        |           |     |              |                |      |                             | 30                |         | 10K max ADU                         |         |

245 Page # 3.

Emulsion Batches:

Date Aug 5/6/1944 Observers Hord/Smit

| Plate No. | Object                                | R.A.<br>1900                                   | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End    | Declination | Comparison    |                                    |
|-----------|---------------------------------------|--|---------------------|-------------------------|-----------------------|----------------------|-------------|---------------|------------------------------------|
|           |                                       |  |                     |                         |                       |                      |             | Type/Filter   | Exp.                               |
| CC244700  | H0886                                 | 0 <sup>h</sup> 08 <sup>m</sup> 05 <sup>s</sup> | 140°37'40"          | 02:42:41                |                       | 00 40 E              |             |               | 500s                               |
| 01        | comp                                  |  |                     | 02:55                   | 02:59                 |                      |             | FeAr<br>Clear | 240s                               |
| 02        | BIAS(4)                               |  |                     | 03:01                   |                       |                      |             |               |                                    |
| 03        | comp                                  |  |                     | 03:03                   |                       |                      |             | FeAr<br>Clear | 240s                               |
| 04        | HD 886                                |  |                     | 03:00                   | 03:20                 | 00 12 E              |             |               | 500s                               |
| 05        | <del>comp</del><br><del>BIAS(4)</del> |  |                     | 03:21                   |                       |                      |             | FeAr<br>Clear | <del>240s</del><br><del>240s</del> |
| 06        | BIAS(4)                               |  |                     | 03:27                   |                       |                      |             |               |                                    |
| 07        | comp                                  |  |                     | 03:28                   |                       |                      |             | FeAr<br>Clear | 60s                                |
| 08        | H0886                                 |  |                     | 03:30                   | 03:32                 | 00 <sup>h</sup> 00 W |             |               | 120s                               |
| 09        | comp                                  |  |                     | 03:34                   |                       |                      |             | FeAr<br>Clear | 60s                                |
| 10        | H0886                                 |  |                     | 03:36                   | 03:38                 | 00 <sup>h</sup> 05 W |             |               | 100s                               |
| 11        | comp                                  |  |                     | 03:38                   |                       |                      |             | FeAr<br>Clear | 60s                                |
| 12        | H0886                                 |  |                     | 03:41                   | 03:43                 | 00 <sup>h</sup> 10 W |             |               | 100s                               |
| 13        | comp                                  |  |                     | 03:46                   |                       |                      |             | FeAr<br>Clear | 60s                                |
| 14        | H0886                                 |  |                     | 03:49                   | 03:51                 | 00 <sup>h</sup> 19 W |             |               | 100s                               |

Spectr. Temp.  $-100.5^{\circ}\text{C}$  Dome Temp./Hum.  $12.7^{\circ}\text{C}/69.3\%$  Transparency Conditions *clear, haze on horizon* 24/6

Focus  $6:77$   
 Spectr. Temp.  $0$  gain/90 Dome Temp./Hum.  $12.7^{\circ}\text{C}$

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.    | Grating/Tilt   | Slit        | Emulsion | P.H.     | Program | Remarks   | Quality |
|-----------|--------|-----------|-----|----------|----------------|-------------|----------|----------|---------|---|---------|
| 29500     |        | 2.80      | B&W | Cass CCD | 1800<br>G=4446 | 306 $\mu$ m | 4208     | 7c<br>7c | Hul     | <i>egain 0</i><br>9.2K max<br>Aval<br>E=340 S/W |         |
|           |        |           |     |          |                |             |          | 1        |         | 0 c gain  |         |
|           |        |           |     |          |                |             |          | 89       |         |   |         |
| 29000     |        |           |     |          |                |             |          | 10       | Hul     |   |         |
|           |        |           |     |          |                |             |          | 11       |         | 0 c gain  |         |
|           |        |           |     |          |                |             |          | 1        |         | "   |         |
|           |        |           |     |          |                |             |          | 13       |         | 90 c gain                                       |         |
| 8020      |        |           |     |          |                |             |          | 14       |         | 13K maxadu                                      |         |
|           |        |           |     |          |                |             |          | 15       |         | 11Kx  |         |
| 7000      |        |           |     |          |                |             |          | 16       |         | 11.2K maxadu                                    |         |
|           |        |           |     |          |                |             |          | 17       |         |   |         |
| 7050      |        |           |     |          |                |             |          | 18       |         |   |         |
|           |        |           |     |          |                |             |          | 19       |         |   |         |
| 6250      |        |           |     |          |                |             |          | 20       |         |   |         |



Date Aug 5/6 / 94 Observers Anne / Smt

Emulsion Batches:

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| Plate No. | Object                      | R.A.<br>1900                                   | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End                | Declination | Comparison    |                        |
|-----------|-----------------------------|--|---------------------|-------------------------|-----------------------|----------------------------------|-------------|---------------|------------------------|
|           |                             |  |                     |                         |                       |                                  |             | Type/Filter   | Exp.                   |
| CC29715   | Comp                        |  |                     | 03:53                   | 03:54                 |                                  |             | Fair<br>Clear | 60s                    |
| 16        | HD886                       | 0 <sup>h</sup> 08 <sup>m</sup> 05 <sup>s</sup> | 14°27'40"           | 03:55                   | 03:57                 | 0 <sup>h</sup> 26 <sup>m</sup> W |             |               | 120s                   |
| 17        | comp                        |  |                     | 03:58                   | 03:59                 |                                  |             | Fair<br>Clear | 60s                    |
| 18        | HD986                       |  |                     | 04:00                   | 04:02                 | 0 <sup>h</sup> 30 <sup>m</sup> W |             |               | 120s                   |
| 19        | comp                        |  |                     | 04:04                   | 04:05                 |                                  |             | Fair<br>Clear | 60s                    |
| 20        | HD886                       |  |                     | 04:06                   | 04:08                 | 0 <sup>h</sup> 36 <sup>m</sup> W |             |               | 120s                   |
| 21        | comp                        |  |                     | 04:09                   | 04:10                 |                                  |             | Fair<br>Clear | 60s                    |
| 22        | BRASCA                      |  |                     | 04:10                   |                       | 0 <sup>h</sup> 0 <sup>m</sup>    |             |               |                        |
| 23-32     | 10x Plates (22s)            |  |                     | 04:18                   |                       | 0 <sup>h</sup> 0 <sup>m</sup> W  | +15°10'     |               | YAP<br>Tung            |
| 33-42     | 10x Plates (22s)            |  |                     | 04:30                   |                       | 4 <sup>h</sup> W                 | +46°        |               | YAP<br>Tung            |
| 43/44     | FOCUS TEST<br>COMP/STELLAR. |  |                     | 04:38                   |                       | 4 <sup>h</sup> W                 | +46°        |               | Fair<br>clear          |
| 45-49     | 5x Plates (22s)             |  |                     |                         |                       | 0 <sup>h</sup> 0 <sup>m</sup> W  | 15°10'      |               | <del>YAP</del><br>Tung |



Spectr. Temp. ... -160.5° ... Dome Temp./Hum. ... 12.2°C/71.1% ... Transparency Conditions ... 248

Focus ... 6.77

Spectr. Temp. ... 90 again ... Dome Temp./Hum. ... 12.4°C/71.6%

| Exp. Mtr. | Seeing | Pig. Mag. | Sp. | Inst.                  | Grating/Tilt   | Slit | Emulsion | P.H. | Program | Remarks       | Quality |         |  |
|-----------|--------|-----------|-----|------------------------|----------------|------|----------|------|---------|---------------|---------|---------|--|
|           |        |           |     | Case CCD               | 1200<br>G=4446 | 30um | 4298     | 21   | Hnd.    |               |         |         |  |
| 7720      | 2.83   | BVII      |     |                        |                |      |          | 22   |         | 11.6k max adu |         |         |  |
|           |        |           |     |                        |                |      |          | 23   |         |               |         |         |  |
| 7850      |        |           |     |                        |                |      |          | 24   | Hnd.    | 11 k max adu  |         |         |  |
|           |        |           |     |                        |                |      |          | 26   |         |               |         |         |  |
| 8210      |        |           |     |                        |                |      |          | 27   | Hnd     |               |         |         |  |
|           |        |           |     |                        |                |      |          | 28   |         |               |         |         |  |
|           |        |           |     |                        |                |      |          | 1    |         |               |         |         |  |
|           |        |           |     |                        |                |      |          | 29   |         | 90 again      |         |         |  |
|           |        |           |     |                        |                |      |          | 30   |         |               |         |         |  |
|           |        |           |     |                        |                |      |          | 3/4  |         |               |         |         |  |
|           |        |           |     | All to Perseus & Worm. |                |      |          |      |         |               |         | 0 again |  |

Plat 244 Sat/Sun 6/7  
 Date 1944 Aug 24

Observers [Rm]/Smt

Emulsion Batches:

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 .....

| Plate No.  | Object                     | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter (S) Exp. |
|------------|----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|------------------------------------|
| CC24750/51 | FOCUS TEST<br>COMP/STELLAR |              |                     |                         |                       |                   |             | F4Ar<br>clear 30/33                |
| 52         | BIAS(4)                    |              |                     |                         |                       |                   |             |                                    |
| 53         | COMP                       |              |                     |                         |                       |                   |             | F4Ar<br>clear 60                   |
| 54         | HD214975                   | 22 36 55     | +56 18 24           | 01 15 30                |                       | 00 20 E           | +56°        | 1200                               |
| 55         | COMP                       |              |                     |                         |                       |                   |             | F4Ar<br>clear 60                   |
| 56         | BIAS(4)                    |              |                     |                         |                       |                   |             |                                    |
| 57         | COMP                       |              |                     |                         |                       |                   |             | F4Ar<br>clear 60                   |
| 58         | HD180583                   | 19 12 00     | +27 45 00           | 02 22 41                |                       | 04 02 W           | +28°        | 630                                |
| 59         | COMP                       |              |                     |                         |                       |                   |             | F4Ar<br>clear 60                   |
| 60         | COMP                       |              |                     |                         |                       |                   |             | F4Ar<br>clear 60                   |
| 61         | HD180583                   | 19 12 00     | +27 45 00           | 03 02 01                |                       | 04 44 W           | +28°        | 700                                |
| 62         | COMP                       |              |                     |                         |                       |                   |             | F4Ar<br>clear 60                   |
| 63         | BIAS(4)                    |              |                     |                         |                       |                   |             |                                    |
| 64         | COMP                       |              |                     |                         |                       |                   |             | F4Ar<br>clear 60                   |
| 65         | HD3712                     | 00 40 12     | +56 36 26           | 03 49 19                |                       | 00 04 E           | +56         | 30                                 |

CCD Spectr. Temp. .... -100.5 °C Dome Temp./Hum. .. 16.2 °C / 54.5% Transparency Conditions ... clear!

Focus ..... 6.75 .....

Spectr. Temp. *again* = 90 ..... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.      | Inst.       | Grating/Tilt          | Slit  | Emulsion | P.H. | Program | Remarks   | Quality          |  |
|-----------|--------|-----------|----------|-------------|-----------------------|-------|----------|------|---------|---|------------------|--|
|           |        |           |          | CASS<br>CCD | 1800 Å/mm<br>6 = 5910 | 306 μ | 6400 Å   | 3/4  |         | set a little cold.  |                  |  |
|           |        |           |          |             |                       |       |          | 1    |         | PARTMAN<br>MASK MAY<br>HAVE BEEN<br>STUCK IN<br>STELLAR<br>POSITION.<br>BUT NOT LIKELY<br>DUE TO COMP<br>EXP. METER SAME. |                  |  |
| 3404      |        |           |          |             |                       |       |          | 5    |         |   |                  |  |
| 576       |        | 8.40      | ~G0 Ib   |             |                       |       |          | 6    | Rm PGM  |   | ~4.8K max a.d.u. |  |
| 3360      |        |           |          |             |                       |       |          | 7    |         | reset spec. controller @ this<br>star's pos'n twice & take again.   |                  |  |
| 3750      |        |           |          |             |                       |       |          | 8    |         | TROUBLE SHEET FILED   |                  |  |
| 2590      |        | 6.19      | F6 I- Ib |             |                       |       |          | 9    | Rm PGM  | ~12.5K max a.d.u.   |                  |  |
| 3935      |        |           |          |             |                       |       |          | 10   |         |   |                  |  |
| 3800      |        |           |          |             |                       |       |          | 11   |         |   |                  |  |
| 2231      |        | 6.19      | F6 I- Ib |             |                       |       |          | 12   | Rm PGM  | ra & dec Δ's way off (~1/2 min)<br>~10K max a.d.u.  |                  |  |
| 3840      |        |           |          |             |                       |       |          | 13   |         |   |                  |  |
|           |        |           |          |             |                       |       |          | 1    |         |   |                  |  |
|           |        |           |          |             |                       |       |          | 14   |         |   |                  |  |
| 7000      |        | 2.33      | K5 IIIa  |             |                       |       |          | 15   | RU STD. | 0 again. perhaps too bright<br>of a star to<br>choose.  |                  |  |







CCO  
Spectr. Temp.  $\sim 100$  ..... Dome Temp./Hum.  $14.2^{\circ}\text{C}/60.7\%$  Transparency Conditions  $\dots$  clear ..... 252

Focus  $\dots$  6.75 .....

Spectr. Temp.  $\text{C}_{\text{gas}} = 90$  ..... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.     | Grating/Tilt                 | Slit             | Emulsion | P.H.          | Program | Remarks                                  | Quality |
|-----------|--------|-----------|-----|-----------|------------------------------|------------------|----------|---------------|---------|--|---------|
| 3285      |        |           |     | CAS<br>CD | 1800 $\mu\text{m}$<br>G-5140 | 30 $\mu\text{m}$ | 6400A    | 16            |         |  |         |
| 3295      |        |           |     |           | G-5910                       |                  |          | 17            |         | RESET SPEC. CONTROLLER<br>TWICE AGAIN.   |         |
| 1130      |        | 7.36      | dk5 |           |                              |                  |          | 18            | RV STD  | $\sim 7.5\text{K}$ max adn               |         |
| 3320      |        |           |     |           |                              |                  |          | 19            |         |  |         |
|           |        |           |     |           |                              |                  |          | <del>20</del> |         |  |         |
|           |        |           |     |           |                              |                  |          | 20            |         | <del>*</del> max adn fell from           |         |
|           |        |           |     |           |                              |                  |          | <del>21</del> |         | $\sim 13\text{K}$ to $10\text{K}$ by the |         |
|           |        |           |     |           |                              |                  |          | 21            |         | finish of Plats.                         |         |
|           |        |           |     |           |                              |                  |          | 3/4           |         |  |         |

All to PARSENG & WORM (two DISKS)

~~G should be 5910 not 5190~~  
~~CHECK DATA TO FIND OUT WHERE~~  
~~DYSLEXIA OCCURRED.~~

253  
19 # 1 Sun/Mon.

Date 1994 Aug 7/8 Observers KK/Smt / {Vys}

Emulsion Batches:

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| Plate No. | Object                                      | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End  | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|---|--------------|---------------------|-------------------------|-----------------------|--------------------|-------------|---------------------------|------|
| CC 24793  | Hartmann <sup>comp</sup> <del>stellar</del> |              |                     |                         |                       |                    |             | FeNe<br>clear             | 15   |
| 24794     | Hartmann stellar                            |              |                     |                         |                       |                    |             | "                         | "    |
| 24795     | bias 4x                                     |              |                     |                         |                       |                    |             |                           |      |
| 96        | COMP  |              |                     |                         |                       |                    |             | FeNe<br>clear             | 20   |
| 97        | BD+47 2415B                                 | 16 55 06     | 47 30 55            | 21:08                   |                       |                    |             |                           |      |
| 98        | COMP  |              |                     |                         |                       |                    |             | FeNe<br>clear             | 20   |
| 99        | COMP  |              |                     |                         |                       |                    |             | FeNe<br>clear             | 30   |
| 800       | BD+47 2415B                                 |              |                     | ~21 25?                 |                       |                    |             |                           | 400  |
| 01        | COMP  |              |                     |                         |                       |                    |             | FeNe<br>clear             | 30   |
| 02        | BD+47 2415                                  |              |                     | 21 44 01                |                       | 138 <sup>m</sup> W |             |                           | 255  |
| 03        | COMP  |              |                     |                         |                       |                    |             | FeNe<br>clear             | 30   |
| 04        | BIAS(4)                                     |              |                     |                         |                       |                    |             |                           |      |
| 05        | COMP  |              |                     |                         |                       |                    |             | FeNe<br>clear             | 30   |
| 06        | <sup>(Vys 880)</sup><br>BD +47 2411         |              |                     | 22 07 37                |                       | 02 05 W            |             |                           | 389  |
| 07        | COMP  |              |                     |                         |                       |                    |             | FeNe<br>clear             | 30   |

Spectr. Temp. ~~18.0~~ .....

Dome Temp./Hum. 19.1/66%

Transparency Conditions clear 254

Focus 16.70 .....

Spectr. Temp. -100.5°C .....

Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt  | Slit | Emulsion | D.H. C | Program       | Remarks              | Quality |
|-----------|--------|-----------|-----|-------|---------------|------|----------|--------|---------------|----------------------|---------|
|           |        |           |     |       | 1800/<br>5115 | 300  | 5303A    |        |               | ccdfmt 400 0 50 1024 | 41      |
|           |        | 11.2      | K8  |       |               |      |          |        | {Vys}/Hlw Pgm | Vys 887B - test      |         |
|           |        |           |     |       |               |      |          |        |               | ccdfmt 480 0 50 1024 | 11      |
| 119       |        | 11.2      | K8  |       |               |      |          |        | {Vys}/Hlw Pgm | Vys 887B             |         |
| 233       |        | ~8        |     |       |               |      |          |        | {Vys}/Hlw Pgm | Vys 887              |         |
|           |        |           |     |       |               |      |          | 1      |               |                      |         |
|           |        |           |     |       |               |      |          | 4      |               |                      |         |
| 255       |        |           |     |       |               |      |          | 5      | {Vys}/Hlw Pgm | Vys 886              |         |
|           |        |           |     |       |               |      |          | 4      |               |                      |         |





CCD Spectr. Temp.  $-100.4^{\circ}\text{C}$  Dome Temp./Hum.  $15.6^{\circ}\text{C}/81.5\%$  Transparency Conditions *clear*  
 Focus  $6.70$  Spectr. Temp.  $90.49^{\circ}\text{C}$  Dome Temp./Hum. *increasing cloud.*

| Exp. Mtr. | Seeing | Pig. Mag. | Sp.            | Inst. | Grating/Tilt | Slit | Emulsion | Exp. | Program  | Remarks                 | Quality |
|-----------|--------|-----------|----------------|-------|--------------|------|----------|------|----------|-------------------------|---------|
|           |        |           |                |       |              |      |          | 4    |          |                         |         |
| 0         |        | 9.3       | <del>MSP</del> |       |              |      |          | 6    | Vys. Pgm | Vys 321                 |         |
|           |        |           |                |       |              |      |          | 4    |          |                         |         |
|           |        |           |                |       |              |      |          | 1    |          |                         |         |
|           |        |           |                |       |              |      |          | 7    |          |                         |         |
|           |        |           |                |       |              |      |          | 8/9  |          | ccdfmt 4000 50 1024 4 1 |         |

All to Perseus ~~BUT NOT~~ WORM AS OF August 8<sup>th</sup>!  
 (due to need to edit headers)

edited on perseus copy

put to WORM Aug 10<sup>th</sup> or so.

put to EXABYTE Aug 21<sup>st</sup> -

257

Page #1

Tue/Wed

Date ..1994.. Aug ..9/10. Observers ..[B.H.] III. / Smt.....

NOTE: INTENTIONALLY  
GUIDING AWAY FROM

Emulsion Batches:

-HOT PIXEL

| Plate No.   | Object                    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination        | Comparison<br>Type/Filter | Exp.  |
|-------------|---------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|--------------------|---------------------------|-------|
| cc 24823/24 | Hartman<br>Comp / stellar |              |                     |                         |                       |                   |                    | Fe Ar<br>clear            | 60/60 |
| 25          | Bias (4)                  |              |                     | 1:57                    |                       |                   |                    | Fe Ar<br>clear            | 60    |
| 26          | Comp                      |              |                     | 2:35:55                 |                       |                   |                    | Fe Ar<br>clear            | 60    |
| 27          | HD 196504                 | 203249       | 260650              | 2:40:33                 |                       | 3:13W             | Air Mass<br>1.3548 | Fe Ar<br>clear            | 775   |
| 28          | Comp                      |              |                     |                         |                       |                   |                    | Fe Ar<br>clear            | 60    |
| 29          | Bias (4)                  |              |                     | 2:56                    |                       |                   |                    | Fe Ar<br>clear            | 60    |
| 30          | 1 Comp                    |              |                     | 3:03:14                 |                       |                   |                    | Fe Ar<br>clear            | 60    |
| 31          | HD 208565                 | 215204       | 113605              | 3:07:49                 |                       | 2:20W             | Air Mass<br>1.3857 | Fe Ar<br>clear            | 752   |
| 32          | Comp                      |              |                     | 3:21:52                 |                       |                   |                    | Fe Ar<br>clear            | 60    |
| 33          | Comp                      |              |                     | 3:31:00                 |                       |                   |                    | Fe Ar<br>clear            | 60    |
| 34          | HD 209833                 | 220103       | 282841              | 3:36:05                 |                       | 2:39W             | Air Mass<br>1.2186 | Fe Ar<br>clear            | 689   |
| 35          | Comp                      |              |                     | 3:49:09                 |                       |                   |                    | Fe Ar<br>clear            | 60    |
| 36          | Bias (4)                  |              |                     | 3:50                    |                       |                   |                    | Fe Ar<br>clear            | 60    |
| 37          | Comp                      |              |                     | 3:55:00                 |                       |                   |                    | Fe Ar<br>clear            | 60    |
| 38          | HD 211287                 | 221101       | 080308              | 3:57:55                 |                       | 2:57W             | Air Mass<br>1.6298 | Fe Ar<br>clear            | 1093  |

Spectr. Temp.  $-100.5^{\circ}$  Dome Temp./Hum.  $75.97\% / 12.3^{\circ}$  Transparency Conditions CLEAR 258Focus  $6.75$ 

DOME FANS ON

Spectr. Temp.  $90.45 + i.a.$  Dome Temp./Hum. ....

ccd fnt 400 0 50 10 24 4 1

| Exp. Mtr.      | Seeing | Pig. Mag.          | Sp. | Inst.           | Grating/Tilt | Slit       | Emulsion<br>Cambera | P.H.          | Program                | Remarks                    | Quality |
|----------------|--------|--------------------|-----|-----------------|--------------|------------|---------------------|---------------|------------------------|----------------------------|---------|
| 13300<br>13000 |        |                    |     | Cass<br>CCD     | 1800 $\mu$ m | 30 $\mu$ m | 6604A               | 3/4           |                        |                            |         |
|                |        |                    |     |                 |              |            |                     | 1             |                        |                            |         |
| 14436          |        |                    |     |                 |              |            |                     | 5             |                        |                            | 12.3°   |
| 15060          | 5.59   | B9V                |     | MAX ADU ~ 7K    |              |            |                     | 6             | Telluric Std<br>✓      |                            | 12.3°   |
| 14394          |        |                    |     |                 |              |            |                     | 7             |                        |                            |         |
|                |        |                    |     |                 |              |            |                     | 1             |                        |                            |         |
|                |        |                    |     |                 |              |            |                     | 8             |                        |                            |         |
| 15050          | 5.54   | A2V <sub>min</sub> |     | MAX ADU ~ 8.1K  |              |            |                     | 9             | Telluric Std<br>Search | SE DOME FAN TURNED OFF NOW | 12.2°   |
|                |        |                    |     |                 |              |            |                     | 10            |                        |                            |         |
|                |        |                    |     |                 |              |            |                     | 11            |                        |                            | 12.0°   |
| 15000          | 5.63   | B9V <sub>n</sub>   |     | MAX ADU ~ 7.6 K |              |            |                     | 12            | Telluric Std<br>Search |                            |         |
|                |        |                    |     |                 |              |            |                     | 13            |                        |                            | 11.9°   |
|                |        |                    |     |                 |              |            |                     | <del>14</del> |                        |                            |         |
|                |        |                    |     |                 |              |            |                     | 14            |                        |                            |         |
| 12000          | 6.21   | A1V <sub>n</sub>   |     |                 |              |            |                     | 15ci          | Telluric Std<br>Search |                            |         |





<sup>CCD</sup>  
 Spectr. Temp.  $-100.4^{\circ}\text{C}$  ..... Dome Temp./Hum.  $11.7^{\circ}/79.8\%$  Transparency Conditions  $\dots$  clear .....  
 Focus  $\dots$   $61.75$  ..... NE DOME FAN ON  
 Spectr. Temp.  $\dots$  again  $\approx 90$  ..... Dome Temp./Hum.  $12.5^{\circ}\text{C}/78.0\%$  by time of focus test - unfortunate.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.                   | Grating/Tilt                    | Slit              | Emulsion Cleared  | P.H. | Program             | Remarks                     | Quality         |
|-----------|--------|-----------|-----|-------------------------|---------------------------------|-------------------|-------------------|------|---------------------|-----------------------------|-----------------|
|           |        |           |     | Cass CCD                | 1800 $\text{\AA}$ /mm<br>G=6065 | 305 $\mu\text{m}$ | 6604 $\text{\AA}$ | 16ci |                     |                             |                 |
| 15000     | 3.94   | AI Vn     |     | Max AOU $\approx$ 0.9 K |                                 |                   |                   | 18ci | H $\alpha$ emission | Bright star in a bright sky | 11.7 $^{\circ}$ |
| 14853     |        |           |     |                         |                                 |                   |                   | 17ci |                     |                             |                 |
| 14927     |        |           |     |                         |                                 |                   |                   | 19ci |                     |                             |                 |
|           |        |           |     |                         |                                 |                   |                   | 20ci |                     | DOME FANS OFF               |                 |
|           |        |           |     |                         |                                 |                   |                   | 1    |                     |                             |                 |

ALL TO *Worm & Pingers*



CCD  
Spectr. Temp.  $-101.7^{\circ}\text{C}$ .....

Dome Temp./Hum.  $17.7^{\circ}\text{C}/67.7\%$

Transparency Conditions ..... Part. Cloudy ..... 262

Focus ..... 6.75.....

Spectr. Temp.  $90$ .....

Dome Temp./Hum. ....  $c$  Lambda .....

increasing cloud

| Exp. Mtr. | Seeing | Plg. Mag. | Sp.   | Inst.       | Grating/Tilt          | Slit | Emulsion | P.H. | Program     | Remarks  | Quality |
|-----------|--------|-----------|-------|-------------|-----------------------|------|----------|------|-------------|--|---------|
|           |        |           |       | CASS<br>CCD | 1800/10/100<br>G=5115 | 306a | 5303     |      |             | 400 0 50 1024 4 1<br>CCD FORMAT<br>440 0 160 1024 11                                   |         |
| ?         | 3"     | 11.2      | K8    |             |                       |      |          | 4    | KK {Vys}    | East companion<br>The fainter of pair.   | 16.5°C  |
|           |        |           |       |             |                       |      |          | 5    |             |  |         |
| 1228      |        |           |       |             |                       |      |          | 6c   |             | SB16 GUIDING.  |         |
|           |        |           |       |             |                       |      |          | 7    |             |  |         |
| 595       |        |           |       |             |                       |      |          | 8    |             | SB16   |         |
|           |        |           |       |             |                       |      |          | 7    |             |  |         |
| 21200     |        |           |       |             |                       |      |          | 9c   |             | through some cloud.<br>The brighter one  |         |
|           |        |           |       |             |                       |      |          | 7    |             |  |         |
|           |        |           |       |             |                       |      |          | 1c   |             |  |         |
|           |        |           |       |             |                       |      |          | 10c  |             |  |         |
|           | 2"     | 7.52      | frull |             |                       |      |          |      | Seeing Test | DMAX ADU = $13.6K - 12.4K$<br>except 80 = 10K<br>no reason why.<br>DOME WEST, NE FAHON |         |









CCD  
Spectr. Temp.  $-100.0^{\circ}\text{C}$   
Focus  $6.75$   
Spectr. Temp.  $90.0\text{ c.gain}$

Dome Temp./Hum.  $12.3^{\circ}\text{C} / 84.6\%$   
Dome Temp./Hum.  $+18.1^{\circ}\text{C} / 88\%$

Transparency Conditions *bazy, humid, high cirrus*  
*- solid cloud*

format 405, 050, 1024, 9, 1

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst.       | Grating/Tilt   | Slit | Emission $\lambda$ | P.H.  | Program    | Remarks                           | Quality |
|-----------|--------|-----------|------|-------------|----------------|------|--------------------|-------|------------|-----------------------------------|---------|
|           |        |           |      | CCD<br>Cass | G=444,<br>1800 | 30u  | 4248               | 3/4   |            |                                   |         |
|           |        |           |      |             |                |      |                    | 5ci   | Hnd.       | Org-y was at 440 for focus test   |         |
| 11300     | 3.80   | B31L      |      |             |                |      |                    | 6ci   |            | 2.9K max adu                      |         |
|           |        |           |      |             |                |      |                    | 7ci   |            |                                   |         |
|           |        |           |      |             |                |      |                    | 1/2   |            |                                   |         |
| 20300     | 2.3"   | 3.80      | B31V |             |                |      |                    | 8ci   |            | $\approx 5.8\text{ K max adu}$    |         |
|           |        |           |      |             |                |      |                    | 9ci   |            |                                   |         |
| 24850     | 3.80   | B31V      |      |             |                |      |                    | 10ci  |            | 6.9 K MAX adu                     |         |
|           |        |           |      |             |                |      |                    | 1/2   |            | closed - humidity 75% or critical |         |
|           |        |           |      |             |                |      |                    | 12ci  |            | CCOT = $-101.7^{\circ}\text{C}$   |         |
|           |        |           |      |             |                |      |                    | 3/4ci | Focus Test | $\approx 11\text{ K ADU max}$     |         |
|           |        |           |      |             |                |      |                    |       |            | Temp Back to $+18.3^{\circ}$      |         |
|           |        |           |      |             |                |      |                    |       |            | All to Persons & Workm            |         |



267 pg #1

Emulsion Batches:

Date <sup>Sun / Mon</sup> 1994 Aug 14/15..... Observers [H. M.] J. n.....

CSS 386 Time a 9.5ers Ahead of W.W.V.....

| Plate No.     | Object         | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |       |
|---------------|----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|-------|
|               |                |              |                     |                         |                       |                   |             | Type/Filter   | Exp.  |
| CC24921<br>22 | Comp / Stellar | HARTMAN      |                     |                         |                       | 00 12W            | +46 00      | Felt<br>clear | 60/80 |
| 23            | BIAS (4)       |              |                     |                         |                       |                   |             |               |       |
| 24            | Comp           |              |                     |                         |                       |                   |             | Felt<br>clear | 60s   |
| 25            | HD 160 762     | 17 36 38     | <del>46</del> 0334  | 20 4443                 |                       |                   |             |               | 116s  |
| 26            | Comp           |              |                     |                         |                       |                   |             |               | 60s   |
| 27            | HD 160 762     |              |                     | 20 5023                 |                       |                   |             |               | 233   |
| 28            | Comp           |              |                     |                         |                       |                   |             | Felt<br>clear | 60s   |
| 29            | HD 160 762     |              |                     | 20 5759                 |                       | 00 38W            |             |               | 241   |
| 30            | Comp           |              |                     |                         |                       |                   |             | Felt<br>clear | 60s   |
| 31            | BIAS (4)       |              |                     |                         |                       |                   |             |               |       |
| 32            | Comp           |              |                     |                         |                       |                   |             | Felt<br>clear | 60s   |
| 33            | HD 147394      | 16 1644      | +46 3305            | 21 0840                 |                       | 02 09W            |             |               | 284   |
| 34            | Comp           |              |                     |                         |                       |                   |             | Felt<br>clear | 60s   |
| - 35<br>43    | FLATS X 9      |              |                     | white on HD 147394      |                       | 02 23W            | +46 20      | TUNG<br>clear | 22sec |
| 44            | Comp           |              |                     |                         |                       |                   |             | Felt<br>clear | 60s   |



CCD Spectr. Temp.  $-100.0^{\circ}\text{C}$ ..... Dome Temp./Hum.  $+15.3^{\circ}\text{C}$ ..... 5768 Transparency Conditions... Clearing... Fast..... 268

Focus..... 6.78.....

Spectr. Temp. Gain = 90.....

Dome Temp./Hum. .... i LAMRDA

415 0 50 1024 4 1 CCDINT

| Exp. Mtr. | Seeing | Pig. Mag. | Sp.  | Inst.       | Grating/Tilt                 | Slit              | Emulsion | P.H. | Program | Remarks                            | Quality |
|-----------|--------|-----------|------|-------------|------------------------------|-------------------|----------|------|---------|------------------------------------|---------|
|           |        |           |      | CASS<br>CCD | 1800 $\mu\text{m}$<br>G=4446 | 306 $\mu\text{m}$ | 4298A    | 3/4  |         |                                    |         |
|           |        |           |      |             |                              |                   |          | 1ci  |         |                                    |         |
|           |        |           |      |             |                              |                   |          | 5ci  |         |                                    |         |
| 14,900    | 3"     | 3.80      | B3IV |             |                              |                   |          | 6ci  | Hml pgm | MAX = 1400 ADU                     |         |
|           |        |           |      |             |                              |                   |          | 7    |         |                                    |         |
| 31,000    | 3.4"   |           |      |             |                              |                   |          | 8    |         | MAX = 9,300 ADU                    |         |
|           |        |           |      |             |                              |                   |          | 11ci |         |                                    |         |
| 31,300    |        |           |      |             |                              |                   |          | 13ci | Hml pgm | MAX = 10,000 ADU                   |         |
|           |        |           |      |             |                              |                   |          | 14ci |         |                                    |         |
|           |        |           |      |             |                              |                   |          | 15   |         |                                    |         |
| 19,790    | 3.4"   | 3.89      | B5IV |             |                              |                   |          | 16   | Hml pgm | 5,200 ADU MAX<br>Cloud coming fast |         |
|           |        |           |      |             |                              |                   |          | 17   |         |                                    |         |
|           |        |           |      |             |                              |                   |          | 18   |         | (Some 10x3 k MAX)                  |         |
|           |        |           |      |             |                              |                   |          | 19   |         | 11.1 k ADU max                     |         |

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pg#2

Emulsion Batches:

Date 1994 Aug 14/15..... Observers [H.M.J.] T.K.....

| Plate No.                | Object   | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T.                    | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.  |
|--------------------------|----------|--------------|---------------------|--|-----------------------|-------------------|-------------|---------------------------|-------|
| CC21945                  | HD147394 | 16 16 44     | +46 33 05           | 21 29 52                                   |                       | 02 32 W           |             |                           | 326   |
| 46                       | Comp     |              |                     |  |                       |                   |             | FcAr<br>clear             | 60s   |
| 47                       | HD147394 | 16 16 44     | +46 33 05           | 21 39 10                                   |                       |                   |             |                           | 339   |
| 48                       | Comp     |              |                     |  |                       |                   |             | FcAr<br>clear             | 60s   |
| 49                       | HD147394 | 16 16 44     | +46 33 05           | 21 48 45                                   |                       | 02 51 W           |             |                           | 351   |
| 50                       | Comp     |              |                     |  |                       |                   |             | FcAr<br>clear             | 60    |
| 51                       | HD147394 |              |                     | 21 58 54                                   |                       |                   |             |                           | 395   |
| 52                       | Comp     |              |                     |  |                       |                   |             | FcAr<br>clear             | 60<   |
| 53                       | BIH5(A)  |              |                     |  |                       |                   |             |                           |       |
| <del>CG40356</del><br>59 | HD187120 | 19 43 12     | +45 29              | Note <sup>CG</sup> 40355 a mistake (Blank) |                       |                   |             | A x                       | 1067s |
| CG40360<br>-61           | n        | n            | n                   |  |                       |                   |             | 2x                        | 133s  |
| CC24954                  | Comp     |              |                     |  |                       |                   |             | FcAr<br>clear             | 60s   |
| 55                       | HD886    | 00 08 05     | +14 37 40           | 22 30 15                                   |                       | 04 24 E           |             |                           | 180   |
| 56                       | Comp     |              |                     |  |                       |                   |             | FcAr<br>clear             | 60s   |
| 57                       | HD886    |              |                     | 22 36 39                                   |                       |                   |             |                           | 196   |
| 58                       | Comp     |              |                     |  |                       |                   |             | FcAr<br>clear             | 60s   |

Spectr. Temp. .... Dome Temp./Hum.  $7.14.0^{\circ}C$   $63\%H$  Transparency Conditions *Part clear* .....

Focus *6.78* .....

Spectr. Temp. .... Dome Temp./Hum.  $4.136^{\circ}C$   $65\%H$  .....



| Exp. Mtr. | Seeing | Pig. Mag.           | Sp.    | Inst.       | Grating/Tilt       | Slit               | Emulsion | P.H.                         | Program     | Remarks                           | Quality |
|-----------|--------|---------------------|--------|-------------|--------------------|--------------------|----------|------------------------------|-------------|-----------------------------------|---------|
| 35,100    | 4"     | 389                 | B5 IV  | CASS<br>CCD | 1500 1/4" $G=4446$ | 306u               | 4298A    | 26c<br>5c                    | Hml / ppm   | 10 K ADU max<br><i>clear here</i> |         |
| 36,600    |        |                     |        |             |                    |                    |          | 21c<br>5c                    |             | 11 K ADU max                      |         |
| 36,600    | 3-4"   |                     |        |             |                    |                    |          | 22c<br>5c                    |             | 10 K max ADU                      |         |
|           |        |                     |        |             |                    |                    |          | 23<br>5c<br>1c               |             |                                   |         |
|           | 4"     | $\checkmark$<br>752 | KO III |             |                    | Above<br>306u slit |          |                              | Seeing Test | Dome West                         |         |
|           |        |                     |        |             |                    |                    |          |                              | n u         |                                   |         |
| 33,450    | 5"     | 280                 | B2 IV  |             |                    |                    |          | 5c<br>24c<br>7c<br>25<br>26c | Hml / ppm   | 10 K ADU max                      |         |



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Emulsion Batches:

Date 1994.. Aug. 14/15..... Observers [Hartman] J. H. ....

| Plate No. | Object       | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |             |
|-----------|--------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|-------------|
|           |              |              |                     |                         |                       |                   |             | Type/Filter   | Exp.        |
| CC24959   | HD 886       | 00 0805      | +14 3740            | 22 1320                 |                       | 04 09E            |             |               | 305         |
| 60        | Comp         |              |                     |                         |                       |                   |             | F4r<br>Clear  | 60s         |
| 61        |              |              |                     |                         |                       |                   |             | TUNG<br>Clear | 225s        |
| 70        | FLATS x10    |              |                     |                         |                       | 04 05E            | +15°        |               |             |
| 71        | BIAS(A)      |              |                     |                         |                       |                   |             |               |             |
| 72        |              |              |                     |                         |                       | 00 00             | +140°       | F4r<br>Clear  | *4<br>60/90 |
| 73        | comp/stellar |              | HARTMAN             |                         |                       |                   |             |               |             |

Note I noted Aug 16 that CC24969 seems to be 50% larger than other files. i.e. 2 150K bytes??



Spectr. Temp. ....

Dome Temp./Hum. ....

Transparency Conditions ... increasing cloud 272

Focus ... 6.78

Spectr. Temp. ....

Dome Temp./Hum. <sup>\*</sup> 13.5% 66.7%

| Exp. Mtr.           | Seeing | Pig. Mag. | Sp.  | Inst.       | Grating/Tilt  | Slit      | Emulsion | P.H.        | Program    | Remarks   | Quality |
|---------------------|--------|-----------|------|-------------|---------------|-----------|----------|-------------|------------|---|---------|
| 35,000              | 5"     | 2.80      | B2IV | CASS<br>CCD | 1800<br>G4446 | 306 $\mu$ | A298     | 27          |            | 7.2k mac, but sprout  |         |
|                     |        |           |      |             |               |           |          | 28          |            |   |         |
|                     |        |           |      |             |               |           |          | 29 <i>i</i> |            | MAX = 12k ADG   |         |
| <sup>**</sup> ideal |        |           |      |             |               |           |          | 30/31       | focus test | Right on e <sup>Ray</sup> 340                               |         |
|                     |        |           |      |             |               |           |          |             |            | All to worm s To Peaseus. [note TO-FTR directory this time] |         |

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p921

Mon/Tues

Date 1994 Aug 15/16... Observers ... Bl. / T. / S. / ... + Bill. Hodges

Emulsion Batches:

386... Time was 10 secs ahead

Note CSS 386 Time corrected after exp. CG24955

| Plate No.                       | Object                 | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T.    | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.    |
|---------------------------------|------------------------|--------------|---------------------|----------------------------|-----------------------|-------------------|-------------|---------------------------|---------|
| CG24974<br>75                   | Comp / Stellar HARTMAN |              |                     |                            |                       | 00 19W            |             | FeAr<br>Clear             | 60/60   |
| 76                              | Bias (4)               |              |                     |                            |                       |                   |             | FeAr<br>Clear             | 60      |
| 77                              | Comp                   |              |                     |                            |                       |                   |             | FeAr<br>Clear             | 60      |
| 78                              | HD 145122              | 16 04 16     | +17 28 16           | 20 03 43                   |                       | 1 28 W            |             | FeAr<br>Clear             | 83.5    |
| 79                              | Comp                   |              |                     |                            |                       |                   |             | FeAr<br>Clear             | 60 sec  |
| 80                              | Comp                   |              |                     |                            |                       |                   |             | FeAr<br>Clear             | 60 sec  |
| 81*                             | HD 157741              | 17 20 03     | +15 41 49           | <u>20 24 53</u>            |                       | 0 40.5W           |             | FeAr<br>Clear             | 125.5   |
| 82                              | Comp                   |              |                     |                            |                       |                   |             | FeAr<br>Clear             | 60 sec  |
| 83                              | BINS (4)               |              |                     |                            |                       |                   |             | FeAr<br>Clear             | 60 sec  |
| 84                              | Comp                   |              |                     |                            |                       |                   |             | FeAr<br>Clear             | 60 sec  |
| 85                              | HD 186205              | 19 37 54     | +08 59 00           | <del>20</del> 59 50        |                       |                   |             | FeAr<br>Clear             | 3078 s. |
| 86                              | Comp                   |              |                     |                            |                       |                   |             | FeAr<br>Clear             | 60 sec  |
| CG40362<br>63<br>66<br>67<br>68 | HD 187120<br>"<br>"    | 19 43 12     | +45 29              | } Do not use this set<br>→ |                       |                   |             | 1                         | 33 msec |
|                                 |                        |              |                     |                            |                       |                   |             | 2 x                       | 67 msec |
|                                 |                        |              |                     |                            |                       |                   |             | 4 x                       | 133 ms  |
|                                 |                        |              |                     |                            |                       |                   |             |                           |         |









CCD Spectr. Temp.  $-100.6^{\circ}\text{C}$  Dome Temp./Hum.  $14.9^{\circ}\text{C} \cdot 63\% \text{RH}$  Transparency Conditions  $\dots$  Fine  $\dots$  to  $\dots$  Slightly Hazy.

Focus  $\dots 6.74 / 6.77 \dots$

Spectr. Temp.  $\text{again } 90 \dots$  Dome Temp./Hum.  $\dots \dots \dots$   $24^{\circ}\text{C} \cdot 44\% \text{RH}$

| Exp. Mtr.       | Seeing | Filter Mag.  | Sp.   | Inst.       | Grating/Tilt                   | Slit              | Emulsion | P.H.  | Program            | Remarks   | Quality |
|-----------------|--------|--------------|-------|-------------|--------------------------------|-------------------|----------|-------|--------------------|---|---------|
|                 |        | 752          |       | CASS CCD    | 1800 $\mu\text{m}$ /<br>G=6065 | 306 $\mu\text{m}$ | 6604A    |       | Seeing Test        | NE Fan on only  |         |
|                 | 2.3    |              |       |             |                                |                   |          |       | "                  |   |         |
|                 |        |              |       |             |                                |                   |          | 14    |                    |   |         |
| 203             |        | $\beta=9.21$ | B251b |             |                                |                   |          | 15    | Bl $\nu$ - He star | MAX Emission H $\alpha$ 1000ADU                               |         |
| 2011            | 3"     | "            | "     |             |                                |                   |          | 16    | Bl $\nu$ - He star | $\sim 7.5\text{K}$ max adu                                    |         |
|                 |        |              |       |             |                                |                   |          | 17    |                    |   |         |
|                 |        |              |       |             |                                |                   |          | 1     |                    |   |         |
|                 |        |              |       |             |                                |                   |          | 18    |                    |   |         |
|                 |        |              |       | max adu     | 10BK - 9.3K                    |                   |          | 14/20 |                    |   |         |
| <u>Set 6.77</u> |        | B $\beta$    |       | CASS CCD    | 1500 $\mu\text{m}$ /<br>G=4505 | 306 $\mu\text{m}$ | 4490A    | 3/4   |                    | ccd find 430 0 50 1024 4 1                                    |         |
|                 |        |              |       |             |                                |                   |          | 5     |                    |   |         |
| 2260            |        | $\beta=9.21$ | B251b | $\sim 85:1$ | S/N                            |                   |          | 6     |                    | max adu $\sim$ <del>150</del> <sup>70</sup> S/N = $\sim 80:1$ |         |
|                 |        |              |       |             |                                |                   |          | 7     |                    |   |         |

Pg # 3

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Date 1994 Aug 15/16 Observers Blm./Tn./Smt.....

Emulsion Batches:

.....  
.....  
.....

| Plate No. | Object     | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |      |
|-----------|------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|------|
|           |            |              |                     |                         |                       |                   |             | Type/Filter   | Exp. |
| CC25021   | Comp       |              |                     |                         |                       |                   |             | Fair<br>Clear | 60s  |
| 22        | BD+26 3835 | 20 09 36     | +26 27              | 00 38 59                |                       | 02 41 W           |             |               | 3329 |
| 23        | Comp       |              |                     |                         |                       |                   |             | Fair<br>Clear | 60s  |
| 24        | BI45 (4)   |              |                     |                         |                       |                   |             |               |      |
| 25        | COMP       |              |                     |                         |                       |                   |             | Fair<br>clear | 60   |
| 26        | HD 1061    | 00 09 50     | 08 16 00            | 01 46 05                |                       | 00 44 E           |             |               | 1453 |
| 27        | Comp       |              |                     |                         |                       |                   |             | Fair<br>clear | 60s  |
| 28        | Comp       |              |                     |                         |                       |                   |             | "             | 60s  |
| 29        | HD 21364   | 03 21 48     | +09° 23             | 02 19 10                |                       | 03 25 E           |             |               | 774  |
| 30        | Comp       |              |                     |                         |                       |                   |             | Fair<br>clear | 60s  |
| 31        | BIAS(4)    |              |                     |                         |                       |                   |             |               |      |
| 32        | Comp       |              |                     |                         |                       |                   |             | Fair<br>clear | 60s  |
| 33        | HD 1061    | 00 09 50     | 08 16 00            | 02 44 49                |                       | 00 13 W           |             |               | 1363 |
| 34        | Comp       |              |                     |                         |                       |                   |             | Fair<br>clear | 60s  |

Spectr. Temp.  $-100.6^{\circ}\text{C}$  ... Dome Temp./Hum.  $13.4^{\circ}\text{C}/70.0\%$  Transparency Conditions ... clear little haze ...

Focus ... 6.77

Spectr. Temp.  $9.0$  ... Dome Temp./Hum. ...  $\lambda$

| Exp. Mtr. | Seeing | Ptg. Mag.             | Sp.     | Inst.    | Grating/Tilt       | Slit      | Emulsion | P.H. | Program    | Remarks                        | Quality |
|-----------|--------|-----------------------|---------|----------|--------------------|-----------|----------|------|------------|--------------------------------|---------|
|           |        |                       |         | CASS CCD | 1800/4mm<br>G=4565 | 306 $\mu$ | *AA90A   | 8    |            | Actual central lambda          |         |
| 3939      | 3.4"   | B                     | 816-9.3 | B8       | M105:              | S/W       |          | 9    | Bln        | S/N=110:1 max adu ~ 1800 adu.  |         |
|           |        |                       |         |          |                    |           |          | 10   |            |                                |         |
|           |        |                       |         |          |                    |           |          | 11   |            |                                |         |
| 15,670    | 3"     | MPS<br>615            | A9s     |          |                    |           |          | 12c: | Sp Bin Bln | S/N > 200/1<br>0.83 day period |         |
|           |        |                       |         |          |                    |           |          | 13c: |            |                                |         |
|           |        |                       |         |          |                    |           |          | 14c: |            |                                |         |
| 36100     | 4"     | 366                   | B8p     |          | ~ 375:             | S/W       |          | 15c: | Sp Bin Bln | S/N ~ 350/1<br>9 HADU max      |         |
|           |        |                       |         |          |                    |           |          | 17   |            |                                |         |
|           |        |                       |         |          |                    |           |          | 1c:  |            |                                |         |
|           |        |                       |         |          |                    |           |          | 21   |            |                                |         |
| 15,500    | 2.3"   | <del>615</del><br>A9s | A9s     |          | ~ 215:             | S/W       |          | 22   | Sp Bin Bln |                                |         |
|           |        |                       |         |          |                    |           |          | 23   |            |                                |         |





Spectr. Temp. .... Dome Temp./Hum.  $+12.4^{\circ}\text{C}$  76.4% Transparency Conditions . 1.4cr ... clouds, haze.

Focus ..... 6.77 .....

Spectr. Temp. .... Dome Temp./Hum.  $+12.8^{\circ}\text{C}$  75.7%

| Exp. Mtr.                               | Seeing | Pig. Mag.   | Sp. | Inst.       | Grating/Tilt   | Slit      | Emulsion | P.H. | Program    | Remarks                               | Quality |
|---|--------|-------------|-----|-------------|----------------|-----------|----------|------|------------|---------------------------------------|---------|
|   |        |             |     | CHSS<br>CCD | 1800<br>G 4565 | 306 $\mu$ | 4490A    | 24c  |            |                                       |         |
| 1800                                    | 3"     | 8.6<br>-9.3 | B8  | ~20:1       | SIN            |           |          | 25   | Sp Bin     | Skys ok in this direction<br>far W !! |         |
|   |        |             |     |             |                |           |          | 26   |            |                                       |         |
|   |        |             |     |             |                |           |          | 1    |            |                                       |         |
|   |        |             |     |             |                |           |          | 27   |            |                                       |         |
| 17878                                   | 2"     | 6.15        | A9s | ~210:1      | SIN            |           |          | 28   |            | MAX 4900 ADU                          |         |
|   |        |             |     |             |                |           |          | 29   |            | CCO T = $-101.7^{\circ}\text{C}$      |         |
|   |        |             |     |             |                |           |          | 5    |            | max adu ~ 12.4k $\rightarrow$         |         |
|   |        |             |     |             |                |           |          | 3/4c | Focus test |                                       |         |
|   |        |             |     |             |                |           |          | 1c   |            |                                       |         |
| <p>ALL TO <i>NORM</i> &amp; PERSEUS</p> |        |             |     |             |                |           |          |      |            |                                       |         |

Date .19.9.4. Aug. 16.17. Observers .. [Bin]. III. / Sent....

Emulsion Batches:

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TUE / WED

NOTS: INTENTIONALLY GUIDING AWAY FROM HOT PIXEL

| Plate No.   | Object                          | R.A.<br>1900                    | Declination<br>1900               | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination        | Comparison    |               |
|-------------|---------------------------------|---------------------------------|-----------------------------------|-------------------------|-----------------------|-------------------|--------------------|---------------|---------------|
|             |                                 |                                 |                                   |                         |                       |                   |                    | Type/Filter   | Exp.          |
| cc 25065/16 | Hartman<br>Comp / Stellar       |                                 |                                   |                         |                       |                   |                    | FEAR<br>clear | 40/<br>65     |
| 67          | Bias (4)                        |                                 |                                   | 20:49                   |                       |                   |                    |               |               |
| 68          | Comp                            |                                 |                                   | 21:00:46                |                       |                   |                    | FEAR<br>clear | 60            |
| 69          | BD +26 3835                     | 20 09 36                        | +26 27 00                         | 21:03:50                |                       | 0.56 E            | Air Mass<br>1.0680 |               | 3000          |
| 70          | Comp                            |                                 |                                   | 21:55:11                |                       |                   |                    | FEAR<br>clear | 60            |
| 71          | Bias (4)                        |                                 |                                   | 21:56                   |                       |                   |                    |               |               |
| 72          | Comp                            |                                 |                                   | 22:07:58                |                       |                   |                    | FEAR<br>clear | 60            |
| 73          | HD 1061                         | 00 09 50                        | +08 26 00                         | 22:11:04                |                       | 4:10 E            | Air Mass<br>2.2910 |               | 1800          |
| 74          | Comp                            |                                 |                                   | 22:43:18                |                       |                   |                    | FEAR<br>clear | 60            |
| 75          | Bias (4)                        |                                 |                                   | 22:44                   |                       |                   |                    |               |               |
| 76/77       | Hartman<br>Comp / Stellar       |                                 |                                   |                         |                       |                   |                    |               |               |
| 78          | Comp                            |                                 |                                   | 23:38:26                |                       |                   |                    | FEAR<br>clear | 60            |
| 80          | HD 1061<br><del>HD 104852</del> | 00 09 50<br><del>17 58 07</del> | +08 26 00<br><del>+20 50 00</del> | 23:41:45                |                       | ~ 2:20 E          | Air mass<br>~ 1.6  |               | 1360          |
| 78          | Bias (4)                        |                                 |                                   | 23:37                   |                       |                   |                    |               | <del>60</del> |
| 81          | comp                            |                                 |                                   | 00:04:23                |                       |                   |                    | FEAR<br>clear | 60            |

Spectr. Temp. ... -1.00.0°C. Dome Temp./Hum. 18.3°/69.3% Transparency Conditions . hazy... , humid.....

Focus ..... 6.74.....

Spectr. Temp. c.g.f.m. = 9.2..

Dome Temp./Hum. ... NE fan on.

cdfmt 430 0 50 1024 41

| Exp. Mtr. | Seeing | Ptg. Mag.                   | Sp.                  | Inst.       | Grating/Tilt                    | Slit       | Emulsion     | P.H.  | Program          | Remarks  | Quality |
|-----------|--------|-----------------------------|----------------------|-------------|---------------------------------|------------|--------------|-------|------------------|--|---------|
|           |        |                             |                      | Cass<br>CCD | 1800 $\lambda$ / mm<br>G = 4565 | 36 $\mu$ m | 4490 Å       | 3/4   | Focus<br>TEST    |  |         |
|           |        |                             |                      |             |                                 |            |              | 1     |                  |  |         |
|           |        |                             |                      |             |                                 |            |              | 5     |                  |  |         |
| 4135      |        | <sup>B</sup><br>8.6-<br>9.3 | BB                   | ~110:1      | SIN                             |            |              | 6     | Sp Bin<br>[Bin]  | Max ADU ~1.3K  |         |
| 10830     |        |                             |                      |             |                                 |            |              | 7     |                  |  | 17.2°   |
|           |        |                             |                      |             |                                 |            |              | 1     |                  |  |         |
|           |        | V=<br>5.79                  | AgS                  |             |                                 |            |              | 8     | Sp. Bin<br>[Bin] |  |         |
| 9733      |        |                             |                      |             |                                 |            |              | 9     |                  | Max ADU ~2.6K  |         |
|           |        |                             |                      |             |                                 |            |              | 10    |                  |  | 15.9°   |
|           |        |                             |                      |             |                                 |            |              | 1     |                  |  | 15.8°   |
|           |        |                             |                      |             |                                 |            |              | 11/12 | Focus<br>TEST    | reset sp. controller<br>after big telescope move<br>to next position ~ LHA of 2.5W   |         |
| 11297     |        |                             |                      |             |                                 |            |              | 13    |                  |  |         |
| 15000     |        | V=<br>5.79                  | AgS<br><del>BB</del> | ~230:1      | SIN                             |            | MAX ADU 3.5K | 14    | Sp. Bin<br>[Bin] | - took numerous reads<br>of sp. controller + Jim bug<br>reads to get response<br>- dome getting wet, catwalk<br>humidity over 95%. |         |
|           |        |                             |                      |             |                                 |            |              | 1     |                  |  |         |
|           |        |                             |                      |             |                                 |            |              | 15    |                  |  |         |





Spectr. Temp. ~~107~~ <sup>-100.5°C</sup> Dome Temp./Hum. 15.6°/99.0% Transparency Conditions clear but 98% humidity <sup>284</sup>  
 in actuality.

Focus 6074

Spectr. Temp. gain = 9.2 Dome Temp./Hum. ....

NE fan on.

| Exp. Mtr.             | Seeing | Pig. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks                           | Quality |
|-----------------------|--------|-----------|-----|-------|--------------|------|----------|------|---------|-----------------------------------|---------|
| —                     |        |           |     |       |              |      |          | 1    |         | reset sp controller again         |         |
|                       |        |           |     |       |              |      |          | 16   |         | after moving teles cope to ~3.15u |         |
|                       |        |           |     |       |              |      |          | 1    |         | max adu ~13K → 12.4k              |         |
|                       |        |           |     |       |              |      |          | 3/4  |         |                                   |         |
| all to WORM & Pensers |        |           |     |       |              |      |          |      |         |                                   |         |

Date Aug 17/1980 Observers Hml./Smt.

Emulsion Batches:

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| Plate No. | Object                 | R.A.<br>1900                                    | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End                | Declination | Comparison<br>Type/Filter | Exp.  |
|-----------|------------------------|---|---------------------|-------------------------|-----------------------|----------------------------------|-------------|---------------------------|-------|
| CC251067  | Fouled<br>comp/stellar |   |                     | 20:30                   |                       |                                  |             | FeAr                      | 60/80 |
| 08        | Bras(A)                |   |                     | 21:47                   |                       | 2 <sup>h</sup> 55 <sup>m</sup> W |             |                           |       |
| 09        | comp                   |   |                     | 21:47                   |                       |                                  |             | FeAr                      | 60s   |
| 10        | HD 147394              | 16 <sup>h</sup> 16 <sup>m</sup> 44 <sup>s</sup> | 46° 33' 05"         | 21:49                   | 22:07                 | 3 <sup>h</sup> 15 <sup>m</sup> W |             |                           | 110s  |
| 11        | comp                   |   |                     | 22:09                   |                       |                                  |             | FeAr                      | 60s   |
| 12        | HD 147394              |   |                     | 22:11                   |                       | 3 <sup>h</sup> 29 <sup>m</sup> W |             |                           | 480s  |
| 13        | comp                   |   |                     | 22:20                   |                       |                                  |             | FeAr                      | 60s   |
| 14        | HD 147394              |   |                     | 22:24                   | 22:35                 | 3 <sup>h</sup> 43 <sup>m</sup> W |             |                           | 630s  |
| 15        | comp                   |   |                     | 22:36                   |                       |                                  |             | FeAr                      | 60s   |
| 16        | HD 147394              |   |                     | 22:37                   | 22:58                 | 4 <sup>h</sup> 6 <sup>m</sup> W  |             |                           | 110s  |
| 17        | Comp                   |   |                     | 22:54                   |                       |                                  |             | FeAr                      | 60s   |
| 18        | Bras(A)                |   |                     | 23:01                   |                       |                                  |             |                           |       |
| 19        | comp                   |   |                     | 23:04                   |                       | 2 <sup>h</sup> 53 <sup>m</sup> W |             | FeAr                      | 60s   |
| 20        | HD 160762              | 17 <sup>h</sup> 36 <sup>m</sup> 38 <sup>s</sup> | 46° 03' 34"         | 23:07                   | 23:13                 | 3 <sup>h</sup> 0 <sup>m</sup> W  |             |                           | 360s  |
| 21        | comp                   |   |                     | 23:15                   |                       |                                  |             | FeAr                      | 60s   |

Spectr. Temp.  $-100.5^{\circ}\text{C}$ .....Dome Temp./Hum.  $18.9^{\circ}\text{C}/76.0\%$ Transparency Conditions . hazy, high cirrus. (late) <sup>286</sup>Focus  $6.77$ .....Spectr. Temp.  $\text{again } 90$ .....Dome Temp./Hum.  $17.6^{\circ}\text{C}/81.2\%$ 

Format

415 050 1024 41

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst.    | Grating/Tilt   | Slit | Emulsion<br>$\lambda$ lambda | $\Phi$ H,<br>C1 | Program                            | Remarks  | Quality |
|-----------|--------|-----------|------|----------|----------------|------|------------------------------|-----------------|------------------------------------|--|---------|
|           |        |           |      | Cass/ccp | 1800<br>G=4446 | 3064 | 4298A                        | 3/4<br>1/2      | Hm1                                |  |         |
| 26,000    |        | 380       | B5II |          | S/N ~ 280/1    |      |                              | 5<br>6          |                                    | max ~ 7k adu centered on 15 <sup>th</sup> column<br>airmass 1.176 at start         |         |
| 30,200    |        |           |      |          |                |      |                              | 7               |                                    |  |         |
| 30,200    |        |           |      |          | S/N ~ 300/1    |      |                              | 8               | (Centered on 19 <sup>th</sup> col) | air mass ~ 1.214 at start<br>max ~ 7.2k adu  |         |
| 34,300    |        |           |      |          | S/N ~ 300/1    |      |                              | 9<br>10         | ~ 10.7 k max<br>ADU                | air mass ~ 1.245 at start<br>centered on 19 <sup>th</sup> col. centered on 21 col. |         |
| 35,200    |        |           |      |          |                |      |                              | 11              |                                    | 10.  |         |
| 35,200    |        |           |      |          | S/N ~ 320/1    |      |                              | 12              | ~ 11.1 k max<br>adu                | air mass ~ 1.294 at start<br>~ 1.35 at end   |         |
|           |        |           |      |          |                |      |                              | 13<br>14        |                                    |  |         |
| 35,400    |        | 380       | B3IV |          | S/N ~ 320/1    |      |                              | 15              |                                    | air mass 1.165 at start<br>max adu ~ 11k   |         |
|           |        |           |      |          |                |      |                              | 16              |                                    |  |         |



Date Aug. 17/19..... Observers ... Hrb./Smt.....

Emulsion Batches:

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| Plate No. | Object                 | R.A.<br>1900                                    | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End                 | Declination | Comparison  |       |
|-----------|------------------------|---|---------------------|-------------------------|-----------------------|-----------------------------------|-------------|-------------|-------|
|           |                        |   |                     |                         |                       |                                   |             | Type/Filter | Exp.  |
| CC25122   | H0160762               | 17 <sup>h</sup> 36 <sup>m</sup> 38 <sup>s</sup> | 46°03'39"           | 23:17                   | 23:24                 | 3 <sup>h</sup> 12 <sup>m</sup> W  |             |             | 360s  |
| 23        | comp                   |   |                     | 23:24                   |                       |                                   |             | FeAr        | 60s   |
| 24        | H0160762               |   |                     | 23:25                   | 23:33                 | 3 <sup>h</sup> 22 <sup>m</sup> W  |             |             | 400s  |
| 25        | comp                   |   |                     | 23:34                   |                       |                                   |             | FeAr        | 60s   |
| 26        | H0160762               |   |                     | 23:37                   | 23:52                 | 3 <sup>h</sup> 40 <sup>m</sup> W  |             |             | 905s  |
| 27        | comp                   |   |                     | 23:52                   |                       |                                   |             | FeAr        | 60s   |
| 28        | Bias(A)                |   |                     | 23:54                   |                       | 3 <sup>h</sup> 43 <sup>m</sup> W  |             |             |       |
| 29        | <del>H00886</del> comp |   |                     | 00:03                   |                       | -2 <sup>h</sup> 41 <sup>m</sup> E |             | FeAr        | 60s   |
| 30        | H0886                  | 00 <sup>h</sup> 08 <sup>m</sup> 05 <sup>s</sup> | 143°1'40"           | 00:07                   | 00:27                 | -2 <sup>h</sup> 17 <sup>m</sup> E |             |             | 1200s |
| 31        | comp                   |   |                     | 00:28                   |                       |                                   |             | FeAr        | 60s   |
| 32        | H0886                  |   |                     | 00:30                   | 01:03                 | -1 <sup>h</sup> 42 <sup>m</sup> E |             |             | 1800s |
| 33        | comp                   |   |                     | 01:15                   |                       | -1 <sup>h</sup> 25 <sup>m</sup> E |             | FeAr        | 60s   |
| 34        | Bias(A)                |   |                     | 01:19                   |                       | -1 <sup>h</sup> 25 <sup>m</sup> E |             |             |       |
| 35        | comp                   |   |                     | 01:20                   |                       |                                   |             | FeAr        | 60s   |
|           | H0886                  |   |                     | 01:23                   |                       |                                   |             |             | 460   |





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Emulsion Batches:

Date Aug. 17/48 ..... Observers Hml/Smt .....

| Plate No. | Object  | R.A.<br>1900                                    | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T.           | Hour Angle<br>End                 | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|---------|---|---------------------|-------------------------|---------------------------------|-----------------------------------|-------------|---------------------------|------|
| CC25137   | Bias(A) |   |                     | 2:17                    | -0 <sup>h</sup> 27 <sup>m</sup> |                                   |             |                           |      |
| 38        | comp    |   |                     | 2:18                    |                                 |                                   |             | FeAr                      | 60s  |
| 39        | HD 886  | 00 <sup>h</sup> 08 <sup>m</sup> 05 <sup>s</sup> | 14°3'40"            | 2:21                    | 2:25                            | -0 <sup>h</sup> 18 <sup>m</sup> E |             |                           | 240s |
| 40        | comp    |   |                     | 2:26                    |                                 |                                   |             | FeAr                      | 60s  |
| 41        | HD 886  |   |                     | 2:28                    | 2:32                            | -0 <sup>h</sup> 12 <sup>m</sup> E |             |                           | 220s |
| 42        | comp    |   |                     | 2:32                    |                                 |                                   |             | FeAr                      | 60s  |
| 43        | HD 886  |   |                     | 2:35                    | 2:39                            | -0 <sup>h</sup> 5 <sup>m</sup> E  |             |                           | 240s |
| 44        | comp    |   |                     | 2:40                    |                                 |                                   |             | FeAr 60                   | 60s  |
| 45        | HD 886  |   |                     | 2:42                    | 2:46                            | 0 <sup>h</sup> 2 <sup>m</sup> W   |             |                           | 240s |
| 46        | comp    |   |                     | 2:47                    |                                 |                                   |             | FeAr                      | 60s  |
| 47        | Bias(A) |   |                     | 2:49                    |                                 |                                   |             |                           |      |
| 48        | comp    |   |                     | 2:50                    |                                 |                                   |             | FeAr                      | 60s  |
| 49        | HD 886  |   |                     | 2:52                    | 3:00                            | 0 <sup>h</sup> 16 <sup>m</sup> W  |             |                           | 480s |
| 50        | comp    |   |                     | 3:01                    |                                 |                                   |             | FeAr                      | 60s  |
| 51        | HD 886  |   |                     | 3:03                    | 3:10                            | 0 <sup>h</sup> 26 <sup>m</sup> W  |             |                           | 420s |

Spectr. Temp.  $-100.5^{\circ}\text{C}$ Dome Temp./Hum.  $17.3^{\circ}\text{C} / 84.7\%$ Transparency Conditions *Hazy, clouds clearing, humid*

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Focus  $6.77$ Spectr. Temp. *again*  $10$ 

Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Pig. Mag. | Sp. | Inst.       | Grating/Tilt   | Slit        | Emulsion<br><i>Scambala</i> | P.H.<br><i>E<sub>1</sub></i> | Program | Remarks                             | Quality |
|-----------|--------|-----------|-----|-------------|----------------|-------------|-----------------------------|------------------------------|---------|-------------------------------------|---------|
|           |        |           |     | CCD<br>Case | 1800<br>G=4446 | 30um        | 4298A                       | 1/2<br>5                     | Hml     | clouds clearing (95%<br>on Calwell) |         |
| 32000     | 2.83   | B2IV      |     |             |                | S/N ~ 320/1 |                             | 6<br>7                       |         | max 10.8 Kadu<br>air mass ~ 1.1432  |         |
| 31600     |        |           |     |             |                | S/N ~ 320/1 |                             | 8                            |         | max 9 Kadu<br>air mass ~ 1.142      |         |
| 33600     |        |           |     |             |                |             |                             | 9<br>10                      |         | max 10 Kadu<br>air mass 1.1404      |         |
| 33900     |        |           |     |             |                | S/N ~ 320/1 |                             | 11<br>12                     |         | 12.8 K maxadu<br>air mass ~ 1.1402  |         |
|           |        |           |     |             |                |             |                             | 13<br>14                     |         |                                     |         |
| 33400     |        |           |     |             |                | S/N ~ 320/1 |                             | 15<br>16                     |         | 10.3 K maxadu                       |         |
| 32370     |        |           |     |             |                | S/N ~ 320/1 |                             | 17                           |         | 11 K maxadu<br>1.1465 air mass      |         |



Emulsion Batches:

Date Aug 17, 1958 Observers H.M./Smt

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| Plate No. | Object                           | R.A. 1900                                      | Declination 1900       | Starting Time E.S.T.    | Ending Time E.S.T. | Hour Angle End                   | Declination          | Comparison Type/Filter | Exp.    |
|-----------|----------------------------------|--|------------------------|-------------------------|--------------------|----------------------------------|----------------------|------------------------|---------|
| cc 25152  | comp                             |  |                        | 3:12                    |                    |                                  |                      | FeAr                   | 60s     |
| 53        | H0886                            | 0 <sup>h</sup> 08 <sup>m</sup> 05 <sup>s</sup> | 14 <sup>o</sup> 37'40" | 3:19                    | 3:22               | 0 <sup>h</sup> 38 <sup>m</sup> W |                      |                        | 400s    |
| 54        | comp                             |  |                        | 3:22                    |                    |                                  |                      | FeAr                   | 60s     |
| 55        | H0886                            |  |                        | 3:25                    | 3:32               | 0 <sup>h</sup> 48 <sup>m</sup> W |                      |                        | 420s    |
| 56        | comp                             |  |                        | 3:34                    |                    |                                  |                      | FeAr                   | 60s     |
| 57        | Bias (A)                         |  |                        | 3:35                    |                    | 0 <sup>h</sup> 51 <sup>m</sup> W |                      |                        |         |
| 58        | comp                             |  |                        | 3:36                    |                    |                                  |                      | FeAr                   | 60s     |
| 59-68     | 10 flats 225<br><del>H0886</del> |  |                        | <del>3:39</del><br>3:39 |                    | 0 <sup>h</sup> 20 <sup>m</sup> W | 15 <sup>o</sup> 06'N | Tung Clean             |         |
| 69-78     | 10x flats 225                    |  |                        |                         |                    | 3 <sup>h</sup> 35 <sup>m</sup> W | 46 <sup>o</sup> 28'N | Tung Clean             |         |
| 79/80     | Fourestest comp/stellar          |  |                        | 4:21                    |                    | 3 <sup>h</sup> 30 <sup>m</sup> W | 46 <sup>o</sup> 28'N | FeAr                   | 60s/80s |
| 81        | Bias (A)                         |  |                        | 4:28                    |                    | 3 <sup>h</sup> 30 <sup>m</sup> W |                      |                        |         |



Spectr. Temp. .... -101.7°C

Dome Temp./Hum. 16.7°C / 86.9%

Transparency Conditions Hazy, partial clouds humidity is high

Focus ..... 6.77

Spectr. Temp. .... again 90

Dome Temp./Hum. 17°C / 83.7%

| Exp. Mtr.              | Seeing | Pig. Mag. | Sp. | Inst.    | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks                              | Quality |
|------------------------|--------|-----------|-----|----------|--------------|------|----------|------|---------|--------------------------------------|---------|
|                        |        |           |     | CCD Case | 1800         | 30um | 4093A    | 18   | Hand    |                                      |         |
| 34100                  |        | 2.83      | BVT |          | 6=44HL       |      |          | 19   |         | 10.8K maxadu 330 S/W                 |         |
|                        |        |           |     |          |              |      |          | 20   |         |                                      |         |
| 11970                  |        |           |     |          |              |      |          | 21   |         | max 3.7K adu                         |         |
|                        |        |           |     |          |              |      |          | 22   |         |                                      |         |
|                        |        |           |     |          |              |      |          | 1/2  |         |                                      |         |
|                        |        |           |     |          |              |      |          | 23   |         |                                      |         |
|                        |        |           |     |          |              |      |          | 25   |         |                                      |         |
|                        |        |           |     |          |              |      |          | 24   |         | Clouded out at 3:40 EST Humidity 95% |         |
|                        |        |           |     |          |              |      |          | 3/4  |         |                                      |         |
|                        |        |           |     |          |              |      |          | 1/2  |         |                                      |         |
| All the PERSEUS & WORM |        |           |     |          |              |      |          |      |         |                                      |         |

293 pg#1 (Thur/Fri)

Date 1994 Aug 18/19 Observers [KK]/T./Smt.....

Emulsion Batches:

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| Plate No.                 | Object              | R.A.<br>1900                | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |                        |
|---------------------------|---------------------|-----------------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|------------------------|
|                           |                     |                             |                     |                         |                       |                   |             | Type/Filter   | Exp.                   |
| <del>CC 55182</del><br>83 | Comp 1 Stellar      | HARTMAN                     |                     |                         |                       |                   |             | FeNe<br>Clear | 40/70                  |
| 84                        | Comp                | <sup>2200</sup>             | <sup>2000</sup>     |                         |                       |                   |             | "             | 40                     |
| 85                        | NGC 6720            | 18 53 36                    | 33 03 00            | 21 15 35                |                       |                   |             |               | 466                    |
| 86                        | 'BIAS(4)            |                             |                     |                         |                       |                   |             |               |                        |
| 87                        | NGC 6720            | 18 53 36                    | +33 03              | 21 45 13                |                       | 0 30 W            |             |               | 375                    |
| 88                        | NGC 6720            | "                           |                     | 22 02 17                |                       |                   |             |               | 625                    |
|                           | <del>64 + 5.1</del> | <del>19 32 48</del>         | <sup>1950</sup>     |                         |                       |                   |             |               |                        |
| 89                        | 83 + 12.1           | 19 43 30                    | +50 24 00           | 22 24 57                |                       | 0 19 W            |             |               | 434                    |
| 90                        | 83 + 12.1           |                             |                     | 22 41 15                |                       | 0 38 W            |             |               | 488                    |
| 91                        | BIAS(4)             |                             |                     |                         |                       |                   |             |               |                        |
| 92                        | 64 + 5.1            | 19 32 48                    | +30 24 00           | 23 07 28                |                       | 0 08 W            |             |               | 204                    |
| 93                        | 64 + 5.1            | "                           | "                   | 23 11 58                |                       | 1 29 W            |             |               | 1150                   |
| 94                        | 64 + 5.1            | "                           | "                   | 20 16 54                |                       | <del>2 26 W</del> |             |               | <del>1150</del><br>696 |
| 195                       | BIAS(4)             |                             |                     |                         |                       |                   |             |               |                        |
| 196                       | NGC 7602            | <sup>1900</sup><br>23 21 06 | 41 59 00            | 00 42 02                |                       | 01 07 E           |             |               | 243                    |

CCD  
Spectr. Temp.  $-100.5^{\circ}\text{C}$

Dome Temp./Hum.  $21.5^{\circ}\text{C}/63.0\%$

Transparency Conditions *slight haze, bright moon.* 294

Focus *G73*

Spectr. Temp. *cgam 80*

Dome Temp./Hum.  $19.5^{\circ}\text{C}$  7A7<sup>9</sup>

NE FAN ON  
INCREASING HAZE

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.       | Grating/Tilt             | Slit              | Emulsion    | P.H. | Program | Remarks  | Quality |
|-----------|--------|-----------|-----|-------------|--------------------------|-------------------|-------------|------|---------|--|---------|
|           |        |           |     | CASS<br>CCD | 1800 $\mu$ /mm<br>G-487D | 306 $\mu$         | 4940F       |      |         | 410 0 50 1024 41   |         |
|           |        |           |     |             |                          | Slitless<br>setup |             |      |         | 440 0 160 1024 11<br>max adu $\sim$ 530                              |         |
|           | 1-2'   |           |     |             |                          | W of PIERS        | 1c. KK      |      |         | 440 0 240 1024 11<br>max adu $\sim$ 460                              |         |
|           |        |           |     |             |                          | E of PIERS        | 2 KK        |      |         |  |         |
|           |        |           |     |             |                          | E of PIERS.       | 1 KK        |      |         | 440 0 160 1024 11<br>guided on central "star"<br>max adu $\sim$ 1700 |         |
|           |        |           |     |             |                          | W of PIERS.       | 2 KK        |      |         | max adu $\sim$ 1200  |         |
|           |        |           |     |             |                          |                   | 1R2         |      |         |  |         |
|           |        |           |     |             |                          | W of PIERS        | 3 KK        |      |         | short test max adu $\sim$ 540  |         |
|           |        |           |     |             |                          | W of PIERS        | 4 KK        |      |         | " $\sim$ 1700  |         |
|           |        |           |     |             |                          | E of "            | 5 KK        |      |         | very hazy  |         |
|           |        |           |     |             |                          | E of Piers        | 6c. ktk pgn |      |         | all to WORM<br>& PERSEUS   |         |







Spectr. Temp. .... Dome Temp./Hum. 18.5°C / 77.2% Transparency Conditions ... *hazy* .....

Focus ... 6.7.3. → 6.7.0

*at focus test*

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mir. | Seeing | Pig. Mag. | Sp.    | Inst.        | Grating/Tilt       | Slit              | Emulsion | P.H.  | Program       | Remarks  | Quality    |
|-----------|--------|-----------|--------|--------------|--------------------|-------------------|----------|-------|---------------|--|------------|
|           |        |           |        | CASS<br>CED  | 1800h/mm<br>G=4870 | slitless<br>Setup | 4940Å    | 5c    | KK            | Tel East side  |            |
|           |        |           |        |              |                    |                   |          | 7c    | "             | Tel West side  | MAX 520ADU |
|           |        |           |        |              |                    |                   |          | 8c    | "             |  |            |
|           |        |           |        |              |                    |                   |          | 9c    | "             | Refocused fiddl star<br>ON slitless <del>10000</del> 10000 Pect, pos'n |            |
|           |        |           |        |              |                    |                   |          |       |               | Looks Best of all.   |            |
|           |        |           | 2ndary | mirror focus | 2699               | 306µ              |          | 10/11 | (Right in)    | 410 0 50 1024 41 ccd/inst<br>focus for Brightest Line)                 |            |
|           |        |           | "      | "            | 2640               | slitless          |          | 3c    |               | 440 0 160 1024 11 ccd/inst<br>Tel West side                            |            |
|           |        |           |        |              |                    |                   |          | 1     |               |  |            |
|           |        |           |        |              |                    |                   |          | 4     | Tel East side |  |            |
|           |        |           |        |              |                    |                   |          | 6     | " " "         |  |            |
|           |        |           |        |              |                    |                   |          |       |               | special seeing test  |            |
|           |        |           |        |              |                    |                   |          |       |               | (Above 306µ slit)  |            |
|           |        |           |        |              |                    |                   |          |       |               | normal seeing test   |            |
|           |        |           |        |              |                    |                   |          |       |               | All to WORM & Persens  |            |
|           |        |           |        |              |                    |                   |          |       |               | Tel west side  |            |

Pg #1  
297

Date 1994 Aug 19/20... Observers [Rm]/Tn/Smt.....

Emulsion Batches:

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| Plate No.             | Object                            | R.A.<br>1900                    | Declination<br>1900    | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination     | Comparison<br>Type/Filter | Exp.  |
|-----------------------|-----------------------------------|---------------------------------|------------------------|-------------------------|-----------------------|-------------------|-----------------|---------------------------|-------|
| CC 25209              | BIAS(4)                           |                                 |                        |                         |                       |                   |                 |                           |       |
| <sup>210</sup><br>211 | Comp / Stellar                    | HURTMAN                         |                        |                         |                       | 00 15W            | +46 00          | FeAr<br>clear             | 60/70 |
| 212                   | COMP                              |                                 |                        |                         |                       |                   |                 | FeAr<br>clear             | 60    |
| 213                   | HD 173297                         | 18 39 20                        | -20 45 00              | 20 27 47                |                       | 00 12 E           |                 |                           | 481   |
| 14                    | COMP                              |                                 |                        |                         |                       |                   |                 | FeAr<br>clear             | 60    |
| 15                    | <del>HD 173297</del>              |                                 |                        | <del>20 57 07</del>     |                       |                   |                 |                           |       |
| 15                    | FLAT                              |                                 |                        |                         |                       |                   |                 | Tung<br>1/2 Ap            | 4     |
| <del>18</del>         | <del>BIAS(4)<br/>COMP</del>       |                                 |                        |                         |                       |                   |                 | FeAr<br>clear             | 60    |
| 18                    | HD 180583<br><del>HD 173297</del> | 19 <del>22</del> 00<br>18 39 20 | +27 45 00<br>-20 45 00 | 21 12 52<br>20 27 47    |                       | 00 03 E           |                 |                           | 1128  |
| 19                    | COMP                              |                                 |                        |                         |                       |                   |                 | FeAr<br>clear             | 60    |
| 20                    | COMP                              |                                 |                        |                         |                       |                   |                 | FeAr<br>clear             | 60    |
| 21                    | HD 203156                         | 21 15 23                        | 37 49 00               | 21 48 36                |                       |                   |                 |                           |       |
| 22                    | COMP                              |                                 |                        |                         |                       |                   |                 | FeAr<br>clear             | 60    |
| 23-28                 | <del>BIAS(4)</del> FLAT x 6       |                                 |                        |                         |                       | 01 40 E           | 38 <sup>0</sup> | Tung<br>1/2 Ap            | 7     |
| 29                    | BIAS(4)                           |                                 |                        |                         |                       |                   |                 |                           |       |
| 30/31                 | COMP/STELLAR                      | HARTMANN                        |                        |                         |                       | 1 41 E            | +38 11          | FeAr<br>clear             | 60/65 |

falling to much.

Spectr. Temp. .... Dome Temp./Hum.  $21.0^{\circ}\text{C}/78.3\%$  Transparency Conditions *clearing ... partly cloudy ... hazy*  
 Focus .....  $6:68$  .....  
 Spectr. Temp. (gain)  $90$  ..... Dome Temp./Hum.  $119^{\circ}\text{F}$  .....  $430050102441$  ccdftnt DOME FANS OFF

| Exp. Mtr. | Seeing | Ptg. Mag.                  | Sp.                | Inst.    | Grating/Tilt                           | Slit      | Emulsion                           | P.H.          | Program | Remarks   | Quality |
|-----------|--------|----------------------------|--------------------|----------|--|-----------|------------------------------------|---------------|---------|---|---------|
|           |        |                            |                    | CASS CCD | 1800 $\lambda/\text{mm}$<br>$G = 5190$ | 300 $\mu$ | <del>4100A</del><br>5400A<br>5407A | 1<br>3/4<br>5 |         |   |         |
| 2150      |        | $\langle v \rangle = 7.48$ | $\sim 60\text{Ib}$ |          |  | $> 100:1$ | S/N                                | 6             | Rm pgm  | 91% natural humidity.   |         |
|           |        |                            |                    |          |  |           |                                    | 7             |         |   |         |
|           |        |                            |                    |          |  |           |                                    | 6             | Rm pgm  |   |         |
|           |        |                            |                    |          |  |           |                                    | 8             |         |   |         |
|           |        |                            |                    |          |  |           |                                    | 9             |         |   |         |
|           |        |                            |                    |          |  |           |                                    | 10            | Rm pgm. | $\sim 10\text{K} + \text{max adu.}$   |         |
|           |        |                            |                    |          |  |           |                                    | 11            |         |   |         |
|           |        |                            |                    |          |  |           |                                    | 12            |         |   |         |
|           |        |                            |                    |          |  |           |                                    | 13            | Rm pgm  | through cloud. cut short<br>good for solar absorption<br>& sky emission ONLY. |         |
|           |        |                            |                    |          |  |           |                                    | 14            |         |   |         |
|           |        |                            |                    |          |  |           |                                    | 14            |         |   |         |
|           |        |                            |                    |          |  |           |                                    | 1             |         |   |         |
|           |        |                            |                    |          |  |           |                                    | 3/4           |         |   |         |

All to Worm & Perseus.







CCD  
Spectr. Temp.  $-100^{\circ}\text{C}$  ..... Dome Temp./Hum.  $+20.5^{\circ}\text{C}$   $71.9\% \text{H}$  Transparency Conditions *clearing (slowly)* ..... 300

Focus  $6.68$  .....

<sup>GAIN</sup>  
Spectr. Temp.  $90^{\circ}\text{C GAIN}$  ..... Dome Temp./Hum. ....

430 0 50 1024 41 CCDPMT

| Exp. Mtr. | Seeing | Mag. | Sp.               | Inst.       | Grating/<br>Tilt | Slit                 | Emulsion | P.H.          | Program                | Remarks                                      | Quality |
|-----------|--------|------|-------------------|-------------|------------------|----------------------|----------|---------------|------------------------|--|---------|
|           |        |      |                   | CASS<br>CCD | 1800nm<br>G=6065 | 306 $\mu$            | 6604F    | 3/4c          | focus Test             |  |         |
|           |        |      |                   |             |                  |                      |          | 1c            |                        |  |         |
|           |        |      |                   |             |                  |                      |          | 5             |                        |  |         |
| 8,700     | 4"     | 6.14 | AOV <sub>un</sub> |             |                  |                      |          | 6c            | Telluric pm            | sky still bright at start<br>AIR MASS = 1.68 |         |
|           |        |      |                   |             |                  |                      |          | 7             |                        | cloud lingering through                      |         |
|           |        |      |                   |             |                  |                      |          | 8             |                        |  |         |
| 2200      | 3.5"   | 7.73 | G8III             |             |                  |                      |          | 9             | std'ed and seeing test |  |         |
|           |        |      |                   |             |                  |                      |          | 10            |                        |  |         |
|           |        |      |                   |             |                  |                      |          | 1c            |                        |  |         |
| 2200      |        | 7.73 | G8III             |             |                  | Above 306 $\mu$ slit |          |               | Seeing test            | No lens on tonight                           |         |
|           |        |      |                   |             |                  |                      |          |               | " "                    | Dome SW, wind NORTH                          |         |
|           |        |      |                   |             |                  |                      |          | 11            |                        |  |         |
| 1950      | 3"     | 8.86 | B25Ib             |             |                  |                      |          | 12            | SpBin Bln              | MAX @ H <sub>+</sub> = 5800 ADU              |         |
|           |        |      |                   |             |                  |                      |          | 15c           |                        | MAX $\approx$ 13.3 KADU                      |         |
|           |        |      |                   |             |                  |                      |          | <del>1c</del> |                        |  |         |

301 pg#2

SUN/mor

Emulsion Batches:

Date 1994 Aug. 21.22.... Observers [Bl.] Th... III... too....

NOTE: INTENTIONALLY BLINDING AWAY FROM HOT PIXEL

| Plate No.                 | Object           | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.  |
|---------------------------|------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| CC252 <sup>65</sup><br>66 | Comp / Stellar   | HARTMAN      |                     |                         |                       | 2 30E             | +54 28      | FaA<br>Clear              | 60/60 |
| <sup>67</sup><br>68       | Comp / Stellar   | HARTMAN      |                     |                         |                       | 2 25E             | "           |                           | 40/65 |
| <sup>69</sup><br>70       | BiAs (4)<br>Comp |              |                     | 21:55:00                |                       |                   |             | FaA<br>Clear              | 60sec |
| 71                        | HD 235679        | 21 5500      | 754 01 00           | 21 59 09                |                       | 1:16 E            |             | FaA<br>Clear              | 3557  |
| 72                        | Comp             |              |                     | 23:01:12                |                       |                   |             | FaA<br>Clear              | 60s   |
| 73                        | Bias (4)         |              |                     |                         |                       |                   |             |                           |       |
| 74                        | Comp             |              |                     | 23:09:37                |                       |                   |             | FaA<br>Clear              | 60    |
| 75                        | BD +26 3835      | 20 09.6      | +26° 27'            | 23:10:57                |                       | 1:31 W            |             |                           | 3034  |
| 76                        | Comp             |              |                     | 00:02:40                |                       |                   |             | FaA<br>Clear              | 60    |
| 77                        | Comp             |              |                     | 00:07:33                |                       |                   |             | FaA<br>Clear              | 60    |
| 78                        | HD 1061          | 0 09 50      | +8° 16'             | 00:10:15                |                       | 1:51 E            |             |                           | 1732  |
| 79                        | Comp             |              |                     | 00:41:01                |                       |                   |             | FaA<br>Clear              | 60    |
| 80                        | Bias (4)         |              |                     | 00:42                   |                       |                   |             |                           |       |
| 81                        | Comp             |              |                     | 00:49:06                |                       |                   |             | FaA<br>Clear              | 60    |

Spectr. Temp. .... Dome Temp./Hum. 18.1°C 74.6% Transparency Conditions P.S.T. cloudy 302

Focus 6.68

Spectr. Temp. .... Dome Temp./Hum. .... Note - we were not at 4490Å. Ratered too late

| Exp. Mtr.       | Seeing | Pig. Mag.         | Sp.     | Inst.      | Grating/Tilt        | Slit      | Emulsion                | P.H. | Program     | Remarks   | Quality |
|-----------------|--------|-------------------|---------|------------|---------------------|-----------|-------------------------|------|-------------|---|---------|
| set 6.68        |        |                   |         | CHS<br>CCD | 1800<br>G=6065      | 306 $\mu$ | 660A                    | 3/4  | focustest   |   |         |
| 6.72            |        |                   |         |            | 1800h/min<br>G=4065 | 306 $\mu$ | <del>3800</del><br>3800 | 3/4  | " "         |   |         |
|                 |        |                   |         |            |                     |           |                         | 1    |             |   |         |
|                 |        |                   |         |            |                     |           |                         | 5    |             |   |         |
| 2800            | 3.4"   | B<br>9.21         | B2.5 Ib |            |                     |           |                         | 6    | Sp Bin Blk  | SIN 50:1<br>Airflow end t. 0.510                            | 1       |
|                 |        |                   |         |            |                     |           |                         | 16ci |             |   | 17.6°   |
|                 |        |                   |         |            |                     |           |                         | 1ci  |             |   |         |
| <del>1400</del> |        | B=<br>8.6-<br>9.3 | BB      |            |                     |           |                         | 17ci | Sp. Bin Blk |   |         |
| 3000            |        |                   |         |            |                     |           |                         | 18ci |             | Note: hot pixel bleeding<br>along as well as across columns | 17.3°   |
|                 |        |                   |         |            |                     |           |                         | 19ci |             |   |         |
|                 |        |                   |         |            |                     |           |                         | 20ci |             |   |         |
| 14300           |        | 6.15              | A9s     |            |                     |           |                         | 21ci | Sp Bin Blk  | S/H=90/1  | 17.3°   |
|                 |        |                   |         |            |                     |           |                         | 22ci |             |   |         |
|                 |        |                   |         |            |                     |           |                         | 1    |             |   |         |
|                 |        |                   |         |            |                     |           |                         | 23ci |             | sp controller needed<br>reset after big move                | 17.0°   |



303  
page #3

Emulsion Batches:

Date ..... 94. Aug. 21/22 Observers ... FBnJ./Tn... + III.  
S. M. M.

| Plate No. | Object                 | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.  |
|-----------|------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| CC25282   | HD 164852              | 17 58 06     | +20° 50'            | 00:51:30                | 01:09:30              | 4:51 W            |             |                           | 1089  |
| 83        | Comp                   |              |                     | 01:10:40                |                       |                   |             | FeAr<br>Clear             | 60s   |
| 84        | Comp                   |              |                     | 01:15:48                |                       |                   |             | FeAr<br>Clear             | 60s   |
| 85        | HD 1061                | 00 09 50     | +8° 16'             | 01 18 42                |                       | 06 44 E           |             |                           | 1685  |
| 86        | Comp                   |              |                     |                         |                       |                   |             | FeAr<br>Clear             | 60    |
| 87        | BIAS(A)                |              |                     |                         |                       |                   |             |                           |       |
| 88        | Comp                   |              |                     | 01 56 04                |                       |                   |             | FeAr<br>Clear             | 60s   |
| 89        | BD+26 38/35            | 20 09 36     | +26 27 00           | 01 58 48                |                       | 4:08 W            |             |                           | 2267  |
| 90        | Comp                   |              |                     |                         |                       |                   |             | FeAr<br>Clear             | 60s   |
| 91-99     | FLAT x 9               |              |                     |                         |                       |                   |             | Jung<br>Clear             | 60s   |
| CC25300   | Comp / stellar Hertman |              |                     |                         |                       | 4 15 W            | +27°        |                           | 40/50 |
| 2         | Bias (4)               |              |                     |                         |                       |                   |             |                           |       |
| 3         | Comp                   |              |                     | 03:09:02                |                       |                   |             | FeAr<br>Clear             | 60s   |
| 4         | HD 1061                | 00 09 50     | 8° 16'              | 03:11:42                |                       |                   |             |                           | 1314  |
| 5         | Comp                   |              |                     | 03:34:52                |                       |                   |             | FeAr<br>Clear             | 60s   |



Spectr. Temp. 101.6°C ... Dome Temp./Hum. 17.0°/79.9% Transparency Conditions ... Some cloud

Focus ... 6.72

Spectr. Temp.  $\log_{10} = 9.2$  ... Dome Temp./Hum. ....

G value should be 4565  
 Not intended C LAMBDA ...

| Exp. Mtr.  | Seeing   | Pig. Mag.   | Sp.  | Inst.    | Grating/Tilt             | Slit        | Emulsion                  | P.H.   | Program    | Remarks            | Quality |
|--|----------|-------------|------|----------|--------------------------|-------------|---------------------------|--|------------|--------------------|---------|
| 13475  | 6"       | B = 5.19    | B3TV | less CCD | 1800 $\mu$ m<br>G = 4065 | 306 $\mu$ m | 3800<br><del>3800</del> A | 24c  | Sp Bin Bln |                    | 16.9°   |
|  |          |             |      |          |                          |             |                           | 25c  |            |                    |         |
|  |          |             |      |          |                          |             |                           | 26c  |            |                    |         |
| 17000  | 5"       | 6.15        | A9s  |          |                          |             |                           | 27c  | Sp Bin Bln | S/N 100/1          |         |
|  |          |             |      |          |                          |             |                           | 28c  |            |                    |         |
| Exp Meter rebalanced, (It had been falling back) before taking |          |             |      |          |                          |             |                           | Note checked that Hariman mask was Home<br>It was. I was suspicious about discrepancy of counts vs S/N |            |                    |         |
| 2575   | 4"       | 8.6<br>-9.3 | B8   |          |                          |             |                           | 29   | Sp Bin Bln |                    | 16.2°   |
|  |          |             |      |          |                          |             |                           | 30c  |            |                    |         |
|  |          |             |      |          |                          |             |                           | 31c  |            |                    |         |
| 6.72   | still ok |             |      | less CCD | 1800 $\mu$ m<br>G = 4565 | 306 $\mu$ m | 4490 A                    | 3/4c   | Focus Test | some focus is good | 16.1°   |
|  |          |             |      |          |                          |             |                           | 1  |            |                    |         |
|  |          |             |      |          |                          |             |                           | 5c   |            |                    |         |
| 17830  | 7.3"     | 6.15        | A9s  |          |                          |             |                           | 6c   | Sp Bin Bln |                    | 15.8°   |
|  |          |             |      |          |                          |             |                           | 7c   |            |                    |         |

Date ... 94. Aug. 21. 1922... Observers ... [Blair] / T. C. ... + III

Sun Man

| Plate No. | Object     | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC 253 06 | Comp       |              |                     | 03:38:52                |                       |                   |             | Fe Ar<br>clear            | 60   |
| 7         | HD 21364   | 3 21.9       | +9° 23'             | 03:42:05                |                       | 1:54 E            |             |                           | 366  |
| 8         | Comp       |              |                     | 03:49:37                |                       |                   |             | Fe Ar<br>clear            | 60s  |
| 10        | Comp       |              |                     | 03:54:02                |                       |                   |             | Fe Ar<br>clear            | 60s  |
| 10        | HD 1061    | 00 09 50     | +8° 16'             | 03:56:24                |                       | 1:50 W            |             |                           | 1346 |
| 9         | Bias (4)   |              |                     | 03:51                   |                       |                   |             |                           |      |
| 12        | Comp       |              |                     | 04:21:09                |                       |                   |             | Fe Ar<br>clear            | 60s  |
| 13        | HD 1061    | 00 09 50     | +8° 16'             | 04:25:49                |                       | 2:17 W            |             |                           | 1293 |
| 14        | Comp       |              |                     | 04:48:34                |                       |                   |             | Fe Ar<br>clear            | 60s  |
| 15<br>34  | FLATS x 20 |              |                     |                         |                       |                   |             | TUNG<br>clear             | 15sq |
| 35        | Bias (4)   |              |                     | 05:05                   |                       |                   |             |                           |      |

Spectr. Temp. ... 100.4 C ... Dome Temp./Hum. ... 15.0°/78.0% Transparency Conditions ... C/aur

Focus ... 6.72

Spectr. Temp. ... Dome Temp./Hum. ... 15.0° 77.2%

| Exp. Mtr.                | Seeing | Ptg. Mag.    | Sp.             | Inst.       | Grating/Tilt       | Slit      | Emulsion | P.H. | Program     | Remarks        | Quality |
|--------------------------|--------|--------------|-----------------|-------------|--------------------|-----------|----------|------|-------------|----------------|---------|
|                          |        |              |                 | Cass<br>CCD | 1300x1mm<br>G=4565 | 306<br>μm | 4490 Å   | 8ci  |             |                |         |
| 38103                    |        | B =<br>3.160 | BBp             |             |                    |           |          | 9ci  | Sp. Bin Bln | Max ADU 12.4K  | 15.0°   |
| 12481                    |        |              |                 |             |                    |           |          | 10ci |             |                |         |
| 16480                    | 3"     | 6.15         | A9 <sub>2</sub> |             |                    |           |          | 12ci | Sp. Bin Bln |                |         |
|                          |        |              |                 |             |                    |           |          | 1    |             |                |         |
|                          |        |              |                 |             |                    |           |          | 13ci |             |                | 15.2°   |
| 16750                    |        | 6.15         | A9 <sub>3</sub> |             |                    |           |          | 14ci | Sp. Bin Bln |                |         |
| 12310                    |        |              |                 |             |                    |           |          | 15ci |             |                |         |
|                          |        |              |                 |             |                    |           |          | 16ci |             | ≈ 12 K ADU max |         |
| All to Perseus = W O R M |        |              |                 |             |                    |           |          |      |             |                |         |

307

pp#1 Mon/Tues

Date 1994 Aug 22/23

Observers Blh./Tn + Bill Hodges

Emulsion Batches:

.....  
 .....  
 .....

| Plate No.  | Object         | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.  |
|------------|----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| CC25336/37 | Comp / Stellar |              |                     |                         |                       | 00 00             | 46 00       |                           |       |
| 38         | BIAS (4)       |              |                     |                         |                       |                   |             |                           |       |
| 39         | Comp           |              |                     |                         |                       |                   |             | Felt<br>Clear             | 60sec |
| 40         | RD+26 3835     | 20 09 36     | +26 27              | 20 09 48                |                       | 01:24 E           |             |                           | 3/69  |
| 41         | Comp           |              |                     |                         |                       |                   |             | Felt<br>Clear             | 60sec |
| 42         | BIAS (4)       |              |                     |                         |                       |                   |             |                           |       |
| 43         | Comp           |              |                     |                         |                       |                   |             | Felt<br>Clear             | 60s   |
| 44         | HD 1061        | 00 09 50     | +8 16               | 21 16 25                |                       | 04:42 E           |             |                           | 1726  |
| 45         | Comp           |              |                     |                         |                       |                   |             | Felt<br>Clear             | 60s   |
| 46         | Comp           |              |                     |                         |                       |                   |             | n                         | 1     |
| 47         | HD 235679      | 21 55 00     | +54 01              | 22 56 36                |                       | 01 29 E           |             |                           | 2735  |
| 48         | Comp           |              |                     |                         |                       |                   |             | Felt<br>Clear             | 60s   |
| 49         | BIAS (4)       |              |                     |                         |                       |                   |             |                           |       |
| 50         | Comp           |              |                     |                         |                       |                   |             | Felt<br>Clear             | 60s   |
| 51         | HD 1061        | 00 09 50     | +8 16               | 22 53 10                |                       | 03:12 E           |             |                           | 13/6  |
| 52         | Comp           |              |                     |                         |                       |                   |             | Felt<br>Clear             | 60s   |



CCD  
 Spectr. Temp. ... -100°C ..... Dome Temp./Hum. 19.2°C 57% Transparency Conditions ... Fine ..... 308  
 Focus ... 6.72 .....  
 Spectr. Temp. ... 90.0°C in ... Dome Temp./Hum. 16.4°C 66.7%  
 E-LINIDA 415 0 50 1024 4 1 CCD FMT

| Exp. Mtr. | Seeing | Pig. Mag.               | Sp.            | Inst.       | Grating/Tilt         | Slit | Emulsion          | P.H. | Program    | Remarks                                  | Quality |
|-----------|--------|-------------------------|----------------|-------------|----------------------|------|-------------------|------|------------|--|---------|
| 19.2°C    |        |                         |                | CASS<br>CCD | 1800 l/min<br>G=4558 | 306u | 4475 <sup>+</sup> | 3/4  |            | *The exact center as<br>Tom now wants it |         |
|           |        |                         |                |             |                      |      |                   | 1    |            |  |         |
|           |        |                         |                |             |                      |      |                   | 5    |            |  |         |
| 4630      | 2-3"   | <del>8.6</del><br>9.3   | <del>B83</del> |             |                      |      |                   | 6    | Sp Bin Bln | DR VUL<br>7100/1 S/N                     |         |
|           |        |                         |                |             |                      |      |                   | 7    |            |  |         |
|           |        |                         |                |             |                      |      |                   | 1ci  |            |  |         |
|           |        |                         |                |             |                      |      |                   | 8    |            |  |         |
| 10,900    | 4-6"   | <del>6.15</del><br>6.15 | A9s            |             |                      |      |                   | 9    | Sp Bin Bln |  |         |
|           |        |                         |                |             |                      |      |                   | 10   |            |  |         |
|           |        |                         |                |             |                      |      |                   | 11   |            |  |         |
| 3660      | 2-3"   | 9.21                    | B215J6         |             |                      |      |                   | 12   | SB Bln     |  |         |
|           |        |                         |                |             |                      |      |                   | 13   |            |  |         |
|           |        |                         |                |             |                      |      |                   | 1ci  |            |  |         |
|           |        |                         |                |             |                      |      |                   | 13.  |            |  |         |
| 14500     | 3"     | 6.15                    | A9s            |             |                      |      |                   | 15   | Sp Bin Bln |  |         |
|           |        |                         |                |             |                      |      |                   | 16   |            |  |         |



Spectr. Temp. .... Dome Temp./Hum. .... Transparency Conditions .. *Fine* .....Focus ... *6:7.2* .....Spectr. Temp. .... Dome Temp./Hum. *+14.2°C 69.3% H* .....

| Exp. Mtr.     | Seeing                 | Ptg. Mag.                 | Sp.        | Inst.           | Grating/Tilt                              | Slit                            | Emulsion          | P.H.                   | Program                   | Remarks                                | Quality |
|---------------|------------------------|---------------------------|------------|-----------------|---|---------------------------------|-------------------|------------------------|---------------------------|--|---------|
|               | <i>2-3"</i>            | <i>✓</i><br><i>7.60</i>   | <i>F2V</i> |                 |   |                                 |                   |                        | <i>Seeing Test</i>        | <i>Light N wind</i>                    |         |
|               |                        |                           |            |                 | <i>ABOVE</i>                              | <i>306<math>\mu</math> slit</i> |                   |                        | <i>• •</i>                |  |         |
|               |                        |                           |            | <i>CASS CCD</i> | <i>1800/n/mm<br/>G=4558</i>               | <i>306<math>\mu</math></i>      | <i>4475Å</i>      | <i>1c<sub>1</sub></i>  | <i>Multiple</i>           | <i>spectrograph control failures</i>   |         |
|               |                        |                           |            |                 |   |                                 |                   | <i>17c<sub>1</sub></i> |                           |  |         |
| <i>16,500</i> | <i>3"</i>              | <i>B=</i><br><i>6.15</i>  | <i>A9s</i> |                 |   |                                 |                   | <i>18c<sub>1</sub></i> | <i>Sp Bin Bln</i>         | <i>MAX 4400 Å</i>                      |         |
|               |                        |                           |            |                 | <i>note the long time between stellar</i> | <i>and</i>                      | <i>just comp.</i> | <i>19c<sub>1</sub></i> | <i>Sp contr problems.</i> |  |         |
|               | <i>while on HD1061</i> |                           |            |                 |   |                                 |                   | <i>20</i>              | <i>MAX = 11-12 K Å.</i>   |  |         |
|               |                        |                           |            |                 |   |                                 |                   | <i>21</i>              |                           |  |         |
| <i>17000</i>  | <i>2-3"</i>            | <i>B</i><br><i>6.15</i>   | <i>A9s</i> |                 |   |                                 |                   | <i>21</i>              | <i>Sp Bin Bln</i>         | <i>MAX <math>\approx</math> 4700 Å</i> |         |
| <i>4900</i>   |                        |                           |            |                 | <i>counts noted for 60sec FeAr</i>        |                                 |                   | <i>22</i>              |                           |  |         |
|               |                        |                           |            |                 |   |                                 |                   | <i>1c<sub>1</sub></i>  |                           |  |         |
|               |                        |                           |            |                 |   |                                 |                   | <i>23</i>              |                           |  |         |
| <i>3630</i>   | <i>3"</i>              | <i>8.6</i><br><i>-9.3</i> | <i>B8</i>  |                 |   |                                 |                   | <i>24</i>              | <i>Sp Bin Bln</i>         | <i>Lines single (narrow)</i>           |         |
|               |                        |                           |            |                 |   |                                 |                   | <i>25</i>              |                           |  |         |
|               |                        |                           |            |                 |   |                                 |                   | <i>1c<sub>1</sub></i>  |                           |  |         |





Spectr. Temp. .... Dome Temp./Hum. .... Transparency Conditions *Fine* .....

Focus *6.72* .....

Spectr. Temp. .... Dome Temp./Hum. .... *LAMBDA*

| Exp. Mtr. | Seeing            | Ptg. Mag. | Sp. | Inst.      | Grating/Tilt       | Slit      | Emulsion          | P.H.          | Program    | Remarks                          | Quality |
|-----------|-------------------|-----------|-----|------------|--------------------|-----------|-------------------|---------------|------------|----------------------------------|---------|
|           | <del>2-3"</del>   | 615       |     | CMS<br>CCD | 1800 $\lambda$ /mm | 306 $\mu$ | 4475 $\text{\AA}$ | 26            |            |                                  |         |
| 15,500    | 2-3"              | 615       | A9s |            |                    |           |                   | 27            | Sp Bin Blk |                                  |         |
|           |                   |           |     |            |                    |           |                   | <del>28</del> |            |                                  |         |
|           |                   |           |     |            |                    |           |                   | 28            |            |                                  |         |
| 36 000    | 2 $\frac{1}{2}$ " | 3166      | B8p |            |                    |           |                   | 29            | Sp Bin-Blk |                                  |         |
|           |                   |           |     |            |                    |           |                   | 30            |            |                                  |         |
|           |                   |           |     |            |                    |           |                   | 31            |            | Dome T = +13.5 $^{\circ}$ C      |         |
| 15,200    | 3"                | 615       | A9s |            |                    |           |                   | 32            | Sp Bin Blk | CCDT = -100 $\pm$ 5 $^{\circ}$ C |         |
|           |                   |           |     |            |                    |           |                   | 50 $\mu$      |            |                                  |         |
|           |                   |           |     |            |                    |           |                   | 100           |            |                                  |         |

\* MOTORIZED GRATING WHEEL DRIVER N/A \*  
 Emulsion Batches:  
 GRATING ANGLES SET BY HAND... \*

Date 1994 Aug. 23.124 Observers [Blm] III / Tn.....

Tue/Wed

NOTE: INTENTIONALLY GUIDING AWAY FROM HOT PIXEL

| Plate No.      | Object                    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination        | Comparison    |           |
|----------------|---------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|--------------------|---------------|-----------|
|                |                           |              |                     |                         |                       |                   |                    | Type/Filter   | Exp.      |
| 95<br>cc 25396 | Hertman<br>Comp 1 stellar |              |                     |                         |                       |                   | 00 45W +37°        | Fear<br>clear | 60/60     |
| 97             | Bias (4)                  |              |                     | 20:11                   |                       |                   |                    |               |           |
| 98             | Comp                      |              |                     | 20:30:15                |                       |                   |                    | Fear<br>clear | 60s       |
| 99             | NOVA Cyg 92               | 2027 43      | 52 1739             | 20:41:14                |                       |                   |                    |               | 300       |
| 400            | NOVA Cyg 92               | "            | "                   | 20:50:51                |                       | 0:50E             |                    |               | 3453      |
| 1              | Comp                      |              |                     | 21:50:23                |                       |                   |                    | Fear<br>clear | 60s       |
| 2              | Bias (4)                  |              |                     |                         |                       |                   |                    |               |           |
| cg 40396/99    | HD 187120                 | 19 43 12     | 45 29 00            | ~ 22:00                 |                       |                   |                    |               | 4 x 67ms  |
| cg 40400/401   | "                         | "            | "                   | "                       |                       |                   |                    |               | 2 x 133ms |
| 3              | Comp                      |              |                     | 22:12:06                |                       |                   |                    | Fear<br>clear | 60        |
| 4              | HD 221491                 | 23 27 29     | 34 24 02            | 22:14:13                |                       | 303E              | Air mass<br>1.2390 |               | 1364      |
| 5              | Comp                      |              |                     | 22:38:51                |                       |                   |                    | Fear<br>clear | 60        |
| 6              | Bias (4)                  |              |                     | 22:40                   |                       |                   |                    |               |           |
| 7              | Comp                      |              |                     | 22:45:16                |                       |                   |                    | Fear<br>clear | 60        |
| 8              | Nova Cas 93               | 23 36 59     | 56 57 45            | 22 47 18                |                       | 2:58 E            |                    |               | 300       |

Spectr. Temp. .... Dome Temp./Hum. ... 13.0° / .54.5% Transparency Conditions ... Fine - increasing haze  
 Focus ... 6.70 ..... Full moon  
 Spectr. Temp. ... 2.9.0 ..... Dome Temp./Hum. .... 13.0 / .54.5 415 0.50 1024 41 CCDFAST

| Exp. Mtr. | Seeing | Plg. Mag.          | Sp.    | Inst.      | Grating/Tilt                | Slit              | Emulsion                 | P.H. | Program                    | Remarks   | Quality |
|-----------|--------|--------------------|--------|------------|-----------------------------|-------------------|--------------------------|------|----------------------------|---|---------|
|           |        |                    |        | Cass<br>CD | 1800 l/m<br>50.2°<br>Starts | 306<br>mm         | 6503<br><del>6604A</del> | 6/7  | Focus<br>TEST              |   |         |
|           |        |                    |        |            |                             |                   |                          | 1/5  |                            |   |         |
|           |        |                    |        |            |                             |                   |                          | 8    | NOVA                       |   |         |
| 36        | Fine   | 12-3 <sup>?</sup>  | emo    |            |                             |                   |                          | 9    | ↓                          | Max ADU 0.2K<br>test exposure → fits there          |         |
| 355       |        | 12-3 <sup>?</sup>  | emo    |            |                             |                   |                          | 10   | NOVA                       | Max ADU 0.5K<br>SBK, autoguide used                 | 17.1    |
|           | ←      |                    |        |            |                             |                   |                          | 11   |                            | mostly sky counts                                   |         |
|           |        |                    |        |            |                             |                   |                          | 1    |                            |   |         |
|           | 2.2"   | 7.52               | K0 III |            |                             | above 306 μm slit |                          |      | Seeing Test                | NO FANS, DOME WNW                                   |         |
|           | "      | "                  | "      |            |                             |                   |                          |      | - " -                      | NO WIND OR UV LIGHT <sup>east</sup> <sub>wind</sub> |         |
|           |        |                    |        |            |                             |                   |                          | 12ci |                            |   | 16.3°   |
| 9000      |        | 6.65               | B8V    |            |                             |                   |                          | 13ci | Bln Telluric<br>Std Seccal | Δra 004<br>Δdec 0124                                | 15.8°   |
|           |        |                    |        |            |                             |                   |                          | 14ci |                            |   |         |
|           |        |                    |        |            |                             |                   |                          | 1ci  |                            |   |         |
|           |        |                    |        |            |                             |                   |                          | 15ci |                            |   |         |
| 40        | 1.2"   | 10-11 <sup>?</sup> | emo    |            |                             |                   |                          | 16ci | NOVA                       | 1.65 Air mass<br>test exposure - Max ADU            | 0.5K    |



Date .. 9.4. Aug 23. 12.4. Observers ... [Bin] III / T. ....  
Tue Wed

Emulsion Batches:

Guiding .. and .. from hut pixed

\* GRATING ANGLE S.E.T. MANUALLY \*

| Plate No. | Object                    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison     |       |
|-----------|---------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|----------------|-------|
|           |                           |              |                     |                         |                       |                   |             | Type/Filter    | Exp.  |
| α 25409   | Novae Cas 93              | 23 36 59     | 56 57 45            | 22:53:14                |                       | 2 22 E            |             |                | 2100  |
| 10        | Comp                      |              |                     | 22:29:02                |                       |                   |             | Fe Ar<br>clear | 60    |
| 11-30     | FLAT x 20                 |              |                     | <del>22:52:56</del>     |                       | 2 10 E            | +57 27      | Fe Ar<br>1/4   | 6     |
| 31        | Bias (4)                  |              |                     | 23:43 <del>48</del>     |                       |                   |             |                |       |
| 32/<br>33 | Hurtman<br>Comp   Stellar |              |                     |                         |                       | 1 55 E            | +57 27      | Fe Ar<br>clear | 60/60 |
| 34/<br>35 | Hartman Comp   stellar    |              |                     |                         |                       |                   |             | Fe Ar<br>clear | 40/55 |
| 36        | Comp                      |              |                     | 00:28:23                |                       |                   |             | Fe Ar<br>clear | 60    |
| 37        | HD 1061                   | 00 09 50     | +8° 16'             | 00:31:05                |                       | 1 25 E            |             |                | 1579  |
| 38        | Comp                      |              |                     | 01:04:14                |                       |                   |             | Fe Ar<br>clear | 60    |
| 39        | Bias (4)                  |              |                     | 01:05                   |                       |                   |             |                |       |
| 40        | Comp                      |              |                     | 01:24:40                |                       |                   |             | Fe Ar<br>clear | 60    |
| 41        | BD + 263835               | 20 09 36     | +26° 27'            | 01:27:14                |                       | 7 06 W            |             |                | 3599  |
| 42        | Comp                      |              |                     | 02:28:19                |                       |                   |             | Fe Ar<br>clear | 60    |
| 43        | Bias (4)                  |              |                     |                         |                       |                   |             |                |       |
| 44        | Comp                      |              |                     | 02:32:15                |                       |                   |             | Fe Ar<br>clear | 60    |



Spectr. Temp. .... Dome Temp./Hum. 15.7°/71.7% Transparency Conditions Sl. hazy  
 Focus ..... 6.70 \* 6.74 Full moon  
 Spectr. Temp. ... again = 9.0 Dome Temp./Hum. ....

| Exp. Mtr. | Seeing                 | Ptg. Mag.               | Sp. | Inst.       | Grating/Tilt        | Slit      | <del>Emission</del><br>Wavelength | P.H. | Program    | Remarks  | Quality |
|-----------|------------------------|-------------------------|-----|-------------|---------------------|-----------|-----------------------------------|------|------------|--|---------|
| 291       | 2.2"                   |                         |     | less<br>CCD | 1800/1mm<br>Slit 2° | 306<br>μm | 6563Å                             | 17c  | NOVA       | brighter than nearby<br>field stars<br><del>(weak)</del> |         |
|           | ← mostly skyward       |                         |     |             |                     |           |                                   | 18   |            |  |         |
|           |                        |                         |     |             |                     |           |                                   | 19   |            | MAX 10K ADU  |         |
|           |                        |                         |     |             |                     |           |                                   | 1    |            |  |         |
|           |                        |                         |     |             |                     |           |                                   | 6/7  | focus test |  |         |
|           |                        |                         |     |             | 1800/1mm<br>42.7°   | 306       | 4475Å                             | 6/7  | focus test |  |         |
|           |                        |                         |     |             |                     |           |                                   | 21   | Sp. Bin    | obs. through some cloud                                  | 15.1°   |
| 11890     | 2.6<br><del>6.75</del> | 6.15<br><del>6.75</del> | A9s | MAX         | 3.9 K               |           |                                   | 22   | Bin atten  | sp controller died                                       | 15.0    |
|           |                        |                         |     |             |                     |           |                                   | 23c  |            |  |         |
|           |                        |                         |     |             |                     |           |                                   | 1    |            |  |         |
| 12934     |                        |                         |     |             |                     |           |                                   | 24   |            | sp controller died<br>again after last move              | 14.7°   |
| 2282      | 2.6<br>-4.3            | 8.6<br>-9.3<br>B8       | B8  |             |                     |           |                                   | 25   | Sp Bin Blk | 3x → shut off for await                                  |         |
|           |                        |                         |     |             |                     |           |                                   | 26   |            |  | 14.6°   |
|           |                        |                         |     |             |                     |           |                                   | 1    |            |  |         |
|           |                        |                         |     |             |                     |           |                                   | 27   |            |  |         |











CCP  
Spectr. Temp.  $-101.7^{\circ}\text{C}$

Dome Temp./Hum.  $21.6^{\circ}\text{C}/71.1\%$

Transparency Conditions clear

Focus  $b, b, b$

DOME FANS OFF

Spectr. Temp.  $\text{gain } 9.0$

Dome Temp./Hum. ....

ccdfmt 415 0.50 10-

| Exp. Mtr. | Seeing | Pv.<br>Mag.                   | Sp.         | Inst.       | Grating/<br>Tilt                        | Slit      | Emulsion | P.H. | Program    | Remarks  | Quality                |
|-----------|--------|-------------------------------|-------------|-------------|---|-----------|----------|------|------------|--|------------------------|
|           |        |                               |             | CASS<br>CCD | 1500/1mm<br>angle = just below<br>55.0° | 306 $\mu$ | 6399*    |      | focus Test | * different from usual<br>6400 to separate data  |                        |
|           |        |                               |             |             |   |           |          | 5    |            |  |                        |
| 7500      | 2"     | $\langle v \rangle =$<br>6.19 | F6I-IIb     |             |   |           |          | 6    | Rm pgn     | $\sim 8.2\text{K max adu}$<br>1.49 day period $\approx 300/1$<br>using star or header fixed. | S/N                    |
|           |        |                               |             |             |   |           |          | 7    |            |  |                        |
|           |        |                               |             |             |   |           |          | 1    |            |  |                        |
|           |        |                               |             |             |   |           |          | 8c   |            |  |                        |
| 5250      | 3"     | 7.48                          | G0Ib        |             |   |           |          | 9c   | Rm pgn     |  | S/N<br>$\approx 300/1$ |
|           |        |                               |             |             |   |           |          | 10   |            |  |                        |
|           |        |                               |             |             |   |           |          | 1    |            |  |                        |
|           |        |                               |             |             |   |           |          | 11   |            |  |                        |
| 1870      | 2"     | 9.1<br>-9.8                   | F8<br>-G2Ib |             |   |           |          | 12   | Rm pgn     | S/N<br>170/1 (max 3000 ADU)  |                        |
|           |        |                               |             |             |   |           |          | 13   |            |  |                        |
| 1500      | 1.2"   |                               |             |             |   |           |          | 14   | Rm pgn     | $\sim 2000$ max adu  |                        |
|           |        |                               |             |             |   |           |          | 15   |            |  |                        |
|           |        |                               |             |             |   |           |          | 1    |            |  |                        |

Pg #2  
321

Date 1994 Aug 25/26 Observers [Rm] Smt/Tn.....

Emulsion Batch#: .....

| Plate No.      | Object               | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.            |
|----------------|----------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----------------|
| CC25489        | Comp                 |              |                     |                         |                       |                   |             | FeAr<br>clear             | 60              |
| 90             | HO203156             | 21 15 23     | 37 49 00            | 22 44 03                |                       | 00 27E            |             |                           | 456             |
| 91             | Comp                 |              |                     |                         |                       |                   |             | FeAr<br>clear             | 60              |
| 92             | Comp                 |              |                     |                         |                       |                   |             | "                         | "               |
| 93             | HD214975             | 22 36 55     | +56 18 24           | 23 02 31                |                       | 01 01 E           |             |                           | 2273            |
| 94             | Comp                 |              |                     |                         |                       |                   |             | FeAr<br>clear             | 60 <sub>g</sub> |
| 95             | bias(4)              |              |                     |                         |                       |                   |             |                           |                 |
| 96             | Comp                 |              |                     |                         |                       |                   |             | FeAr<br>clear             | 60              |
| 97             | HD 180583            | 19 12 00     | 27 45 00            | 00 00 24                |                       | 02 54 W           |             |                           | 585             |
| 98             | Comp                 |              |                     |                         |                       |                   |             | FeAr<br>clear             | 60              |
| CG10402<br>-05 | HO207754             | 21 46 12     | +43 25              |                         |                       |                   |             | 4 x                       | 67ms            |
| 06<br>-07      | "                    | "            | "                   |                         | 00 20                 |                   |             | 2 x                       | 133ms           |
| 99             | Comp                 |              |                     |                         |                       |                   |             | FeAr<br>clear             | 60              |
| 500            | HD 222368            | 23 34 48     | 05 05 00            | 00 31 26                | <del>00 31 26</del>   | 01 05 W           |             |                           | 129             |
| 01             | <del>Comp</del> Comp |              |                     |                         |                       |                   |             | FeAr<br>clear             | 60              |

CCP  
Spectr. Temp.  $-101.7^{\circ}\text{C}$

Dome Temp./Hum.  $20.0^{\circ}\text{C}/81.3\%$

Transparency Conditions ... clear ... humid ... though. 322

Focus  $6.66$

Spectr. Temp. ....

Dome Temp./Hum. ....  
CLIMBDA

| Exp. Mtr. | Seeing | Ptg. Mag.    | Sp.                | Inst.       | Grating/Tilt | Slit           | Emulsion            | P.H. | Program              | Remarks                                    | Quality |
|-----------|--------|--------------|--------------------|-------------|--------------|----------------|---------------------|------|----------------------|--|---------|
|           |        |              |                    | CASS<br>CCD | 1800h/mm     | 306 $\mu$      | 6400 $\mu$<br>6399A | 16   |                      |  |         |
| 8050      | 1"     | V=<br>58.59  | FZ                 |             |              |                |                     | 17   | Rem Pgm              | $\sim 9.4$ max adu                         |         |
|           |        |              |                    |             |              |                |                     | 18   |                      |  |         |
|           |        |              |                    |             |              |                |                     | 19   |                      |  |         |
| 4000      |        | (V)=<br>8.40 | $\sim 60\text{Ib}$ |             |              |                |                     | 20   | Rem pgn              | $\sim 6.8\text{K}$ max adu<br>1st priority |         |
|           |        |              |                    |             |              |                |                     | 21   |                      |  |         |
|           |        |              |                    |             |              |                |                     | 1    |                      |  |         |
|           |        |              |                    |             |              |                |                     | 22   |                      |  |         |
| 8190      |        |              |                    |             |              |                |                     | 23   | Rem pgn.             | $\sim 9.3\text{K}$ max adu                 |         |
|           |        |              |                    |             |              |                |                     | 24   |                      |  |         |
|           | 1-2'   | 732          |                    |             | Above        | 306 $\mu$ slit |                     |      | Seeing test Done WNW |  |         |
|           |        |              |                    |             |              |                |                     |      | " "                  | no wind.                                   |         |
|           |        |              |                    |             |              |                |                     | 25   | RV Std.              |  |         |
| 9050      |        | 4.13         | F7V                |             |              |                |                     | 26   | ↓                    | $\sim 11.7\text{K}$ max adu                |         |
|           |        |              |                    |             |              |                |                     | 27   |                      |  |         |

Pg #3  
323

Date 1994 Aug 25/26 Observers [Rm] Smt / Tn

Emulsion Batches:

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| Plate No. | Object         | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison     |       |
|-----------|----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|----------------|-------|
|           |                |              |                     |                         |                       |                   |             | Type/Filter    | Exp.  |
| cc25502   | bias (4)       |              |                     |                         |                       |                   |             |                |       |
| 03        | Comp           |              |                     |                         |                       |                   |             | Fe Ar<br>clear | 60    |
| 04        | HD 177724      | 19 00 49     | 13 42 53            | 00 45 10                |                       |                   |             |                | 54    |
| 05        | Comp           |              |                     |                         |                       |                   |             | Fe Ar<br>clear | 60    |
| 06        | FLATS x 10     |              |                     |                         |                       |                   |             | Tung<br>Ap 1/4 | 6sec  |
| -15       |                |              |                     |                         |                       | 00 04W +34°       |             | Fe Ar<br>clear | 60/65 |
| 16/17     | Comp / stellar | HARTMAN      |                     |                         |                       |                   |             |                |       |
| 18        | bias (4)       |              |                     | 01 19                   |                       |                   |             |                |       |



CCD  
Spectr. Temp. -10.7°C  
Focus 6.66  
Spectr. Temp. ....

Dome Temp./Hum. 19.1°C / 86.9%

Transparency Conditions clear, humid

~~CCD Serial 415, 0, 5, 10, 20, 30, 1~~

| Exp. Mtr.             | Seeing | Pig. Mag. | Sp.               | Inst. | Grating/Tilt           | Slit | Emulsion | P.H. | Program    | Remarks           | Quality |
|-----------------------|--------|-----------|-------------------|-------|------------------------|------|----------|------|------------|-------------------|---------|
|                       |        |           |                   |       | 1800ln/mm<br>55° angle | 306  | 6399?    | 1    |            |                   |         |
|                       |        |           |                   |       |                        |      |          | 28   |            |                   |         |
| 10400                 |        | 2.99      | AOI <sub>in</sub> |       |                        |      |          | 29   | Tell. Std. | in 10.3K max ada. |         |
|                       |        |           |                   |       |                        |      |          | 30   |            |                   |         |
|                       |        |           |                   |       |                        |      |          | 5    |            | MAX 13K ADC       |         |
|                       |        |           |                   |       |                        |      |          | 3/4  | focus test | → 12.6K           |         |
|                       |        |           |                   |       |                        |      |          | 1    |            |                   |         |
| All to WORM & PERSEUS |        |           |                   |       |                        |      |          |      |            |                   |         |

T = +19.1°C

325

pg #1  
 Date Aug 20/27/94 Observers Amal/Smt III  
 Fri/Sat.

Emulsion Batches:  
 GRATINGS MOTOR... N/A  
 NOTE: GRATINGS ANGLE  
 DETERMINED... MANUALLY

| Plate No. | Object                   | R.A.<br>1900                                    | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End                | Declination | Comparison    |      |
|-----------|--------------------------|---|---------------------|-------------------------|-----------------------|----------------------------------|-------------|---------------|------|
|           |                          |   |                     |                         |                       |                                  |             | Type/Filter   | Exp. |
| cc 25519  | bias (4)                 |   |                     | 19:55                   |                       |                                  |             |               |      |
| 20/21     | Hartman<br>Comp/ Stellar |   |                     |                         |                       |                                  |             | FeAr<br>Clear |      |
| 22        | Comp                     |   |                     | 21:32:25                |                       |                                  |             | FeAr<br>Clear | 60s  |
| 23        | HD 147394                | 16 <sup>h</sup> 16 <sup>m</sup> 44 <sup>s</sup> | 46° 33' 05"         | 20:39:18                |                       | 2 <sup>h</sup> 38 <sup>m</sup> W |             |               | 900s |
| 24        | comp                     |   |                     | 20:56:01                |                       |                                  |             | FeAr<br>Clear | 60s  |
| 25        | comp                     |   |                     | 21:17                   |                       |                                  |             | FeAr          | 60s  |
| 26        | HD 147394                |   |                     | 21:22                   |                       | 3 <sup>h</sup> 14 <sup>m</sup> W |             |               | 360s |
| 27        | Comp                     |   |                     | 21:29                   |                       |                                  |             | FeAr          | 60s  |
| 28        | HD 147394                |   |                     | 21:32                   |                       | 3 <sup>h</sup> 24 W              |             |               | 380s |
| 29        | Comp                     |   |                     | 21:41                   |                       |                                  |             | FeAr<br>Clear | 60s  |
| 30        | HD 147394                |   |                     | 21:43                   |                       | 3 <sup>h</sup> 33 W              |             |               | 370s |
| 31        | comp                     |   |                     | 21:51                   |                       |                                  |             | FeAr<br>Clear | 60s  |
| 32        | HD 147394                |   |                     | 21:53                   |                       | 3 <sup>h</sup> 42 W              |             |               | 310s |
| 33        | comp                     |   |                     | 21:59                   |                       |                                  |             | FeAr<br>Clear | 60s  |
| 34        | Bias (4)                 |   |                     | 22:01                   |                       |                                  |             |               |      |

Spectr. Temp. .... 190.0° Dome Temp./Hum. 21.7° / 71%  
 Focus ..... 6.66 (perfect!) perfect  
 Spectr. Temp. .. gain = 9.2.. Dome Temp./Hum. ....

Transparency Conditions high cirrus, little clouds...  
 dome pens on  
 415 0 50 1024 41 ccd fnt

| Exp. Mtr. | Seeing | Pig. Mag. | Sp. | Inst.    | Grating/Tilt                       | Slit      | Emulsion | Exp. Time | Program    | Remarks   | Quality |
|-----------|--------|-----------|-----|----------|------------------------------------|-----------|----------|-----------|------------|---|---------|
|           |        |           |     | Cass CCD | 1300.1mm<br>4.75°                  | 306<br>μm | 4298A    | 1         | Hand       | BOTH FANS ON  |         |
|           |        |           |     |          |                                    |           |          | 3/4       | Focus TEST | focus test.   |         |
|           |        |           |     |          |                                    |           |          | 5         |            | SE FAN OFF  |         |
| 30850     | 3.84   | B5II      |     |          |                                    |           |          | 7         |            | airmass at start 1.105 HA at end 2h 23m<br>airmass at end 1.1298<br>(cc 22+24 both at same grating angles as cc 23) |         |
|           |        |           |     |          |                                    |           |          | 9         |            | max 9 kadu - off centre (6 motor out) - set by hand   |         |
|           |        |           |     |          | 4.7°<br>matched to previous night. |           |          | 10        |            | max 8.1 kadu  |         |
|           |        |           |     |          |                                    |           |          | 11        |            | max 8.1K adu.   |         |
|           |        |           |     |          |                                    |           |          | 12        |            | max 13.2 kadu   |         |
| 31750     |        |           |     |          |                                    |           |          | 13        |            | airmass at end 1.254  |         |
|           |        |           |     |          |                                    |           |          | 14        |            |   |         |
|           |        |           |     |          |                                    |           |          | 15        |            |   |         |
| 35400     |        |           |     |          |                                    |           |          | 16        |            | airmass at end 1.277  |         |
|           |        |           |     |          |                                    |           |          | 17        |            | max 13 kadu   |         |
| 35800     |        |           |     |          |                                    |           |          | 18        |            |   |         |
|           |        |           |     |          |                                    |           |          | 19        |            |   |         |
|           |        |           |     |          |                                    |           |          | 12        |            | overdue bias  |         |

All of WORM



Date Aug 26/37

Observers Hml./Smt

## Emulsion Batches:

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 .....  
 .....

| Plate No. | Object                | R.A.<br>1900                                    | Declination<br>1900    | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End              | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------------------|---|------------------------|-------------------------|-----------------------|--------------------------------|-------------|---------------------------|------|
| cc25535   | comp                  |   |                        | 22:06                   |                       |                                |             | FeAr<br>Clear             | 60s  |
| 36        | HD160762              | 17 <sup>h</sup> 36 <sup>m</sup> 38 <sup>s</sup> | 46 <sup>o</sup> 03'34" | 22:09                   |                       | 2 <sup>h</sup> 37 <sup>m</sup> |             |                           | 245s |
| 37        | comp                  |   |                        | 22:14                   |                       |                                |             | FeAr                      | 60s  |
| 38        | HD160762              |   |                        | 22:18                   |                       | 2 <sup>h</sup> 44 <sup>m</sup> |             |                           | 260s |
| 39        | comp                  |   |                        | 22:21                   |                       |                                |             | FeAr<br>clear             | 60s  |
| 40        | HD160762              |   |                        | 22:23                   |                       | 2 <sup>h</sup> 51 <sup>m</sup> |             |                           | 250s |
| 41        | comp                  |   |                        | 22:30                   |                       |                                |             | FeAr                      | 60s  |
| 42        | HD160762              |   |                        | 22:35                   |                       | 3 <sup>h</sup> 03 <sup>m</sup> |             |                           | 260s |
| 43        | comp                  |   |                        | 22:43                   |                       |                                |             | FeAr<br>clear             | 60s  |
| 44        | HD160762              |   |                        | 22:46                   |                       | 3 <sup>h</sup> 14 <sup>m</sup> |             |                           | 270s |
| 45        | comp                  |   |                        | 22:52                   |                       |                                |             | FeAr<br>clear             | 60s  |
| 46        | HD160762              |   |                        | 22:56                   |                       | 3 <sup>h</sup> 25 <sup>m</sup> |             |                           | 260s |
| 47        | comp                  |   |                        | 23:02                   |                       |                                |             | FeAr<br>clear             | 60s  |
| 48        | Bias (A)              |   |                        | 23:04                   |                       |                                |             |                           |      |
| 49        | <del>HD160</del> comp |   |                        | 23:04                   |                       |                                |             | FeAr<br>Clear             | 60s  |



Spectr. Temp.  $-100.0^{\circ}\text{C}$  ..... Dome Temp./Hum.  $20.2^{\circ}/79.6\%$  Transparency Conditions *clearing* .....Focus ..... *G.6.6* .....Spectr. Temp. .... *c.gain 9.0* .....

Dome Temp./Hum. ....

| Exp. Mtr.    | Seeing | Pig. Mag.  | Sp.          | Inst.               | Grating/Tilt | Slit                 | Emulsion<br><i>clombata</i> | P.H.<br>Ei | Program    | Remarks                        | Quality |
|--------------|--------|------------|--------------|---------------------|--------------|----------------------|-----------------------------|------------|------------|--------------------------------|---------|
|              |        |            |              | <i>Cass<br/>CCD</i> | <i>1800</i>  | <i>306um</i>         | <i>4248A</i>                | <i>18</i>  | <i>Hed</i> |                                |         |
| <i>36100</i> |        | <i>3.0</i> | <i>BSTII</i> |                     |              |                      | <i>12.2k adu max</i>        | <i>19</i>  |            | <i>airmass at start 1.128</i>  |         |
|              |        |            |              |                     |              |                      |                             | <i>20</i>  |            |                                |         |
| <i>35800</i> |        |            |              |                     |              |                      |                             | <i>21</i>  |            | <i>airmass at start 1.133</i>  |         |
|              |        |            |              |                     |              |                      |                             | <i>22</i>  |            | <i>12.3k max adu.</i>          |         |
| <i>34500</i> |        |            |              |                     |              |                      |                             | <i>23</i>  |            | <i>airmass at start 1.1469</i> |         |
| <i>B</i>     |        |            |              |                     |              |                      |                             | <i>24</i>  |            | <i>11.9k max adu</i>           |         |
| <i>35500</i> |        |            |              |                     |              | <i>12.6k max adu</i> |                             | <i>25</i>  |            | <i>airmass at start 1.1706</i> |         |
|              |        |            |              |                     |              |                      |                             | <i>26</i>  |            | <i>humidity on catwalk 89%</i> |         |
| <i>12000</i> |        |            |              |                     |              |                      |                             | <i>27</i>  |            | <i>airmass at start 1.194</i>  |         |
| <i>36000</i> |        |            |              |                     |              |                      |                             | <i>28</i>  |            | <i>13.1k max adu</i>           |         |
| <i>B</i>     |        |            |              |                     |              |                      |                             | <i>29</i>  |            |                                |         |
| <i>35080</i> |        |            |              |                     |              | <i>12.3k max adu</i> |                             | <i>29</i>  |            | <i>airmass 1.219 at start</i>  |         |
| <i>12300</i> |        |            |              |                     |              |                      |                             | <i>30</i>  |            |                                |         |
|              |        |            |              |                     |              |                      |                             | <i>42</i>  |            |                                |         |
| <i>12669</i> |        |            |              |                     |              |                      |                             | <i>5</i>   |            |                                |         |

Date Aug. 26/27, 1994 Observers Hrd./Smt.

Emulsion Batches:

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| Plate No.         | Object          | R.A.  |           | Starting Time | Ending Time                  | Hour Angle           | Declination | Comparison      |       |
|-------------------|-----------------|---|-----------|---------------|------------------------------|----------------------|-------------|-----------------|-------|
|                   |                 | 1900  | 1900      |               |                              |                      |             | Type/Filter     | Exp.  |
| CG25550           | HD160762        | 17 <sup>h</sup> 36 <sup>m</sup> 38 <sup>s</sup> | 46°03'34" | 23:08         | 3 <sup>h</sup> 37 W          |                      |             | <del>FeAr</del> | 280s  |
| 51                | comp            |   |           | 23:16         | "                            |                      |             | FeAr<br>Clear   | 60s   |
| 52                | HD160762        |   |           | 23:18         | 3 <sup>h</sup> 48 W          |                      |             |                 | 290s  |
| 53                | comp            |   |           | 23:26         |                              |                      |             | FeAr<br>Clear   | 60s   |
|                   | <del>comp</del> |   |           |               |                              |                      |             |                 |       |
| CG40408           | SEEING TEST     |   |           |               |                              |                      |             |                 | .067s |
| <del>52</del> -11 | HD207754        | 21 46 12  | 43 25 00  |               |                              |                      |             |                 |       |
| CG4042/13         | "               |   |           |               |                              | 00 02 E              | 43° 50 N    |                 | .133s |
| 54                | COMP            |   |           | 23:57         | <del>2<sup>h</sup>05 W</del> | -0 <sup>h</sup> 21 E |             | FeAr<br>clear   | 60s   |
| 55                | HD886<br>comp   | 00 <sup>n</sup> 08 <sup>m</sup> 05 <sup>s</sup> | 14°37'40" | 00:00         |                              | -0 <sup>h</sup> 6 E  |             | FeAr<br>clear   | 145s  |
| 86                | comp            |   |           | 00:05         |                              |                      |             | FeAr<br>clear   | 60s   |
| 57                | Brae (4)        |   |           | 00:09         |                              | -2 <sup>h</sup> 02 E |             |                 |       |
| 58-72             | FLAT x 15       |   |           |               |                              | 3 00 W               | 39° 45 N    | Tung<br>clear   | 22    |
| 73                | BIAS (4)        |   |           | 00:45         |                              |                      |             |                 |       |
| 74                | Comp            |   |           | 00:46         |                              | -1 <sup>h</sup> 31 E |             | FeAr            | 180s  |
| 75                | HD886           |   |           | 00:50         |                              | -1 <sup>h</sup> 3 E  |             |                 | 420s  |
| 76                | comp            |   |           | 01:07         |                              | -1 <sup>h</sup> 2 E  |             | FeAr<br>clear   | 180s  |

Spectr. Temp. .... -100.0°C

Dome Temp./Hum. .... 19.8°C/82.8%

Transparency Conditions clear... humidity 91.9<sup>330</sup> on catwalk

Focus ..... 6.66

Spectr. Temp. .... gain 90

Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.   | Inst.       | Grating/Tilt        | Slit | Emission<br>element | P.H.<br>E. | Program                | Remarks   | Quality |
|-----------|--------|-----------|-------|-------------|---------------------|------|---------------------|------------|------------------------|---|---------|
| 35800     |        | 3.80      | B3IV  | CCP<br>caes | 1800<br>angle 41.7° | 30μm | 4298A               | 6          | Hml                    | airmass at start 1.250.<br>13.8K max adu  |         |
| 12698     |        |           |       |             |                     |      |                     | 7          |                        |   |         |
| 35065     |        |           |       |             |                     |      |                     | 8          | Hml                    | airmass at start 1.27 (1.246 ahead)<br>11.8K max adu                                  |         |
|           |        |           |       |             |                     |      |                     | 9          |                        |   |         |
|           |        | 7.32      | K0III |             |                     |      |                     | -          | seeing test            | dome W, humid, light E breeze   |         |
|           |        | "         | "     |             |                     |      |                     | -          | "                      | clear, above 30μ slit.  |         |
| 9737.     |        |           |       |             |                     |      |                     | 9.         |                        | spectrograph controller <del>is</del> <sup>is</sup> <del>not</del> <sup>not</sup> but |         |
| 35690     |        | 2.83      | B3III |             |                     |      |                     | 10         | Header may<br>be wrong | airmass at start 1.300<br>14.6K max adu   |         |
|           |        |           |       |             |                     |      |                     | 11         |                        |   |         |
|           |        |           |       |             |                     |      |                     | 1/2        |                        | switch to gain of 0   |         |
|           |        |           |       |             |                     |      |                     | 12         |                        | max adu ~ 11.2k → 10.5k for best  |         |
| 27635     |        |           |       |             |                     |      |                     | 12.13      |                        | switch gain to 0<br>delete, then 1305 comp.   |         |
| 113500    |        |           |       |             |                     |      |                     | 14         |                        | airmass 1.183 at start<br>max adu 9.8k  |         |
| 27543     |        |           |       |             |                     |      |                     | 17         |                        | humidity on catwalk ~ 90%   |         |









Pg #1  
333

Emulsion Batches:

Date 1994 Aug 28/29 Observers [Rm.]/Smt..... III as backup

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| Plate No.      | Object                     | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.  |
|----------------|----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| CC25596/7      | FOCUS TEST<br>COMP/STELLAR |              |                     |                         |                       |                   | +44°        | FeAr<br>clear             | 60/60 |
| 98             | BIAS(4)                    |              |                     | 20 44                   |                       |                   |             |                           |       |
| 99             | COMP                       |              |                     |                         |                       |                   |             | FeAr<br>clear             | 60    |
| 600            | HD 173297                  | 18 39 20     | -20 45              | 20 55 06                |                       | 1 03 W            |             |                           | 2500  |
| 01             | COMP                       |              |                     |                         |                       |                   |             | FeAr<br>clear             | 60    |
| 02             | BIAS(4)                    |              |                     | 21 40                   |                       |                   |             |                           |       |
| 03             | COMP                       |              |                     |                         |                       |                   |             | FeAr<br>clear             | 60    |
| 04             | HD 180583                  | 19 12 00     | +27 45              | 21 51 25                |                       | 0 57 W            |             |                           | 660   |
| 05             | COMP                       |              |                     |                         |                       |                   |             | FeAr<br>clear             | 60    |
| 06             | COMP                       |              |                     |                         |                       |                   |             | FeAr<br>clear             | 60    |
| 07             | HD 331970                  | 20 08 27     | +32 34 16           | 22 28 11                |                       | 1 30 W            |             |                           | 3600  |
| 08             | COMP                       |              |                     |                         |                       |                   |             | FeAr<br>clear             | 60    |
| 09             | BIAS(4)                    |              |                     | 23 33                   |                       |                   |             |                           |       |
| CG40414<br>-17 | HD 207754                  | 21 46 12     | +43 25 00           |                         |                       |                   |             |                           | .067  |
| 18/19          | "                          |              |                     |                         |                       | 0 12 W            | +44°        |                           | .133  |

CCD  
Spectr. Temp. = 100.5°C

Dome Temp./Hum. ~~17.4°C~~ / 59.9%

Transparency Conditions ... clearest of clear... 334

Focus ..... 6.70

Spectr. Temp. gain 9.0

Dome Temp./Hum. ....

W wind  
NE FAN ON

CCDFMT 415 0 50 1024 4 1

| Exp. Mtr. | Seeing | Ptg. Mag.      | Sp.                       | Inst.       | Grating/<br>Tilt                             | Slit       | Emulsion<br>CD | P.H.<br>ci | Program     | Remarks   | Quality                     |
|-----------|--------|----------------|---------------------------|-------------|--|------------|----------------|------------|-------------|---|-----------------------------|
|           |        |                |                           | CASS<br>CCD | 1500 $\lambda$ /mm                           | 30 $\mu$ m | 6399A          | 3/4        |             |   | set for cooler temperature. |
|           |        |                |                           |             | <del>done</del> 55.0 deg<br>done<br>manually |            |                | 1          |             |   |                             |
|           |        |                |                           |             |  |            |                | 5          |             |   |                             |
| 6296      |        | <v><br>= 7.48  | ~ 60 Ib                   |             |  |            |                | 6          | Rm PGM      | ~ 6.3K max adv ~ 310:1<br>GUIDED WITH SBIG  | S/N!                        |
|           |        |                |                           |             |  |            |                | 7          |             |   |                             |
|           |        |                |                           |             |  |            |                | 1          |             |   |                             |
|           |        |                |                           |             |  |            |                | 8          |             |   |                             |
| 9070      |        | <v> =<br>6.14  | F6<br>I-IIIb              |             |  |            |                | 9          | Rm PGM      | ~ 8.1K max adv ~ 325:1<br>S/N!  |                             |
|           |        |                |                           |             |  |            |                | 10         |             |   |                             |
|           |        |                |                           |             |  |            |                | 11         |             |   |                             |
| 2885      |        | v ~<br>9.1-9.8 | F8 $\rightarrow$<br>62 Ib |             |  |            |                | 12         | Rm PGM      | ~ 3000 max adv ~ 200:1<br>GUIDED WITH SBIG  | S/N!                        |
|           |        |                |                           |             |  |            |                | 13         |             |   |                             |
|           |        |                |                           |             |  |            |                | 1          |             |   |                             |
|           |        | 7.32           | K0 III                    |             |  |            |                |            | SEEING TEST | STRONG W WIND, SOME W,<br>CLEAR, SO% CATWALK HUMIDITY<br>ABOVE THE SLIT, RIGHT OVERHEAD |                             |
|           |        |                |                           |             |  |            |                |            | "           |   |                             |



Pg #2  
335

Date 1994 Aug. 28/29. Observers [Rm]/Smt ..... III as backup.

Emulsion Batches:

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| Plate No. | Object              | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |       |
|-----------|---------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|-------|
|           |                     |              |                     |                         |                       |                   |             | Type/Filter   | Exp.  |
| cc25610   | COMP                |              |                     |                         |                       |                   |             | FeAr<br>clear | 60    |
| 11        | HD214975            | 22 36 55     | +56 18 24           | 00 16 01                |                       |                   |             |               | 240x  |
| 12        | COMP                |              |                     | 00 57 32                |                       |                   |             | FeAr<br>clear | 60    |
| 13        | BIAS(4)             |              |                     | 00 59                   |                       |                   |             |               |       |
| 14        | Comp                |              |                     |                         |                       |                   |             | FeAr<br>clear | 60    |
| 15        | HD222368            | 23 34 48     | +05 05 00           | 01 18 37                |                       | 0 07 E            |             |               | 150   |
| 16        | COMP                |              |                     |                         |                       |                   |             | FeAr<br>clear | 60    |
| 17        | COMP                |              |                     |                         |                       |                   |             | FeAr<br>clear | 60    |
| 18        | HD222847            | 23 39 01     | -18 49 55           | 01 35 46                |                       | 0 13 W            |             |               | 592   |
| 19        | COMP                |              |                     |                         |                       |                   |             | FeAr<br>clear | 60    |
| 20        | BIAS(4)             |              |                     | 01 50                   |                       |                   |             |               |       |
| 21        | COMP                |              |                     |                         |                       |                   |             | FeAr<br>clear | 60    |
| 22        | VY Per (no HD# yet) | 02 20 19     | +58 28 04           | 02 20                   |                       | 0 53 E            |             |               | 3600s |
| 23        | COMP                |              |                     |                         |                       |                   |             | FeAr<br>clear | 60    |
| 24        | BIAS(4)             |              |                     | 03 23                   |                       |                   |             |               |       |



CD  
Spectr. Temp. -100.5°C  
Focus 6.70  
Spectr. Temp. ....

Dome Temp./Hum 13.9°C/67.2%

Transparency Conditions . Crystal clear... W. wind...  
NE DOME FAN ON

CCDFMT 415 0 50 1024 4

| Exp. Mtr. | Seeing | Pig. Mag.    | Sp.              | Inst.    | Grating/Tilt           | Slit | Emulsion | P.H. ei | Program   | Remarks  | Quality |
|-----------|--------|--------------|------------------|----------|------------------------|------|----------|---------|-----------|--|---------|
|           |        |              |                  | CASS CCD | 1800l/mm               | 306μ | 6399A    | 14      |           |  |         |
| 2510      |        | <v>= 8.40    | ~60Ib            |          | ~55.0deg done manually |      |          | 15      | Rm P6M    | 1st PRIORITY ~3400 max adu. GUIDED WITH SBIG ~200:1 S/N. |         |
| 8844      |        |              |                  |          |                        |      |          | 16      |           |  | 13.5°   |
|           |        |              |                  |          |                        |      |          | 17c     |           | starting to get hazy → moon has risen                    |         |
| 9700      |        | 4.13         | F7I              |          |                        |      |          | 18      | RV STD    | 8.8K max adu   |         |
|           |        |              |                  |          |                        |      |          | 19      |           |  |         |
|           |        |              |                  |          |                        |      |          | 20      |           |  |         |
| 10 000    |        | 5.24         | B9V <sub>n</sub> |          |                        |      |          | 21      | Tell. STD | arr mass ~2.14 ~7.7K max adu                             |         |
|           |        |              |                  |          |                        |      |          | 22      |           |  |         |
|           |        |              |                  |          |                        |      |          | 1       |           |  |         |
|           |        |              |                  |          |                        |      |          | 23      |           |  |         |
| 600       |        | 10.8 - 11.66 | F5-F9            |          |                        |      |          | 24      | Rm P6M    | ~670 max adu ~85:1 S/N GUIDED WITH SBIG FOR 1/2 OF TIME  |         |
|           |        |              |                  |          |                        |      |          | 25      |           |  |         |
|           |        |              |                  |          |                        |      |          | 1       |           |  |         |

Pg # 3  
337

Date 1994 Aug. 28/29 Observers [Rm]/Smt III as backup

Emulsion Batches:

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.....  
.....

| Plate No. | Object                     | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison      |       |
|-----------|----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-----------------|-------|
|           |                            |              |                     |                         |                       |                   |             | Type/Filter     | Exp.  |
| CC25625   | COMP                       |              |                     |                         |                       |                   |             | FeAr<br>clear   | 60    |
| 26        | HD25361                    | 03 56 41     | 58 23 00            | 03 51 34                |                       | 1 26 E            |             |                 | 2100  |
| 27        | COMP                       |              |                     |                         |                       |                   |             | FeAr<br>clear   | 60    |
| 28        | BIAS(4)                    |              |                     | 04 30                   |                       |                   |             |                 |       |
| 29        | COMP                       |              |                     |                         |                       |                   |             | FeAr<br>clear   | 60    |
| 30        | HD30282                    | 04 41 05     | 136 32 36           | 04 36 39                |                       | 1 37 E            |             |                 | 1300  |
| 31        | COMP                       |              |                     |                         |                       |                   |             | FeAr<br>clear   | 60    |
| 37-51     | FLAT x 20                  |              |                     |                         |                       | 0 00 11 E         | +42°        | Tung<br>1/4 Ap. | 6 s   |
| 52        | BIAS(4)                    |              |                     | 05 42                   |                       |                   |             |                 |       |
| 53/54     | FOCUS TEST<br>COMP/STELLAR | HARTMANN     |                     |                         |                       | 0 E<br>or W       | +42°        | FeAr<br>clear   | 60/65 |

CCD  
Spectr. Temp. ... 100.5°C

Dome Temp./Hum. 13.6°C / 66.4%

Transparency Conditions . clear . . . . . bright moon . . . . .  
NE DOME FAN ON

338

Focus . . . . . 6.70 . . . . .

Spectr. Temp. . . . . .

Dome Temp./Hum. . . . . .

CCDFMT 415 0 50 1024 4 1

| Exp. Mtr.              | Seeing | Ptg. Mag.      | Sp.            | Inst.       | Grating/Tilt        | Slit  | Emulsion | P.H. CI | Program | Remarks  | Quality |
|------------------------|--------|----------------|----------------|-------------|---------------------|-------|----------|---------|---------|--|---------|
|                        |        |                |                | CASS<br>CCD | 5000 Å<br>~55.0 deg | 306 μ | 6399A    | 26      |         |  |         |
| 6250                   |        | 7.30<br>- 8.07 | F6Ib<br>- 62Ib |             | done<br>manually    |       |          | 27      | Rm P6M  | ~8.6K max adu<br>~310:1 S/N!                         |         |
|                        |        |                |                |             |                     |       |          | 28      |         |  |         |
|                        |        |                |                |             |                     |       |          | 1       |         |  |         |
|                        |        |                |                |             |                     |       |          | 29      |         |  |         |
| 6000                   |        | B =<br>7.9-8.8 | F6<br>- G1     |             |                     |       |          | 30      | Rm P6M  | ~6.8K max adu ~280:1 S/N!<br>kind of close to moon   |         |
|                        |        |                |                |             |                     |       |          | 29      |         |  |         |
|                        |        |                |                |             |                     |       |          | 5       |         | SPECTROGRAM CONTROLLER RESET<br>9.7K - 8.8K max adu. |         |
|                        |        |                |                |             |                     |       |          | 1       |         |  |         |
|                        |        |                |                |             |                     |       |          | 3/4     |         |  |         |
| All to WORM & Perseus. |        |                |                |             |                     |       |          |         |         |  |         |



NOTE ① Grating angle determined

Date ... 9th Apr. 29.139 Observers ... [Bin]. III ... / Smt. ...  
Tue / Wed..... manually  
② Purpose: pollyguiding away from

| Plate No. | Object                    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination      | Comparison     |       |
|-----------|---------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|------------------|----------------|-------|
|           |                           |              |                     |                         |                       |                   |                  | Type/Filter    | Exp.  |
| cc 25655  | Bias (4)                  |              |                     | 19:28                   |                       |                   |                  |                |       |
| 567       | Hertman<br>Comp / Steller |              |                     |                         |                       |                   |                  | FEAR<br>clear  | 60/60 |
| 58        | BIAS (4)                  |              |                     | 20:10                   |                       |                   |                  |                |       |
| 60        | Comp                      |              |                     | 21:39:24<br>20:50:09    |                       |                   |                  | FEAR<br>clear  | 60    |
| 61        | HD 145964                 | 16 09 30     | -20°51'11"          | 21:44:02                |                       | 03 59 W           | -21°             |                | 400   |
| 59        | Bias (4)                  |              |                     | 21:36                   |                       |                   |                  |                |       |
| 62        | Comp                      |              |                     | 22:00:56                |                       |                   |                  | FEAR<br>clear  | 60    |
| 63        | Comp                      |              |                     | 22:25:08<br>22:07:44    |                       |                   |                  | FEAR<br>clear  | 60    |
| 64        | HD 210419<br>HD 146416    | 22 05 09     | -04°23'03"          | 22:28:29                |                       | 1.11 E            | Airmars<br>1.570 |                | 900   |
| 65        | Comp                      |              |                     | 22:44:37                |                       |                   |                  | FEAR<br>clear  | 60    |
| 66        | Bias (4)                  |              |                     | 22:46                   |                       |                   |                  |                |       |
| 67-82     | FLAT x16                  |              |                     |                         |                       |                   |                  | Tung<br>1/4 Ap |       |
| 83/4      | Hertman<br>Comp / Steller |              |                     |                         |                       |                   |                  | FEAR<br>clear  | 60/60 |



Spectr. Temp. <sup>CCD</sup> ..... 100.0 °C Dome Temp./Hum. 15.3°/53% Transparency Conditions ... clear!

Focus ..... 6.74 (perfect).

Spectr. Temp. ... gain = 9.0. Dome Temp./Hum. ....

415 0 50 1024 41 ccd fnt

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.       | Grating/Tilt       | Slit      | Emission elements | P.H. | Program                 | Remarks                               | Quality |
|-----------|--------|-----------|-----|-------------|--------------------|-----------|-------------------|------|-------------------------|---------------------------------------|---------|
|           |        |           |     | Cass<br>CCD | 1300/306<br>56.45° | 306<br>um | 6604A*            | 1    | B                       | reset sp. controller                  |         |
|           |        |           |     |             |                    |           |                   | 3/4  | Focus TEST              | Telescope on E. side of pier          |         |
|           |        |           |     |             |                    |           |                   | 1    |                         | reset sp. controller                  |         |
| 8042      |        |           |     |             |                    |           |                   | Sci  |                         | reset sp. controller                  |         |
| 610       | 6.41   |           | ADV |             |                    |           |                   | 6ci  | Bln Telluric Std Search | 11.9                                  | 14.4°   |
|           |        |           |     |             |                    |           |                   | 1ci  |                         |                                       |         |
|           |        |           |     |             |                    |           |                   | 7ci  |                         |                                       |         |
|           |        |           |     |             |                    |           |                   | 8ci  |                         | could NOT get H $\alpha$ 1464         | 13.6°   |
| 7930      |        |           |     |             |                    |           |                   | 9ci  | Bln Telluric Std Search | blocked by shirt + good view of trees | 13.3°   |
| 9254      |        |           |     |             |                    |           |                   | 10ci |                         |                                       |         |
|           |        |           |     |             |                    |           |                   | 1    |                         |                                       |         |
|           |        |           |     |             |                    |           |                   | 11ci |                         | ~ 7.2 ADU                             |         |
|           |        |           |     |             |                    |           |                   | 3/4  | Focus TEST              |                                       |         |
|           |        |           |     |             |                    |           |                   |      |                         | New A & Hing begins on next page      |         |



Spectr.-Temp. .... Dome Temp./Hum. 13.2°/61.5% Transparency Conditions ... clear!

Focus ... 6.50. (perfect)

Spectr.-Temp. ... again f. 9.0 ... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing      | Ptg. Mag. | Sp. | Inst.       | Grating/Tilt | Slit   | Emulsion | P.H. | Program     | Remarks   | Quality                  |
|-----------|-------------|-----------|-----|-------------|--------------|--------|----------|------|-------------|---|--------------------------|
|           |             |           |     | CCD         | 1800/1mm     | 300 μm | 4475A    | B/14 | Focus TEST  | Telescope on W. side of pier now                              |                          |
|           |             |           |     |             |              |        |          | 1    |             |   |                          |
|           |             |           |     |             |              |        |          | 15   |             |   | 12.8°                    |
| 12956     | 5.79        | A9s       |     | ~220: 1 S/W |              |        |          | 16   | Bln Sp. Bin | Max ~ 3K ADU  | 12.30<br><del>12.8</del> |
|           |             |           |     |             |              |        |          | 17ci |             |   |                          |
|           |             |           |     |             |              |        |          | 18ci |             |   | 12.3°                    |
| 370       | B.6<br>-9.3 | B8        |     | ~95: 1 S/W  |              |        |          | 19ci | Bln Sp. Bin | Max ~ 0.7K ADU  |                          |
|           |             |           |     |             |              |        |          | 1    |             |   | 11.9°                    |
|           |             |           |     |             |              |        |          | 20ci |             |   |                          |
|           |             |           |     |             |              |        |          | 1    |             |   |                          |
|           |             |           |     |             |              |        |          | 20ci |             |   | 11.7°                    |
| 14145     | 5.79        | A9s       |     | ~220: 1 S/W |              |        |          | 16   | Bln Sp. Bin | Max ~ 3.2K ADU  |                          |
|           |             |           |     |             |              |        |          | 21   |             |   |                          |
|           |             | 7.5       | K5  |             |              |        |          | -    | SEEING TEST | clear, cold, DOME S, but wind 90% catwalk humidity, Pass off. |                          |
|           |             | "         | "   |             |              |        |          | -    | "           |   |                          |



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page #3

Date ... 94 Aug. 29/30. Observers ... [Bin] III / Smt. ...  
Tue / Wed

Emulsion Batches:

Gratings... angle determined  
manually...  
Guiding... away from hot pipe

| Plate No. | Object    | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |      |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|------|
|           |           |              |                     |                         |                       |                   |             | Type/Filter   | Exp. |
| cc 25699  | COMP      |              |                     | 03:00:31                |                       |                   |             | Fear<br>clear | 60   |
| 700       | HD 21364  | 03 21 48     | +9° 23'             | 03:02:36                |                       | 02 02 E           |             |               | 300  |
| 701       | COMP      |              |                     | 03:10:06                |                       |                   |             | Fear<br>clear | 60   |
| 702       | Bias (4)  |              |                     | 03:11                   |                       |                   |             |               |      |
| 703       | COMP      |              |                     |                         |                       |                   |             | Fear<br>clear | 60   |
| 704       | HD 1061   | 00 09 50     | +08° 15' 56"        | 03 19 47                |                       | 01 46 W           |             |               | 1558 |
| 05        | COMP      |              |                     | 03 46 50                |                       |                   |             | Fear<br>clear | 60   |
| 06        | COMP      |              |                     | 04 00 25                |                       |                   |             | Fear<br>clear | 60   |
| 07        | HD 210459 | 22 05 33     | 32 41 00            | 04 03 06                |                       | 04 18 W           |             |               | 560  |
| 8         | COMP      |              |                     | 04:13:18                |                       |                   |             | Fear<br>clear | 60   |
| 9         | Bias (4)  |              |                     | 04:14                   |                       |                   |             |               |      |
| 10        | COMP      |              |                     | 04:20:30                |                       |                   |             | Fear<br>clear | 60   |
| 11        | HD 1061   | 00 09 50     | +08° 15' 56"        | 04 23: 12               |                       | 02 44 W           |             |               | 1200 |
| 12        | COMP      |              |                     | 04 44 25                |                       |                   |             | Fear<br>clear | 60   |
| 13        | COMP      |              |                     | 04 51 02                |                       |                   |             | Fear<br>clear | 60   |



CCD  
 Spectr. Temp.  $-101.8^{\circ}\text{C}$  ..... Dome Temp./Hum.  $10.9^{\circ}/74.0\%$  ..... Transparency Conditions  $\text{Clear!!}$  ..... 344

Focus  $6.90$  .....

Spectr. Temp.  $-99.9^{\circ}$  ..... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Pig. Mag. | Sp. | Inst.                        | Grating/Tilt | Slit | Emulsion | P.H. | Program     | Remarks                                      | Quality |
|-----------|--------|-----------|-----|------------------------------|--------------|------|----------|------|-------------|--|---------|
|           |        |           |     | CCD                          | 1800/1mm     | 306  | 4475A    | 22ci |             |  |         |
| 29673     | 3.66   | B8p       |     | <del>Max ADU</del>           | 42.7°        | 22m  |          | 23ci | Bln Sp. Bin | Max ADU ~ 9.2K                               | 10.9°   |
| 10881     |        |           |     |                              |              |      |          | 24ci |             |  |         |
|           |        |           |     |                              |              |      |          | 1    |             |  |         |
|           |        |           |     |                              |              |      |          | 25ci |             |  |         |
| 12000     | 5.79   | A9s       |     | Max ADU ~ 2.5K<br>~200:1 S/N |              |      |          | 16ci | Bln Sp. Bin | Dec control died<br>- blown fuse - replaced. |         |
|           |        |           |     |                              |              |      |          | 26   |             |  |         |
|           |        |           |     |                              |              |      |          | 27   |             |  | 10.9°   |
| 31400     | 4.3    | F5III     |     | <del>Max ADU</del>           |              |      |          | 28ci | Bln A-shell | Max ADU ~ 7K                                 |         |
|           |        |           |     |                              |              |      |          | 29   |             |  |         |
|           |        |           |     |                              |              |      |          | 1    |             |  | 11.2    |
|           |        |           |     |                              |              |      |          | 30   |             |  |         |
| 2300      | 5.79   | A9s       |     |                              |              |      |          | 16   | Bln Sp. Bin | Max ADU ~ 2.8K                               |         |
|           |        |           |     |                              |              |      |          | 5    |             |  |         |
|           |        |           |     |                              |              |      |          | 6    |             |  |         |

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page # 4

Date ... 94 Aug. 29. 1930. Observers ... [Bl. J. III] / smt

Emulsion Batches:

Grating angle determined  
manually.....  
Guiding away from hot pixel

| Plate No. | Object                             | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison    |       |
|-----------|------------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|-------|
|           |                                    |              |                     |                         |                       |                   |             | Type/Filter   | Exp.  |
| 425714    | HD 5394                            | 00 56 24     | 60 41 00            | 04:53:09                |                       |                   |             |               | 37    |
| 15        | Comp                               |              |                     | 04 54 35                |                       |                   |             | Fear<br>clear | 60    |
| 16        | Bias (4)                           |              |                     | 04 57 04                |                       |                   |             |               |       |
| 17-36     | FLAT x 20                          |              | +8° 15'             |                         |                       | 0:45W             |             | Tung<br>clear | 15    |
| 37/38     | FOCUS TEST<br>COMP/STURGE HARTMANN |              |                     |                         |                       | "                 | +8°         | Fear<br>clear | 40/50 |

Spectr. Temp. .... Dome Temp./Hum. 11.8 / 75% Transparency Conditions ... Clear !!! / 346  
 Focus ..... 6.80 .....  
 Spectr. Temp. ... e.g. 9.90 ..... Dome Temp./Hum. ....

| Exp. Mtr.             | Seeing | Ptg. Mag. | Sp.          | Inst.       | Grating/Tilt      | Slit      | Emulsion | P.H.  | Program | Remarks     | Quality |
|-----------------------|--------|-----------|--------------|-------------|-------------------|-----------|----------|-------|---------|-------------|---------|
| 20200                 |        | 2.5       | BO IV<br>npe | Cass<br>Ccd | 1800/1mm<br>42.7° | 306<br>um | 4475A    | 7ci   | 8 Cass  |             |         |
|                       |        |           |              |             |                   |           |          | 8ci   |         |             |         |
|                       |        |           |              |             |                   |           |          | 1     |         |             | 11.1°   |
|                       |        |           |              |             |                   |           |          | 17ci  |         | ~ 11.7 KADU |         |
|                       |        |           |              |             |                   |           |          | 13/14 |         |             |         |
| All to WORM & PERSEUS |        |           |              |             |                   |           |          |       |         |             |         |



347

pg#1

Thurs / Fri

Date 1994 Sep 1/2..... Observers [KK]/Tn/Smt.....

Emulsion Batches:

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CSS 386 Time Reset to W.W.V. Time @ start

| Plate No. | Object             | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp.            |
|-----------|--------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----------------|
| ce07750   |                    |              |                     |                         |                       |                   |             |                           |                 |
| 51        | INBOARD / OUTBOARD |              |                     |                         |                       |                   |             |                           |                 |
| 52        | BIAS(4)            |              |                     |                         |                       |                   |             |                           |                 |
| 53        | COMP               |              |                     |                         |                       |                   |             | ThAr<br>clear             | 1               |
| 54        | ADS9979A           | 16 10 54     | +34 07 00           | 19 47 19                |                       | 2 20 W            |             |                           | 1200            |
| 55        | COMP               |              |                     |                         |                       |                   |             | ThAr                      | <del>1200</del> |
| 56        | ADS9979B           | 16 10 54     | +34 07 00           | 20 09 17                |                       | 2 51 W            | +33 51      |                           | 1800            |
| 57        | Comp               |              |                     |                         |                       |                   |             | ThAr                      | 1               |
| 58        | ADS9979A           |              |                     | 20 41 03                |                       | 3 14 W            |             |                           | 1245            |
| 59        | COMP               |              |                     |                         |                       |                   |             | ThAr                      | 1               |
| 60        | BIAS(4)            |              |                     |                         |                       |                   |             |                           |                 |
| 61        | COMP               |              |                     |                         |                       |                   |             | ThAr                      | 1               |
| 62        | HD8890             | 01 22 36     | +88 46 00           | 21 13 43                |                       | 6 50 E            |             |                           | 537             |
| 63        | Comp               |              |                     |                         |                       |                   |             | ThAr                      | 1               |
| 64        | HD8890             | 01 22 36     | +88 46 00           | 21 25 17                |                       | 6 42 E            |             |                           | 360             |
| 65        | COMP               |              |                     |                         |                       |                   |             | ThAr                      | 1               |

CCD Spectr. Temp.  $-100^{\circ}\text{C}$  ..... Dome Temp./Hum.  $7.1318^{\circ}\text{C}$  ...  $66.9\%$  Transparency Conditions ... Fine - increasing haze 348

Focus :  $240$  .....

Spectr. Temp. ....  $9.0$  c.g. in. .... Dome Temp./Hum. ....

| Exp. Mtr.     | Seeing                                  | Mag. | Sp.   | Inst.   | Grating/Tilt       | Slit                   | Emulsion | P.H. | Program   | Remarks                              | Quality |
|---------------|---|------|-------|---|--------------------|------------------------|----------|------|---|--------------------------------------|---------|
|               |   |      |       | ECHELLE   | <del>200</del> 21  | $60\mu\text{W} = .27$  |          |      |   | 0 0 128 1024 8 1                     |         |
|               |   |      |       |   | CLD 18.42X = 0.580 | $400\mu\text{H} = .25$ | 6300 Å   | 1    |   | 0 0 256 1024 4 1                     |         |
| 75            | $3.4''$                                 | 5.58 | * GOV | → (This one <del>seems</del> looks to be a much earlier Sp type.) |                    |                        |          | 3    | (brighter & no. than)                             | centre order max adu ~ 1000          |         |
| <del>75</del> | * Pair are well separated in Guide view |      |       |   |                    |                        |          | 3ci  | KK telluric vel. pgm. (lower priority)            |                                      |         |
| 42            | $3''$                                   | 6.59 | GTV   |   |                    |                        |          | 2    | (dimmer & softer) CENTER ORDER 1200 Å max         |                                      |         |
|               |   |      |       |   |                    |                        |          | 4ci  | KK telluric vel. pgm. (lower priority)            |                                      |         |
|               |   |      |       |   |                    |                        |          | 2    | Red order $\leq 800$ Å max                        |                                      |         |
| 72            |   | 5.58 | GOV   |   |                    |                        |          | 3ci  | (brighter & no. than) Centre order max adu ~ 1000 |                                      |         |
| 510           |   |      |       |   |                    |                        |          | 2    | KK telluric vel. pgm. (low priority)              |                                      |         |
|               |   |      |       |   |                    |                        |          | 1    |   |                                      |         |
| 456           |   |      |       |   |                    |                        |          | 2    |   | max adu 8600                         |         |
| 920           | $4''$                                   |      |       |   |                    |                        |          | 5    | KK pgm.   | any adu ~ 16 K!                      |         |
| 399           |   |      |       |   |                    |                        |          | 6    |   | bottom 3 orders have some saturation |         |
| 660           |   |      |       |   |                    |                        |          | 6    |   | exp. ctr dropped by 20% over         |         |
| 417           |   |      |       |   |                    |                        |          | 5    | KK pgm.   | 2 comp. 8200 max adu                 |         |
|               |   |      |       |   |                    |                        |          | 2    |   | max adu ~ 11 K                       |         |

349

p9#2

Date 1994 Sep 1/2 Observers [KK]/Tm./Smt

Emulsion Batches:

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| Plate No. | Object                | R.A.<br>1900        | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|-----------------------|---------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 67        | HD8890                | 01 22 36            | +88 46 00           | 21 33 34                |                       | 6 32 E            |             | ThAr                      | 400  |
| 68        | COMP                  |                     |                     |                         |                       |                   |             |                           | 1    |
| 68        | HD8890                |                     |                     | 21 43 05                |                       |                   |             |                           | 400  |
| 69        | COMP                  |                     |                     |                         |                       |                   |             | ThAr                      | 1    |
| 70        | BIAS(4)               |                     |                     |                         |                       |                   |             |                           |      |
|           | <del>ADS14270 A</del> | <del>20 41 36</del> | <del>15 32 00</del> |                         |                       |                   |             |                           |      |
| 71        | COMP                  |                     |                     |                         |                       |                   |             | ThAr                      | 1    |
| 72        | ADS14270 A            | 20 41 36            | 15 32 00            | 22 01 45                |                       | 0 12 W            |             |                           | 1800 |
| 73        | COMP                  |                     |                     |                         |                       |                   |             | ThAr                      | 1    |
| 74        | ADS14270 B            | 20 41 36            | 15 32 00            | 22 34 57                |                       | 0 46 W            |             |                           | 1801 |
| 75        | COMP                  |                     |                     |                         |                       |                   |             | ThAr                      | 1    |
| 76        | ADS14270 A            | 20 41 36            | 15 32 00            | 23 07 21                |                       | 1 18 W            |             |                           | 1800 |
| 77        | Comp                  |                     |                     |                         |                       |                   |             | ThAr                      | 1    |
| 78        | BIAS(4)               |                     |                     |                         |                       |                   |             |                           |      |
| 79        | COMP                  |                     |                     |                         |                       |                   |             | ThAr                      | 1    |



Spectr. Temp. .... Dome Temp./Hum.  $12.0^{\circ}\text{C}/69.5\%$

Transparency Conditions *clear with thin haze* 350

Focus ..... *240* .....

Spectr. Temp. .... Dome Temp./Hum. ....

| Exp. Mtr. | Seeing | Ptg. Mag.          | Sp. | Inst.                | Grating/<br>Tilt                | Slit                       | Emulsion<br><i>CD</i> | P.H. | Program                       | Remarks   | Quality |
|-----------|--------|--------------------|-----|----------------------|---------------------------------|----------------------------|-----------------------|------|-------------------------------|---|---------|
| 663       |        |                    |     | ECHELLE<br>CCP 18.46 | 300 $\lambda$ /mm<br>$X = .580$ | 600 $\mu$ W<br>400 $\mu$ H | 6300A <sup>0</sup>    | 5    | KK pgm                        | max adu $\sim 12K$  |         |
| 453       |        |                    |     |                      |                                 |                            |                       | 6    |                               | max adu $\sim 8400$                                       |         |
| 618       |        |                    |     |                      |                                 |                            |                       | 5    | KK pgm                        | central order max adu $\sim 9400$<br>overall " $\sim 11K$ |         |
|           |        |                    |     |                      |                                 |                            |                       | 2    |                               |   |         |
| 493       |        | <del>7.50</del> KO |     |                      |                                 |                            |                       | 2?   |                               |   |         |
| 7         |        | 7.50               | KO  |                      |                                 |                            |                       | 3    | brighter & southern<br>KK pgm | central order max adu $\sim 450$                          |         |
| 506       |        |                    |     |                      |                                 |                            |                       | 6    |                               |   |         |
| 0         |        | 8.2                | ?   |                      |                                 |                            |                       | 4    | fainter & northern<br>KK pgm  | central order max adu $\sim 300$                          |         |
|           |        |                    |     |                      |                                 |                            |                       | 2    |                               |   |         |
| 13        | 3"     | 7.50               | KO  |                      |                                 |                            |                       | 3    | brighter & southern<br>KK pgm | $\sim 300$ ADU max  |         |
| 479       |        |                    |     |                      |                                 |                            |                       | 2    |                               |   |         |
|           |        |                    |     |                      |                                 |                            |                       | 1    |                               |   |         |
|           |        |                    |     |                      |                                 |                            |                       | 2    |                               |   |         |

pg # 3

Date 1994... Sep. 11/2... Observers ... [KK] / Tn. / Smt...

Emulsion Batches:

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 .....  
 .....

| Plate No. | Object     | R.A.<br>1900 | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination | Comparison<br>Type/Filter | Exp. |
|-----------|------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CE07780   | ADS14279 A | 20 42 00     | 15 46 00            | 23 42 43                |                       | 01:34 W           |             |                           | 664  |
| 81        | Comp       |              |                     |                         |                       |                   | ThAr        | 1s                        |      |
| 82        | ADS14279 B | 20 42 00     | 15 46 00            | 23 55 35                |                       | 01:57 W           |             |                           | 1260 |
| 83        | Comp       |              |                     |                         |                       |                   | ThAr        | 1s                        |      |
| 84        | ADS14279 A |              |                     | 00 17 06                |                       | 02 09 W           |             |                           | 597  |
| 85        | Comp       |              |                     |                         |                       |                   | ThAr        | 1s                        |      |
| 86        | ADS14279 B |              |                     | 00 29 46                |                       | 02 30 W           |             |                           | 1173 |
| 87        | Comp       |              |                     |                         |                       |                   | ThAr        | 1s                        |      |
| 88        | ADS14279 A |              |                     | 00 50 38                |                       | 02 44 W           |             |                           | 756  |
| 89        | Comp       |              |                     |                         |                       |                   | ThAr        | 1s                        |      |
| 90        | BIAS(4)    |              |                     |                         |                       |                   |             |                           |      |
| 91        | Comp       |              |                     |                         |                       |                   | ThAr        | 1s                        |      |
| 92        | HD186791   | 19 41 30     | +10 22 00           | 01 07 42                |                       | 03 56 W           |             |                           | 365  |
| 93        | Comp       |              |                     |                         |                       |                   | ThAr        | 1s                        |      |
| 94        | HD186791   |              |                     | 01 15 37                |                       | 04 03 W           |             |                           | 361  |
| 95        | Comp       |              |                     |                         |                       |                   | ThAr        | 1s                        |      |

Spectr. Temp. .... Dome Temp./Hum. 10.6°C / 77.2% Transparency Conditions clear with little bit of haze.  
 Focus ..... 240  
 Spectr. Temp. .... Dome Temp./Hum. 10.0°C / 81.3% H

| Exp. Mtr.         | Seeing | Pig. Mag. | Sp.   | Inst.                   | Grating/Tilt         | Slit            | Emulsion | PH  | Program | Remarks   | Quality |
|-------------------|--------|-----------|-------|-------------------------|----------------------|-----------------|----------|-----|---------|---|---------|
| 160               | 3-4"   | 9.50      | K1 IV | ECHELLE<br>CCD<br>18.46 | 300 l/mm<br>X = .580 | 60µ W<br>400µ H | 6300 Å   | 5   | KK pgm. | 22 K ADU max @ center   |         |
| 350               |        |           |       |                         |                      |                 |          | 2   |         |   |         |
| 125               | 4"     | 5.50      | F7V   |                         |                      |                 |          | 6ci | KK pgm  | ~ 1150 ADU max @ center   |         |
| 220               |        |           |       |                         |                      |                 |          | 2   |         | 11 K ADU max for comp   |         |
| 164               |        | 4.50      | K1 IV |                         |                      |                 |          | 5ci |         | 22 K ADU max @ center   |         |
| 260               |        |           |       |                         |                      |                 |          | 2   |         | 11 K max  |         |
| 125               | 3"     | 5.50      | F7V   |                         |                      |                 |          | 6ci |         | ~ 1100 ADU max @ center<br><small>(ie above background)</small> |         |
| 515 <sup>XX</sup> |        |           |       |                         |                      |                 |          | 2   |         | 1202 K ADU max  |         |
| 170               | 4-6"   | 4.50      | K1 IV |                         |                      |                 |          | 5.  |         | 1.90 AIR mass @ end   |         |
| 520               |        |           |       |                         |                      |                 |          | 2   |         |   |         |
|                   |        |           |       |                         |                      |                 |          | 1   |         |   |         |
|                   |        |           |       |                         |                      |                 |          | 2   |         |   |         |
| 280               | 4"     | 9.72      | K3 II |                         |                      |                 |          | 3   | std vel | 3.6 K ADU max, center   |         |
|                   |        |           |       |                         |                      |                 |          | 2   |         |   |         |
| 284               |        |           |       |                         |                      |                 |          | 3   | std vel |   |         |
|                   |        |           |       |                         |                      |                 |          | 2   |         |   |         |



353  
#944

Emulsion Batches:

Date 1994 Sep 1/2 ..... Observers [KH] Jm / smt .....

| Plate No. | Object                         | R.A.<br>1900        | Declination<br>1900 | Starting Time<br>E.S.T. | Ending Time<br>E.S.T. | Hour Angle<br>End | Declination        | Comparison<br>Type/Filter | Exp.  |
|-----------|--------------------------------|---------------------|---------------------|-------------------------|-----------------------|-------------------|--------------------|---------------------------|-------|
| CE0196    | Comp                           |                     |                     |                         |                       |                   |                    | ThAr                      | 1s    |
| 97        | ADS14636A                      | 21 02 25            | +38 15              | 01 31 58                |                       | 03 10 W           |                    |                           | 1020  |
| 98        | COMP                           |                     |                     |                         |                       |                   |                    | ThAr                      | 1     |
| 99        | ADS14636B                      | 21 02 26            | +38 15              | 01 50 20                |                       | 03 32 W           |                    |                           | 1283  |
| 800       | COMP                           |                     |                     |                         |                       |                   |                    | ThAr                      | 1     |
| 01        | ADS14636A                      | 21 02 25            | +38 15              | 02 13 03                |                       | 03 59 W           |                    |                           | 1483  |
| 02        | COMP                           |                     |                     |                         |                       |                   |                    | ThAr                      | 1     |
| 03        | BIAS (4)                       |                     |                     |                         |                       |                   |                    |                           |       |
| 04        | COMP                           |                     |                     |                         |                       |                   |                    | ThAr                      | 1     |
| 05        | HD222368                       | 23 <del>34</del> 48 | 05 05 00            | 02 43 12                |                       | 01 41 W           |                    |                           | 575   |
| 06        | COMP                           |                     |                     |                         |                       |                   |                    | ThAr                      | 1     |
| 07-11     | FLAT x 5                       |                     |                     |                         |                       | 01 42 W           | 5° 33 <sup>m</sup> | Tung                      | 1.7   |
| 12/13     | FOCUS TEST<br>INBOARD/OUTBOARD | HARTMANN            |                     |                         |                       | 01 42 W           | +5 33°             | ThAr                      | 1s/1s |

All to Perseus &amp; WORM

Spectr. Temp. .... Dome Temp./Hum.  $10.1^{\circ}\text{C}/81.3\%$  Transparency Conditions . clear  $\rightarrow$  clouding in ...  
 Focus .....  $0.290$  .....  
 Spectr. Temp. .... Dome Temp./Hum.  $9.9^{\circ}\text{C}/82.3\%$  -  $96\%$  catwalk @ end of exposures.

| Exp. Mtr. | Seeing                  | Ptg. Mag. | Sp. | Inst.                   | Grating/Tilt              | Slit                                | Emulsion          | P.H. | Program                       | Remarks  | Quality         |
|-----------|-------------------------|-----------|-----|-------------------------|---------------------------|-------------------------------------|-------------------|------|-------------------------------|--|-----------------|
|           |                         |           |     | ECHELLE<br>CCD<br>18.46 | 200 L/mm<br>X tilt = .580 | 60 $\mu$ W<br>400 $\mu$ H           | 6300 $\text{\AA}$ |      |                               |  |                 |
| 140       | 5.22                    | K5V       |     |                         |                           |                                     |                   | 5    | brighter & west cat<br>KK pgn |  |                 |
| 532       |                         |           |     |                         |                           |                                     |                   | 2    |                               |  |                 |
| 65        | 6.04                    | K7V       |     |                         |                           |                                     |                   | 6    | fainter & east<br>KK pgn      | central order max adu $\sim$ 1000  |                 |
| 530       |                         |           |     |                         |                           |                                     |                   | 2    |                               |  |                 |
| 18        | 5.22                    | K5V       |     |                         |                           |                                     |                   | 5    | brighter<br>KK pgn            | through cloud.<br>central order max adu $\sim$ 465                                 |                 |
|           |                         |           |     |                         |                           |                                     |                   | 2    |                               |  |                 |
|           |                         |           |     |                         |                           |                                     |                   | 1    |                               |  |                 |
| 522       |                         |           |     |                         |                           |                                     |                   | 2    |                               |  |                 |
| 24        | 4.13                    | F7V       |     |                         |                           |                                     |                   | 3    | RV Std.                       | cloudy with some holes.<br>central order max adu $\sim$ 450                        | 1.39<br>airmass |
|           |                         |           |     |                         |                           |                                     |                   | 2    |                               |  |                 |
|           |                         |           |     |                         |                           | 60 $\mu$ W<br>500 $\mu$ H<br>= .215 |                   | 4    |                               | DOME WET.<br>t scale = 100<br>max adu $\sim$ 11K                                   |                 |
|           | 10.0 $^{\circ}\text{C}$ |           |     |                         |                           | 60 $\mu$ W<br>400 $\mu$ H<br>= .225 |                   | 1/2  | focus test                    | CCDFMT<br>0 0 128 1024 8 1   |                 |
|           |                         |           |     |                         |                           |                                     |                   |      |                               | Only about $\sim$ 2 pixels out from the<br>"Righton" focus test at start of night. |                 |













