

THIS PAGE INTENTIONALLY LEFT BLANK

1

|         |         |              |             |   |         |
|---------|---------|--------------|-------------|---|---------|
| III a J | G12     | July 9/10    |             |   |         |
| HIE     | G12/24  | Sept 9/10    | 200/250     | 10-10-10  |         |
| IV-N    | G24     | 78 Jan 15/16 | 40/200 AO   | 20-20-20 No                                     | - slwh  |
| III a J | G12 New | Feb 19/20    | Try 200/130 | Arc 3-3-3 no Fill #42322                        | slit 13 |
| III a O | G12 new | Feb 19/20    | Try 400/105 | Arc 7-7-7 with <sup>for A or B type</sup> ND110 | slit 13 |





Spectr. Temp. .... Dome Temp./Hum. .... Transparency Conditions ..... 4.

Focus .....

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

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.                    | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks             | Quality |
|-----------|--------|-----------|-----|--------------------------|--------------|------|----------|------|---------|---------------------|---------|
|           |        |           |     | G65                      | /            |      | 098-02   |      |         | with wratten filter |         |
|           |        |           |     | David Dunlap Observatory |              |      |          |      |         |                     |         |
|           |        |           |     | 74" Logbook              |              |      |          |      |         |                     |         |
|           |        |           |     | Volume 51                |              |      |          |      |         |                     |         |
|           |        |           |     | Plate Nos. 41672 - 42538 |              |      |          |      |         |                     |         |
|           |        |           |     | June 1977 - April 1978   |              |      |          |      |         |                     |         |





Spectr. Temp. .... 66°F .....

Dome Temp./Hum. ... 17°C ... 94%

Transparency Conditions ... good ... a little hazy ... 6

Focus ..... OR .....

Spectr. Temp. .... 58°F .....

Dome Temp./Hum. ... 13°C ... 98%

The started night of the year

| Comparison<br>Filter Exp. | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.  | Inst. | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program     | Remarks                     | Quality                   |
|---------------------------|-----------|--------|--------------|------|-------|------------------|------|----------|------|-------------|-----------------------------|---------------------------|
| ARC<br>1-10 10-10         | 400/120   | 3-4"   | 7.24         | A7   | G12   | G12/.490B        | 13/5 | IIaO-E   | A    | Ap MR       | comparison lines<br>doubled | ok                        |
| ARC<br>4/10               |           |        |              |      |       |                  |      | IIaO-E   |      |             |                             | ok                        |
| ARC<br>10-10              |           |        |              |      |       |                  |      | IIaO-E   |      |             |                             | ✓                         |
| ARC<br>10-10              | 400/120   |        | 7.08         | FO   | G-12  | G12/.490B        | 13/5 | IIaO-E   | B    | Ap-MR       |                             | fine                      |
| ARC<br>10-10              | 200/101   | 3-4    | 4.98         | B37c | Q-12  | G-12/.490B       | 13/9 | IIaO-E   | A    | Sp Bin - Bl |                             | vs/str                    |
| ARC<br>5/5                |           |        |              |      | G-12  | G-12/.490B       | 9    | IIaO-E   | B    | plates in   | apposed Box #3              | center<br>vs 1 to<br>blue |
|                           |           |        |              |      |       | 8m D19           | 68°F | .20      | 1.70 |             |                             |                           |











Spectr. Temp. ... 65°F .....

Dome Temp./Hum. ... 18°C 75%

Transparency Conditions ... Photometer, excellent 10

Focus ..... 5R .....

Spectr. Temp. ... 61°F .....

Dome Temp./Hum. ... 09°C 90%

exposed # Box 3

| Comparison<br>Filter Exp. | Exp. Mtr. | Seeing | Ptg.<br>Mag.  | Sp.           | Inst. | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program       | Remarks                | Quality |
|---------------------------|-----------|--------|---------------|---------------|-------|------------------|------|----------|------|---------------|------------------------|---------|
| ARC 10-11                 | 400/100   | 2"     | 6.80          | AO            | G12   | G12/.490         | 9/5  | IIaD-E   | A    | 5B. Blu       |                        |         |
|                           |           |        |               |               |       |                  |      | IIaD-E   |      |               |                        |         |
|                           |           |        |               |               |       |                  |      | IIaD-E   |      |               |                        |         |
| ARC 0-10                  | 400/140   | 2      | 5.82          | F2Ic          | G-12  | G12/.490B        | 13/5 | IIaD-E   | B    | Capitid - P.m |                        |         |
| " 8-8g                    | 400/141   |        | 6.8-<br>7.66  | F0-<br>G1     | "     | "                | 20/5 | "        | A    | "             |                        |         |
| " 7-8g                    | 400/280   |        | 7.88-<br>9.55 | F7ab<br>K0Iab | "     | "                | 20/5 | "        | B    | "             | <u>BROKEN</u> 2 PIECES | v sl wk |
| " 10-10                   | 400/141   |        | 5.89          | F2            | "     | "                | 13/5 | "        | A    | "             |                        |         |
| " 10-10                   | 400/103   |        | 4.98          | B3Ic          | "     | "                | 13/9 | "        | B    | Sp. Blu - Blu |                        |         |
|                           |           |        | 8"            | D19           | 68°F  | .19              | 1.68 |          |      |               |                        |         |

4

Emulsion Batches:

IIa-D-E 14017-20067  
 IIa-D-E 14017-23067

Date 23/24 June '77 Observers Blm-R-Vickers  
 THW/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.    |
|-----------|---------------------------------------|---|---------------------|-------------------------|-----------------------|-------------------------------|-------------|-------------------------------|---------|
| 41684     | HD 141458                             | 15 <sup>h</sup> 44.1                            | +13° 01'            | 20:55                   | 22:52                 | 00 <sup>h</sup> 55W           | +12° 55'    | Fe ARC<br>MD 110              | 121212  |
| 41684TI   | opt cal' for plates 41684-41685       |   |                     | 15 min @                | 152 Volts             | DY 3900<br>D3 4300<br>D2 4810 |             |                               |         |
| 41685     | HD 112019                             | 12 <sup>h</sup> 48 <sup>m</sup> 16 <sup>s</sup> | +83° 58'            | 23:15                   | 01:33                 | 06 <sup>h</sup> 33W           | +83° 27'    | Fe Arc<br>ND 110              | 1040-   |
| 41685TI   | red step wedge for plates 41684-41685 |   |                     |                         | 90 sec                |                               |             |                               |         |
| 41686     | HD 186791                             | 19 <sup>h</sup> 41.5                            | +16° 22'            | 01:39                   | 01:50                 | 00 <sup>h</sup> 03E           | +80° 35'    | Fe Arc<br>ND 110              | 10-1011 |
| 41687     | "                                     | "   | "                   | 01:55                   | 02:15                 | 00 22W                        | "           | Fe ARC<br>ND 110<br>UV Filter | 7-7-7   |
| 41687TI   | red step wedge for plates 41686-87    |   |                     |                         | 90 sec                |                               |             |                               |         |
| 41687F1   | frames 1st of Q-16B                   |   | focus 60R           |                         |                       |                               |             | NO<br>Filter                  | 10-10   |
| 41687F2   | frames 1st of Q-12                    |   | focus 0R            |                         |                       |                               |             | NO<br>Filter                  | 5-5     |

Spectr. T.  
 Focus..  
 Spectr.  
 Exp. Mtr.

400/100

400/200

8/30

8/15





13

Date 24/25 JUNE... Observers Ly-Ri.....  
FRI/SAT

Emulsion Batches:

Il. O.C.  
Il. A.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<br>Type/Filter      | Exp.  |
|-----------|-----------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|--------------------------------|-------|
| 41688     | HD 124897                         | 14 H-1       | +19 42              | 21:08                   | 21:12                 | +00 52W           | +19 25      | Fe Arc<br>ND 1.10<br>UV FILTER | 7-77  |
| 41689     |                                   |              |                     | 21:16                   | 21:28                 | +01 08W           |             | Fe Arc<br>No Filter            | 10-10 |
| 41690     |                                   |              |                     | 21:33                   | 21:36                 | +01 16W           |             | Fe Arc<br>No Filter            | 10-10 |
| 41691     |                                   |              |                     | 21:38                   | 21:44                 | +01 25W           |             | Fe Arc<br>No Filter            | 10 10 |
| 41692     | HO 131511                         | 14 4852      | +19 33              | 22:00                   | 22:56                 | +01 59W           | +19° 20     | "                              | 7 -14 |
| 4169271   | cal step wedge for plate 41689-92 |              |                     |                         |                       |                   |             |                                |       |
| 4169272   | cal step wedge for plate 41688    |              |                     |                         |                       |                   |             |                                |       |
| 41692 F1  |                                   |              |                     |                         |                       |                   | +19 20      | Fe Arc<br>No Filter            | 10-10 |



Spectr. Temp. 69° F

Dome Temp./Hum. 20°C 90%

Transparency Conditions ... poor ... cloudy

Focus ... 10B for G12

Spectr. Temp. ....

Dome Temp./Hum. ....

| Comparison Filter Exp. | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.   | Inst. | Grating/Tilt | Slit  | Emulsion | P.H. | Program               | Remarks      | Quality         |
|------------------------|-----------|--------|-----------|-------|-------|--------------|-------|----------|------|-----------------------|--------------|-----------------|
| 7-77                   | 80/20     | 2"     | 1.29      | K2III | G16B  | G16B/.380    | 9/5   | IIa0-e   | A    | RV STD :-             | Focus 50R    |                 |
| 10-10                  | 80/20     |        |           |       | G24R  | G24/.380     |       | IIaF-e   | B    |                       | W4 Filter in | vsl str         |
| 10-10                  | 80/20     |        |           |       |       |              |       | IIaF-e   | A    |                       | "            | sl str          |
| 10-10                  | 80/15     |        |           |       |       |              |       | IIaF-e   | B    |                       | "            | fine            |
| 7-10                   | 800/29    |        |           |       |       |              | 13/3  |          | A    |                       |              | v wk            |
|                        |           |        |           |       |       |              |       | IIaF-E   |      |                       |              |                 |
|                        |           |        |           |       |       |              |       | IIa0-E   |      |                       |              |                 |
| 10-10                  |           |        |           |       | G24R  |              | 9/    | IIaF-e   | B    |                       |              | center vsl blue |
|                        |           |        |           |       |       |              |       |          |      | IIaF w exposed Box #3 |              |                 |
|                        |           |        |           |       |       |              |       |          |      | IIa0 w exposed Box #1 |              |                 |
|                        |           |        |           |       | IIaF  | 5" D19       | 68° F |          |      |                       |              |                 |





067

Spectr. Temp.  $68^{\circ}$

Dome Temp./Hum.  $12^{\circ}\text{C } 98\%$

Transparency Conditions  $\text{clouds immediately 16}$

Focus  $50R$

Spectr. Temp. ....

Dome Temp./Hum.  $15^{\circ}\text{C } 99\%$

$\text{after visitors, of course}$   
 $\text{exposed Box \# 3}$

Comparison  
Filter Exp.

| Comparison<br>Filter Exp. | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.            | Inst. | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program   | Remarks   | Quality             |
|---------------------------|-----------|--------|--------------|----------------|-------|------------------|------|----------|------|-----------|---|---------------------|
| 7-7-7                     | 800/101   |        | V=5.2        | K5V            | G 24R | 0.38             | 13/5 | 098-02   | A    | Asm-Sp/KK | 61 Cyg A, clouds, Wr 4  | fine<br>comp's str. |
| 7-7-7                     | 800/92    |        | V=6.0        | K7V            | G24R  | 0.38             | 13/5 | 098-02   | B    | Asm-Sp/KK | 61 Cyg B; clouds, Wr 4 filter   | comp's str<br>fine  |
| 10-10                     |           |        |              |                | G24R  | 0.38             | 9    | 098-02   | B    |           | focus = 50R   | good                |
| ARC<br>10-10<br>54        | 800/15    | 3"-4"  | V9.7         | DH4            | G65   | 0.490            | 20/4 | "        | A    | Asm-Sp/KK | clear at start, then<br>haze, clouds, fog, etc -<br><u>was not refocused!</u> | out of<br>focus     |
|                           |           |        | 098          | 5 <sup>m</sup> | D19   | 68°F             | .19  | 1.55     |      |           | Fri/Sat/Sun developed together  |                     |

17

Date June 26/27 (Sun/Mon) 1977 Observers BB-Ri

Emulsion Batches:

.098-02-20047-17067  
IIao.E-14017-23067

| 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.       | Exp. Mtr. |
|-----------|----------------------|-----------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------------|-----------|
| 41696     | HD139319 (TW Dra)    | 15 <sup>h</sup> 32.4  | +64° 14'            | 21:00                   | 21:24                 | 0 06 E            | +64° 2.2    | Fe ARC<br>N.D. 1-10       | 8-8-8      | 500/60    |
| 41697     | HD191240 (SW Cyg)    | 20 <sup>h</sup> 3.8   | +46° 01'            | 21:34                   | 23:20                 | 2 43 E            | +46° 18.8   | "                         | 8-8-8      | 800/60    |
| 41697TI   | spot cal' for plate  | 41696-41699           |                     | 15 min                  | 7002<br>5450          |                   | 7001<br>HD  | 15U D3<br>4810            |            |           |
| 41698     | HD191240 (SW Cyg)    | 20 <sup>h</sup> 3.8   | +46° 01'            | 23:21                   | 1:13                  | 0 49 E            | +46° 18.8   | Fe ARC<br>ND 1-10         | 8-8-8      | 800/60    |
| 41699     | "                    | "                     | "                   | 1:14                    | 2:50                  | 0 47 W            | "           | "                         | 8-8-8      | 800/60    |
| 41699TI   | spot cal' for plate  | 41700,                |                     |                         | 15 min @ 15 volts     |                   | D4<br>3900  | D3<br>4300                | D2<br>4810 |           |
| 41700     | HD191610 (28 Cys)    | 20 <sup>h</sup> 05.43 | +36° 33'            | 3:01                    | 3:25                  | 1 19 W            | +36° 51.6   | Fe ARC<br>N.D. 1-10       | 10-10-11   | 200/101   |
| 41700TI   | strip cal' for plate | 41700,                | 9000                |                         |                       |                   |             |                           |            |           |
| 41700F1   | for test out         | nd/w                  |                     | 68°F (20°C)             | 10B                   |                   |             | NO<br>FILTER              | 5-5        |           |



Spectr. Temp. ... 72°F (22°C) Dome Temp./Hum. ... 22°C / 86%

Transparency Conditions ... excellent with some cirrus clouds 18

Focus ... 10B

Spectr. Temp. ... 68°F (20°C) Dome Temp./Hum. ... 20°C ... 78%

| Comparison<br>De/Filter Exp. | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.   | Inst.                        | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program       | Remarks   | Quality  |
|------------------------------|-----------|--------|--------------|-------|------------------------------|------------------|------|----------|------|---------------|---|----------|
| ARC<br>2.1-10<br>8-8-8       | 800/60    | 1-2"   | 7.5V         | A6105 | G-64<br>with<br>W12 4 filter | 0.490            | 20/4 | 098-02E  | A    | BB eclip bin. | Ft. companion easily resolved   | fine     |
| 1<br>K-8-8                   | 800/60    | .      | 9.5V         | A2+K0 | "                            | "                | "    | "        | B    | "             |   | v sl wk  |
| UDB<br>10                    |           |        |              |       |                              |                  |      | 098-02E  |      |               |   |          |
| ARC<br>1.10<br>-8            | 800/60    | 2-3"   | 9.5V         | A2+K0 | "                            | "                | "    | "        | A    | "             | Flux ~ .2-.25<br>clouds   | v sl wk  |
| 4<br>1-1-8<br>02<br>60       | 800/60    |        | "            | "     | "                            | "                | "    | "        | B    | 1,            | clean again   | fine     |
| ARC<br>1.10<br>10-10-1       | 200/101   | 1-2"   | 4.98         | B37c  | G-12                         | 0.490            | 13/9 | IIa0-E   | A    | Sp Bin - Bhr  | <div style="border: 1px solid black; padding: 2px;">In yellow Box<br/>mark 4x5 overflaw</div> | ok       |
| 0<br>1.10<br>5-5             |           |        |              |       |                              |                  | 9    | IIa0-E   | B    |               | 098-02 w exposed Box #3<br>IIa0-E w exposed Box #1  | v sl red |
|                              |           |        | 098          | 5"    | D19                          | 68°F             | 0.19 | 1.81     |      |               |   |          |
|                              |           |        | IIa0         | 8"    |                              |                  | .19  | 1.70     |      |               |   |          |





Spectr. Temp. .... 76°F (25°C) Dome Temp./Hum. ... 23°C 70%

Transparency Conditions ... very hazy with cirris clouds 20

Focus ..... 20B

Spectr. Temp. .... 68°F (20°C) Dome Temp./Hum. ... 19°C 97%

Comparison  
Type/Filter Exp

| Exp. Mtr. | Seeing       | Ptg. Mag. | Sp.  | Inst.  | Grating/Tilt        | Slit | Emulsion | P.H. | Program                            | Remarks  | Quality |
|-----------|--------------|-----------|------|--------|---------------------|------|----------|------|------------------------------------|--|---------|
| 800/177   | 41"<br>2"-3" | 6.79      | AO   | 1 G-12 | 0.490               | 9/5  | IIc0-E   | A    | Am MR                              | part please<br>RHS of exposed Box              |         |
|           |              |           |      |        |                     |      | IIc0-E   |      |                                    |  |         |
|           |              |           |      |        |                     |      | IIc0-E   |      |                                    |  |         |
| 400/220   | 4"-5"        | 4.98      | B3VE | G-12   | 0.490               | 13/9 | IIc0-E   | B    | Sp B <sub>in</sub> B <sub>ln</sub> | clouds<br>RHS of exposed Box<br>exposed Box #3 | vs/str  |
|           |              |           |      |        |                     |      | IIc0-E   |      |                                    |  |         |
|           |              |           |      | 41701  | 10 <sup>m</sup> D19 | 69°F | 20       | 1.57 |                                    |  |         |
|           |              |           |      | 41702  | 5 <sup>m</sup> " "  | " "  |          |      |                                    |  |         |

21

Emulsion Batches:

II a.o. - e. 14017 - 23067  
 \*II a.o. - e. 14017 - 28067

Date Wed. - Thurs. Jun 29/30 Observers Rm. - 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.             | Exp. Mtr. |
|-----------|--------------------------|----------------------|---------------------|-------------------------|-----------------------|-------------------|----------------------|---------------------------|------------------|-----------|
| 41703     | HD 186688 = 50 Cyg       | 19 <sup>h</sup> 40.8 | +29° 01.4           | 23 20                   | 02 20                 | 00 52W            | +29 22               | Fe Arc<br>ND 1-10         | 10-10            | 150       |
| 41703T    | Spot Cal'n for 41703.    |                      |                     | 15 min @                | 15V                   | D4<br>3900        | D3<br>4300           | D2<br>4810                |                  |           |
| 41704     | HD 203156                | 21 <sup>h</sup> 15.4 | +37° 49             | 02 24                   | 03 10                 | 00 07W            |                      | Fe Arc<br>ND 1-10         | 10-12            | 23        |
| 41704T    | Spot Cal'n for 41704.    |                      |                     | 15 min @                | 15V                   | D4<br>3900        | D3<br>4300           | D2<br>4810                |                  |           |
| 41705     | 28 Cyg = HD 191610       | 20 <sup>h</sup> 05.7 | +36° 33             | 03 14                   | 03 43                 | 01 50W            |                      | Fe Arc<br>ND 1-10         | 10-15            | 100       |
| 41705T1   | Strip Cal'n for 41703    |                      |                     | (Labelled 5T1)          |                       | 90sec             |                      |                           |                  |           |
| 41705T2   | Strip Cal'n for 41704-05 |                      |                     | (Labelled T2)           |                       | 90sec             |                      |                           |                  |           |
| 41705T3   | Spot Cal'n               |                      |                     | 15 min @                | 7.5 v                 | D2<br>Hx          | 4 <sup>m</sup> @ 7.5 | D3<br>Hx                  |                  |           |
| 41706T4   | Comp test                |                      |                     |                         |                       |                   |                      | Ne<br>no filter           | 120 <sup>s</sup> |           |
| 41707T5   | Spot Cal'n               |                      |                     | 15 min @                | 7.5 v                 | D2 Hx             | 4 <sup>m</sup> @ 7.5 | D3 Hx                     |                  |           |
| 41707 F   | Focus test               |                      |                     |                         |                       |                   |                      | Ne<br>N. filter           | 120<br>120       |           |



Spectr. Temp. ... 6.2°F .....

Dome Temp./Hum. +17°C / 190%

Transparency Conditions ... Very Good ..... 22

Focus ... 10-R .....

Spectr. Temp. ... 59°F .....

Dome Temp./Hum. +13°C / 196%

| Comparison<br>pe/Filt. Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.       | Inst.  | Grating/<br>Tilt | Slit | Emulsion                  | P.H. | Program          | Remarks       | Quality |
|----------------------------|-----------|--------|--------------|-----------|--------|------------------|------|---------------------------|------|------------------|---------------|---------|
| 400                        | /150      | 3-4'   | 6.8-<br>7.7  | F0-<br>G1 | G12    | G12/.490         | 13/5 | IaO E<br>IaO-E            | A    | Cepheid/Evans    |               | Fine    |
| 600                        | /23       | 3-7'   | 5.9          | F2        | G12    | G12/.490         | 13/5 | *IaO-E<br>*IaO-E          | B    | Ceph/Evans       |               | gng     |
| 260                        | /100      | 3-5'   | 4.98         | B3Te      | G12    | G12/.490         | 13/9 | *IaO-E<br>IaO-E<br>*IaO-E | A    | SB Blue          | dust on slit? | Fine    |
|                            |           |        |              |           | G12/24 | .490             |      | HIEe                      |      |                  |               | ok      |
|                            |           |        |              |           |        |                  | 13/5 | HIE                       | A    |                  | Wr 4 in       | blank   |
|                            |           |        |              |           |        |                  |      | HIE                       |      |                  |               | ok      |
|                            |           |        |              |           |        |                  | 13   | HIE                       | A    | T = 60°F F = 15R |               | blanks  |
|                            |           |        |              |           | IaO    | 8" D19           | 68°F | .19                       | 1.64 | .17              | 1.68          |         |
|                            |           |        |              |           | HIE    | 7" D19           | 68°F |                           |      |                  |               |         |

23

Emulsion Batches:

II a. O-E 14017-28067

Date Fri/Sat July 1/2 Observers Ly-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.     |
|-----------|--------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|----------|
| 41708     | HD 131511                | 14 48.9      | +19 33              | 20 48                   | 23 42                 | 3 12W             | +19 22      | Fe Arc/<br>NO 110         | 9-9-9    |
| 41708T1   | Spot Colln for 41708-14  |              |                     |                         | 15 min @ 15V          | D4<br>3900        | D3<br>4300  | D2<br>4810                |          |
| 41708T2   | Strip Colln for 41708-14 |              |                     |                         | 60 sec                |                   |             |                           |          |
| 41709     | HD 175426 (8' Lyr)       | 18 58        | +36 51              | 23 49                   | 00:14                 | 00 16E            | +37 02      | Fe Arc<br>ND 110          | 9-9-9    |
| 41710     | "                        | "            | "                   | 00:17                   | 00:57                 | 00 26W            | "           | "                         | 9-9-12   |
| 41711     | "                        | "            | "                   | 00:58                   | 01:32                 | 01 01W            | "           | "                         | 10-10-12 |
| 41712     | HD 222107 (λ And)        | 23 32.7      | +45 55              | 01:38                   | 02:20                 | 02 53E            | +46 26      | "                         | 12-12-12 |
| 41713     | HD 191610 (28 Cyg)       | 20 05.7      | +36 33              | 02:25                   | 03 02                 | 01 16W            | +36 52      | "                         | 10-10-12 |
| 41714     | HD 222107                | 23 32.7      | +45 55              | 03:06                   | 03 40                 | 01 33E            | +46 24      | "                         | 13-12-   |



28067

Spectr. Temp.  $70^{\circ}\text{F}$   
 Focus  $5\text{B}$   
 Spectr. Temp.  $60^{\circ}\text{F}$

Dome Temp./Hum.  $+18^{\circ}\text{C}/70\%$   
 Dome Temp./Hum.  $+12^{\circ}\text{C}/85\%$

Transparency Conditions  $\dots$  *cloudy stretches*  $24$   
*intermittent cloud all night*  
*very gusty*

| Comparison<br>Filter | Exp.  | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.   | Inst.              | Grating/<br>Tilt  | Slit  | Emulsion | P.H. | Program    | Remarks                     | Quality           |
|----------------------|-------|-----------|--------|--------------|-------|--------------------|-------------------|-------|----------|------|------------|-----------------------------|-------------------|
|                      |       | 400/117   | 3"-5"  | 6.84         | dK1   | G12                | G12/0.498         | 13/15 | IIa0-e   | A    | Asm-KK     | Cloud by 21 40-22.20        | Fine              |
|                      |       |           |        |              |       |                    |                   |       | IIa0-e   |      |            |                             |                   |
|                      |       |           |        |              |       |                    |                   |       | IIa0-e   |      |            |                             |                   |
| Rec<br>D 110         | 9-10  | 400/110   | 3"-4"  | 5.2          | B3    | G12                | G12/498           | 13/15 | IIa0-e   | B    | SpBin-Ly   | clear                       |                   |
| "                    | 9-10  | 400/112   | 3"     | "            | "     | "                  | "                 | "     | "        | A    | "          | Fo Arcs sl wk               | Fine              |
| "                    | 10-10 | 400/109   | 3"     | "            | "     | "                  | "                 | "     | "        | B    | "          |                             | vsl sm            |
| "                    | 2-2   | 200/80    |        | 4.5          | G8III | "                  | "                 | 9/15  | "        | A    | H&K Bin-Ly | intermittent cloud at start | Fine              |
| "                    | 10-10 | 200/100   |        | 4.98         | B3Ve  | "                  | "                 | 13/9  | "        | B    | SpBin-Bin  | dirty o/s                   | slit dest<br>Fine |
| "                    | 13-13 | 200/80    | 2-3"   | 4.5          | G8II  | "                  | "                 | 9/15  | "        | A    | H&K Bin-Ly |                             | Fine              |
|                      |       |           |        |              |       | 8 <sup>m</sup> D19 | 68 <sup>o</sup> F |       |          |      |            |                             |                   |





3067

Spectr. Temp.  $65^{\circ}\text{F}$

Dome Temp./Hum.  $16^{\circ}\text{C} / 83\%$

Transparency Conditions  $\dots$  Very good  $\dots$  Low haze  $\dots$  26

Focus  $\dots$  5-B  $\dots$

\* used same exp Bar as last night.

Spectr. Temp.  $\dots$

Dome Temp./Hum.  $\dots$

Comparison  
e/Filter Exp.

Arc  
1/10 10-10  
2  
1/10  
Arc  
1/10 10-10

Arc  
1/10 10-10

1/10 10-10

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.    | Inst.                   | Grating/Tilt | Slit | Emulsion | P.H. | Program   | Remarks               | Quality          |
|-----------|--------|-----------|--------|-------------------------|--------------|------|----------|------|-----------|-----------------------|------------------|
| 400/130   | 3"     | 6.5       | A2 III | G 12                    | G12/0.49B    | 13/5 | IIa0-e   | A    | WATERLOO  |                       |                  |
|           |        |           |        |                         |              |      | IIa0-e   |      |           | next to strip rack    |                  |
| 100/132   | 2"     | 7.8       | H0 III | "                       | G12/0.49B    | 13/5 | IIa0-e   | B    | -11-      |                       |                  |
|           |        |           |        |                         |              |      | "        |      |           |                       |                  |
| 200/100   | 2"     | 4.98      | B3 V   | "                       | G12/0.49B    | 13/9 | "        | A    | Spine Blm | spect of Dust on slit | Fine             |
| 200/120   | 2-3"   | 2.9       | F8 Ib  | "                       | "            | "    | "        | B    | Waterloo  |                       | sl 9ng<br>sl str |
|           |        |           |        | 8 <sup>m</sup> Dig 68°F |              |      |          |      |           |                       |                  |

27

Emulsion Batches:

..II.9.0-e.19017-02077

Date JULY 4/5 MON/TUES Observers Burt - Tm .....

| 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.     |
|-----------|-----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|----------|
| 41719     | HD 191610 (28 Cyg)          | 20 05.7      | +36 33              | 22 48                   | 23 35                 | 01 59 E           | +36 57      | FE ARC<br>N.D. 1.10       | 12-12-12 |
| 41719T1   | Spot Calc for 41719-20      |              |                     |                         | 15 min @ 15V          | DA                | D3          | D2                        |          |
| 41719T2   | Strip Calc for 41719-20     |              |                     |                         | 90 sec                |                   |             |                           |          |
| 41720     | HD 175588 <sup>S' Lyr</sup> | 18 51.0      | +36 46              | 23 40                   | 00 18                 | 00 01 E           | +37 03      | Fe Arc<br>ND 110          | 12-12-12 |
|           | meant to do S' Lyr for Ly   |              |                     |                         |                       |                   |             |                           |          |

Spectr.  
Focus.  
Spectr.  
Exp. Mtr.  
400/200  
400/64



077

Spectr. Temp. ... 76°F ..... Dome Temp./Hum. ... +23°C. / 85% Transparency Conditions ... Hazy → cloudy 29  
 Focus ... 20-B .....  
 Spectr. Temp. .... Dome Temp./Hum. ... +21°C. / 93%

| Comparison<br>e/Filter Exp. | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.  | Inst.           | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program          | Remarks  | Quality                |
|-----------------------------|-----------|--------|--------------|------|-----------------|------------------|------|----------|------|------------------|--|------------------------|
| ARC<br>L10<br>2<br>110      | 400/200   | 2"     | 4.98         | B3Te | G12             | G12/498          | 13/9 | II a 0 E | A    | S, Bin - Blw     |  | fine<br>thru<br>glass! |
| ARC<br>110                  | 400/64    | 3"     | V=<br>4.3    | M4II | G12             | G12/498          | 13/5 | "        | B    | Realized mistake | no field & it looks too red<br>but is brightest in finder<br>Thick cloud | sl w/2                 |
|                             |           |        |              |      | 8" Dig 60°F .17 |                  |      |          |      |                  |  |                        |











077

Spectr. Temp.  $68^{\circ}F$

Dome Temp./Hum.  $17^{\circ}C / 87\%$

Transparency Conditions *Very good* 32

Focus  $10-B$

Spectr. Temp. ....

Dome Temp./Hum.  $14^{\circ}C / 94\%$

*Used last night Exp Box #3*

Comparison  
e/Filter Exp.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.                | Inst.             | Grating/Tilt | Slit                                    | Emulsion           | P.H. | Program                | Remarks  | Quality |
|-----------|--------|-----------|--------------------|-------------------|--------------|---|--------------------|------|------------------------|--|---------|
| 400/110   | 4-6"   | 8.3       | F4                 | G12               | G12/         | 18/.35                                  | D <sub>20</sub> -e | A    | RSCVN                  | some cloud R/S                                   | sl str  |
|           |        |           |                    |                   |              | ( <i>may have been bumped from .5</i> ) | "                  |      |                        | next to last night's D <sub>20</sub> <i>calm</i> | ok      |
|           |        |           |                    |                   |              |   | "                  |      |                        |  |         |
| 400/70    | 3"     | 4.18      | 33V <sub>2</sub>   | "                 | G12/         | 13/9                                    | "                  | B    | Bl <sub>n</sub> Sp Bin | cloud  | vsl str |
|           |        |           | 8 <sup>m</sup> D19 | 68 <sup>o</sup> F | .21          | 1.75                                    |                    |      |                        |  |         |







35

Tuesday/Wednesday

Date ... July 12-15/77 ... Observers ... Tr-Gies .....

Emulsion Batches:

IIaD 11017-11077  
127-05 00075-11077

| 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                | Comparator<br>Type/Filter | Exp. Mtr. |
|-----------|-------------------------|---|---------------------|-------------------------|-----------------------|--------------------------|----------------------------|---------------------------|-----------|
| 41734     | HD 191610 (28 Cyg)      | 20 <sup>h</sup> 05 <sup>m</sup> .7              | +36° 33'            | 20:46                   | 21:28                 | 3 34E                    | +36° 50'                   | Fe Arc<br>ND. 110         | 12-12     |
| 41734T1   | Spot Calc for 41734-39  |   |                     |                         |                       | 15 min @ 15V             | D4 D3 D2<br>3900 4300 4810 |                           |           |
| 41734T2   | Strip Calc for 41734-39 |   |                     | 90 sec                  |                       |                          |                            |                           |           |
| 41735     | 8' Lyrae<br>HD 175426   | 18 <sup>h</sup> 50 <sup>m</sup> .2              | +36° 51'            | 21:25                   | 22:02                 | 1 45E                    | +37 00                     | Fe Arc<br>ND. 110         | 12-12     |
| 41736     | HD 186688 (S1 Cyg)      | 19 <sup>h</sup> 40 <sup>m</sup> 48 <sup>s</sup> | +29° 01.4           | 22:07                   | 23:47                 | 0:53E                    | +29 16                     | Fe Arc<br>ND. 110         | 12-12     |
| 41737     | HD 191610 28 Cyg        | 20 05.7   | +36 33              | 23:50                   | 00:25                 | 0:37E                    | +36 50'                    | Fe Arc<br>ND 110          | 12-12     |
| 41738     | HD 191610 28 Cyg        | 20 05.7   | +36 33              | 00:30                   | 01:01                 | 0:01E                    | +36 50'                    | Fe Arc<br>ND 110          | 12-12     |
| 41739     | HD 191610 28 Cyg        | 20 05.7   | +36 33              | 01:06                   | 01:39                 | 0:37W                    | +36 50'                    | Fe Arc<br>ND 110          | 12-12     |
| 41740     | HD 212097 32 Peg        | 22 16.7   | +27 50              | 01 45                   | 03:03                 | 0 10E                    | +28 17                     | UV Filter<br>No ND        | 8-8       |
| 41740T1   | Spot Calc for 41740     |   |                     | 15 min @                | 7.5V                  | D4 D2 D3<br>5100 Hx 5450 |                            |                           |           |
| 41740T2   | Strip Calc for 41740    |   |                     | 180 sec                 |                       |                          |                            |                           |           |





37

Wed - Thurs

Date July 13-14/77 Observers Rm - Ri

Emulsion Batches:

I<sub>2</sub>O-F 14017-11072

| 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. Mtr.        |
|-----------|--------------------------------|------------------------------------|---------------------|-------------------------|-----------------------|---------------------|--------------------|---|------------------|
| 41741     | HD 163506 = 89 Her             | 17 <sup>h</sup> 51 <sup>m</sup> .4 | 26° 9'              | 21:14                   | 21:49                 | 00 SSE              | +26° 09'           | F <sub>2</sub> ARC<br>ND 1/10<br>UV FILTER    | 7-7<br>400 90    |
| 41742     | HD 186688 = 80 Cyg             | 19 <sup>h</sup> 40.8               | +29° 01.4           | 22:04                   | 00:53                 | 00 <sup>h</sup> 20W | +29° 19'           | F <sub>2</sub> ARC<br>ND 1/10<br>UV FILTER    | 7-7<br>400 180   |
| 41742T1   | Spot Calc'n for 41742-46       |                                    |                     |                         | 15 min @              | 15V                 | D4 D3<br>3900 4300 | D2<br>4810                                    |                  |
| 41742T2   | dup Calc'n for plates 41742-46 |                                    |                     |                         | 90 sec                |                     |                    |   |                  |
| 41743 ✓   | HD 186791 (89 Aql)             | 19 <sup>h</sup> 41.5               | +10° 22'            | 01:05                   | 01 14                 | 00 <sup>h</sup> 40W | +10° 41'           | F <sub>2</sub> ARC<br>ND 1/10<br>UV FILTER    | 12-72<br>400 26  |
| 41744     | HD 203156                      | 21 <sup>h</sup> 15 <sup>m</sup> 23 | +37° 49'            | 01:25                   | 02:25                 | 00 <sup>h</sup> 16W | +38° 14'           |   | 7-7<br>400 90    |
| 41745     | HD 213306 (89 Cyg)             | 22 <sup>h</sup> 25 <sup>m</sup> 27 | +57° 54.2           | 02:33                   | 02:51                 | 00 <sup>h</sup> 27E | +58° 24'           |   | 7-7<br>400 89    |
| 41746     | HD 191610 (89 Cyg)             | 20 <sup>h</sup> 05 43              | +36° 33'            | 03:11                   | 03:47                 | 02 <sup>h</sup> 49W | +36° 54'           | F <sub>2</sub> ARC<br>ND 1/10<br>NO<br>FILTER | 12-12<br>400 100 |
| 41746F1   | focus test out nd/100          |                                    | 69° F               | focus                   | 108                   |                     |                    |   | 5/5              |



pectr. Temp. .... 73°F ..... Dome Temp./Hum. 22°C ... 80%

Transparency Conditions ... *grilled* ... *not the 38*

ocus ... 10B .....

*seeing is not too hot*

pectr. Temp. ... 69°F ..... Dome Temp./Hum. ... 17°C ... 98%

| Comparison Type/Filter | Exp.   | xp. Mtr. | Seeing | Ptg. Mag. | Sp.                | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program         | Remarks  | Quality                       |
|------------------------|--------|----------|--------|-----------|--------------------|-------|--------------|------|----------|------|-----------------|--|-------------------------------|
| Fe                     | ND 110 | 100/90   |        | 5.82      | F2Ia               | G16B  | G16B/.380    | 13/5 | Ia0-E    | A    | Cepheid EVans   | for this grating 50R from UV filter in top of slot | vsl str                       |
| Fe                     | ND 110 | 100/180  | 3-4    | 6.8-7.66  | F0                 | G16B  | G16B/.380    | 13/5 | Ia0-E    | B    | "               | "  |                               |
|                        |        |          |        |           |                    |       |              |      | Ia0-E    |      |                 |  | edge broken                   |
|                        |        |          |        |           |                    |       |              |      | Ia0-E    |      |                 |  |                               |
| Fe Acc                 | ND 110 | 80/26    | 3-5    | 4.15      | K3II               | G16B  | G16B/.380    | 9/5  | Ia0-E    | A    | Sp Vel.         | -  | fine                          |
|                        |        | 100/90   |        | 5.89      | F2                 | G16B  | G16B/.380    | 13/5 | Ia0-E    | B    | Cepheid - Evans | -  | vsl str                       |
|                        |        | 100/87   |        | 4.1-5.2   | F2Ib               | "     | "            | "    | "        | A    | "               | "  | vsl str                       |
| Fe Acc                 | ND 110 | 100/100  |        | 4.98      | B3Ic               | G-12  | G12/.490     | 13/9 | Ia0-E    | B    | Sp Bin - Blk    | refocused to 10B                                   | vsl str                       |
|                        |        |          |        |           |                    |       |              | 9    | Ia0-E    | B    |                 |  | good focus none sl corr. resp |
|                        |        |          |        |           | 8 <sup>m</sup> D19 | 68°F  | .19          | 1.69 |          |      |                 |  |                               |





Spectr. Temp. ... 74°F .....

Dome Temp./Hum. ... 22°C 98% .....

Transparency Conditions ..... 40

Focus ..... 20B .....

Spectr. Temp. ....

Dome Temp./Hum. ....

| Comparison<br>type/Filter | Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.   | Inst. | Grating/<br>Tilt | Slit   | Emulsion | P.H. | Program      | Remarks                 | Quality |
|---------------------------|-----|-----------|--------|--------------|-------|-------|------------------|--------|----------|------|--------------|-------------------------|---------|
|                           |     | 100/100   | 1"     | 4.98         | B3IIc | G-12  | G-12/490         | 13/1.9 | IIa0-E   | A    | Sp. Bin-13In |                         |         |
|                           |     | 100/550   | 1"     | 4.83         | B8II  | G-16R | G16/700          | 12/1.5 | 127-05   | B    | Algal STD,   | UV filter in.           | very wh |
|                           |     |           |        |              | "     |       |                  |        | IIa0-E   |      |              |                         |         |
|                           |     |           |        |              |       |       |                  |        | IIa0-E   |      |              | IIa0Fi exposed Box #3   |         |
|                           |     |           |        |              |       |       |                  |        | 127-05   |      |              | 127-05 w exposed Box #2 |         |
|                           |     |           |        |              |       | IIa0  | 8" Dig           | 68°F   | .18      | 1.62 |              |                         |         |
|                           |     |           |        |              |       | 127   | 5" Dig           | 68°F   | .20      | 2.62 |              |                         |         |



41

Emulsion Batches:

Trac-E 14017-14027...

Date July 15-16 1977 Observers Ly-Ri

| 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    | Exp. Mtr. |
|---|----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|--------------------|----------------------------|--------|-----------|
| 41749   | HD161868 ( $\gamma$ Ori)   | 17 42.9      | +02 45              | 22:30                   | 22:51                 | 100 22W           | +02 50             | Fe ARC<br>ND1-10           | 12-12  | 200/50    |
| 41750   | HD175426 ( $\delta$ Lyr)   | 18 50.2      | +36 51              | 22:56                   | 23:16                 | 00 19E            | +37 02             | "                          | "      | 200/13    |
| 41751   | HD191610 (28 Cyg)          | 20 05.7      | +36 33              | 23:21                   | 23:39                 | 01 11E            | +36 51             | "                          | 12 121 | 200/48    |
| 417511  | apert cal for plate 41749- | 54           |                     |                         | 15 min @ 15 mlt       |                   | D4 D3<br>3800 4300 | D2<br>4810                 |        |           |
| 417512  | apert cal for plate 41749- | 34           |                     |                         | 90 sec                |                   |                    |                            |        |           |
| 41752   | HD175426 ( $\delta$ Lyr)   | 18 50.2      | +36 51              | 23:44                   | 00:01                 | 00 26W            | +37 02             | Fe ARC<br>ND1-10           | 12 12  | 115       |
| 41753   | HD226868 (Cygnus-1)        | 19 54.6      | +34 56              | 00:15                   | 03:00                 | 02 21W            | +35 16             | Fe ARC<br>ND1-10<br>ND1-10 | 77 7   | 50/24     |
| 41754   | HD222107 ( $\lambda$ And)  | 23 32.7      | +45 55              | 03:10                   | 03:50                 | 00 26E            | +46 25             | Fe ARC<br>ND1-10           | 12B    | 200/53    |
| 41753 emulsion was quite streaky at end of exposure (stuck to plate holder) |                            |              |                     |                         |                       |                   |                    |                            |        |           |
| 41754 interrupted by clouds several times during 1st 40 counts.             |                            |              |                     |                         |                       |                   |                    |                            |        |           |





43

Sat-Sun

Date July 16/17, 1977. Observers RM - Di

Emulsion Batches:

H&amp;E 14017-14027...

| 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.  |
| 41755     | HD 147547            | 16 17.5      | +19 23              | 22 22                   | 22 36                 | 1 38W              | 19 19         | F2 ARC<br>NA 116  | 12-12 |
| 41756     | HD 175588            | 18 51.0      | +36 47              | 22 42                   | 0 20                  | 0 54W<br>D4        | +36°59'<br>D3 | "                 | 12-12 |
| 4175671   | spot cal. for plate  | 41755-60     |                     |                         | 15 min @ 15 min       | 4 3800             | 4300          | D2<br>4810        |       |
| 4175672   | strip cal. for plate | 41755-60     |                     |                         | 90 min                |                    |               |                   |       |
| 41757     | HD 187013            | 19 42.6      | +33 30              | 0 25                    | 0 50                  | 0 26W              | +33°47'       | F2 ARC<br>ND 1.10 | 12-12 |
| 41758     | HD 196758            | 20 34.3      | +0 08               | 0 56                    | 1 52                  | 0 36W              | +00°34'       | "                 | 12-12 |
| 41759     | HD 218634            | 23 04.5      | +08° 08'            | 1 56                    | 3 06                  | 1 40E <sup>x</sup> | +08°40'       | "                 | 12-12 |
| 41760     | HD 3627              | 0 34.0       | +30 19              | 3 10                    | 3 20                  | 1 55E              | +30°52'       | "                 | 12-12 |

Spectr. T.

Focus...

Spectr. T.

Exp. Mtr.

150

200/32

150

200

200

200/90





45

Date *Sun Mon July 17-18, 1937* Observers *B.B. - Ri*

Emulsion Batches:

*D98.07-20047-30067*  
*II. D. E. 14017-14077.*

| 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.            |
|-----------|------------------------------|----------------------|---------------------|-------------------------|-----------------------|-------------------|----------------|---------------------------|-----------------|
| 41761     | HD139319 (TW Dra)            | 15 <sup>h</sup> 32.4 | +64° 14'            | 20:50                   | 21:03                 | 0 54 W            | +64° 05.8      | Fe arc<br>N.D. 1.10       | 8-8-8 100/61    |
| 41762     | HD191240 (SW Cyg)            | 20 <sup>h</sup> 3.8  | +46° 01'            | 21:10                   | 22:31                 | 2 09 E            | +45 20.8       | "                         | 8-8-8 800/60    |
| 4176291   | spot cal for plates 41761-66 |                      |                     |                         | 15 min                | 15 V D 8<br>4810  | 7 V D 1<br>H d | 7 V D 2<br>5450           |                 |
| 41763     | HD5679 (U Cep)               | 00 <sup>h</sup> 59.9 | +81° 45.1           | 22:41                   | 23:02                 | 6 33 E            | 81° 53.1       | Fe ARC<br>N.D. 1.10       | 10-10-10 100/62 |
| 41764     | " "                          | "                    | "                   | 23:07                   | 23:25                 | 6 09 E            | "              | "                         | 10-10-10 800/73 |
| 41765     | " "                          | "                    | "                   | 23:27                   | 23:50                 | 5 45 E            | "              | "                         | 10-10-10 800/75 |
| 41766     | (RSCep)                      | 04 <sup>h</sup> 48.6 | +80° 06'            | 0:01                    | 3:00                  | 6 33 E            | +80° 21.8      | "                         | 8-8-8 500/54    |
| 4176671   | spot cal for plates 41767-68 |                      |                     |                         | 15 min @ 15 min       | by<br>3800        | PB<br>4300     | D2<br>4810                |                 |
| 41767     | HD191610 (28 Cyg)            | 20 <sup>h</sup> 5.7  | +36° 33'            | 3:12                    | 3:28                  | 2 45 W            | +36° 54.2      | "                         | 12-12-1 100/102 |
| 41768     | HD222107 (A And)             | 23 <sup>h</sup> 32.7 | +45° 55'            | 3:33                    | 3:46                  | 0 23 E            | 46 25.3        | "                         | 13-13-1 800/81  |



Spectr. Temp. .... 78°F (26°C) Dome Temp./Hum. 26°C 90% Transparency Conditions ... *spec. 9* ..... 46

Focus ..... 2.5B

Spectr. Temp. .... 74°F Dome Temp./Hum. .... 22°C 98%

| Comparison<br>pe/Filter Exp. | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.            | Inst. | Grating/<br>Tilt | Slit  | Emulsion | P.H. | Program      | Remarks                  | Quality            |
|------------------------------|-----------|--------|--------------|----------------|-------|------------------|-------|----------|------|--------------|--------------------------|--------------------|
| 2 arc<br>D. 1.10<br>8-8-80   | 00/61     | 1-2"   | 7.5V         | AG             | G65   | 0.490            | 20/4  | 098-02   | A    | BB echp bin. | WR4 Filter in            | v sl wh            |
| "<br>8-8-80<br>7/102<br>5450 | 00/60     |        | 9.5V         | A2             | "     | "                | "     | "        | B    | "            | "                        | wh.                |
| 2 arc<br>D. 1.10<br>10-10-80 | 00/64     |        | 7.0<br>9.8   | B8+<br>B8II-IV | G-65  | 0.490            | 13/4  | 098-02   | A    | BB echp Bin. | "                        | sl wh              |
| "<br>10-10-80                | 00/73     |        | "            | "              | "     | "                | 13/5  | "        | B    | "            | "                        | "                  |
| "<br>10-10-80                | 00/75     |        | "            | "              | "     | "                | 13/5  | "        | A    | "            | "                        | "                  |
| "<br>8-8-80<br>02<br>4810    | 00/54     |        | 10.0<br>11.7 | A5e+<br>G      | "     | "                | 20/4  | "        | B    | "            | "                        | wh                 |
|                              |           |        |              |                |       |                  |       | IIco-E   |      |              |                          |                    |
| 1<br>12-1-80                 | 00/102    | 1-2    | 4.98         | B3II           | G12   | .490             | 13/19 | "        | A    | Blh Sp Bin   |                          | vsl str            |
| 1-15-80                      | 00/81     | 1-2    | 3.75         | G8II-IV        | "     | "                | 9/5   | "        | B    | Ly Sp Bin    |                          | fine               |
|                              |           |        |              |                |       |                  |       |          |      |              | 098-02 in exposed Box #2 | 5" 019 68° 27 1.63 |
|                              |           |        |              |                |       |                  |       |          |      |              | IIco-E in exposed Box #5 | 8" 019 65° 18 1.61 |





Spectr. Temp.  $80^{\circ}$ Dome Temp./Hum.  $79^{\circ}$  92%Transparency Conditions ... *lazy* ..... 49

Focus ... 30B

Spectr. Temp. ...  $76^{\circ}\text{F}$ Dome Temp./Hum. ...  $74^{\circ}$  99%

| Comparison<br>Filter Exp                   | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.     | Inst.              | Grating/<br>Tilt | Slit | Emulsion             | P.H. | Program     | Remarks               | Quality                      |
|--|-----------|--------|--------------|---------|--------------------|------------------|------|----------------------|------|-------------|-----------------------|------------------------------|
| Ac<br>110<br>12-2-                         | 00/10Z    | 1"     | 4.82         | B3Ie    | G12                | G12/0.49B        | 13/9 | II <sub>a</sub> -OE  | A    | Sp. Bin-B/n |                       | fine                         |
| Ac<br>F. Filter<br>No<br>8-9<br>D2<br>4810 | 00/23Z    | 1'     | 9.74         | 09.7Tab | G16B               | G16B/0.38B       | 18/9 | II <sub>a</sub> -OE  | B    | Sp Bin-B/n  | Focus 30K   UV Filter | fine                         |
|  |           |        |              |         |                    |                  |      | II <sub>2</sub> -O-E |      |             |                       | ok                           |
|  |           |        |              |         |                    |                  |      | II <sub>a</sub> -OE  |      |             |                       |                              |
| 0 Filter<br>5/c                            |           |        |              |         |                    |                  | 9    | II <sub>2</sub> -O-E | B    |             |                       | ends of<br>plate in<br>focus |
|  |           |        |              |         | 8 <sup>m</sup> D19 | 69°E             | .21  | 1.78                 |      |             |                       |                              |

49

Emulsion Batches:

Dol-e 14017 -18077

Date .. 1977. July 20/21. <sup>Wed</sup> Tours Observers .. R.M. - T.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.  |
|-----------|----------------------------|----------------------|---------------------|----------------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| 41771     | HD163506 = 89 Her          | 17 <sup>h</sup> 51.4 | +26° 4              | 20 55                            | 21 34                 | 00 42E            | +26 08      | Fe Arc<br>ND 1-10         | 7-7-7 |
| 41771T    | Sprt Calibration for plate | 41771-75             |                     | 15 min @ 15V                     |                       | D4<br>3900        | D3<br>4300  | D2<br>4810                |       |
| 41772     | HD198726 = TVul            | 20 47.2              | +27° 52.5           | 21 55                            | 23 16                 | 01 57E            | +28 14      | "                         | 7-7-7 |
| 41772T    | strip coll for 41771-75.   |                      |                     |                                  |                       |                   |             | 90 sec                    |       |
| 41773     | HD126688 = SU Cyg          | 19 <sup>h</sup> 40.8 | +29° 01             | 23 25                            | 01 54                 | 01 48W            | +29 17      | Fe Arc<br>ND 110          | 7-7-7 |
| 41774     | HD 206778 = E Peg          | 21 <sup>h</sup> 39.3 | +9 25               | 01 <sup>h</sup> 59 <sup>24</sup> | 02 08                 | 00 02W            | +9 52       | "                         | 7-14  |
| 41775     | HD198726 = TVul            | 20 <sup>h</sup> 47.2 | +27° 52             | 02 15                            | 03 28                 | 02 16 W           | +28 15      | "                         | 7-7-7 |
| 41775F    | focus test                 | out out/in in        |                     |                                  |                       |                   |             | no filter                 | 5-5   |





51

4

Thurs

Date 1977 July 21/22 Fri Observers Gies-Tn

Emulsion Batches:

IIa0-e. 14017. 18077  
 098-02. 20097. 18077  
 IIa0-e\* 14017. 21077

| 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 | E     | Exp. Mtr |
|-----------|------------------------------|----------------------|---------------------|-------------------------|-----------------------|-------------------|----------------------|---------------------------|-------|----------|
| 41776     | HD 191610                    | 20 5.7               | +36 33              | 20 37 <sup>20 52</sup>  | 21 08                 | 3 19 E            | +36 52               | Fe Arc<br>ND 1.10         | 12-12 |          |
| 41776T1   | Strip Cal'n for 41776, 78-79 |                      |                     |                         |                       |                   |                      |                           |       |          |
| 41776T2   | Spot Cal'n for 41776, 78-79  |                      |                     |                         | 15 min @ 15 V         | D4<br>3900        | D3 D2<br>4300 4810   |                           |       |          |
| 41777     | HD 226868 = Cyg X-1          | 19 <sup>n</sup> 54.6 | +34° 56'            | 22 02 <sup>01</sup>     | 02 40 <sup>21</sup>   | 2 25 W            | +35 14               | Fe Arc<br>No Filter       | 5-5   |          |
| 41777T1   | Spot Cal'n for 41777         |                      |                     |                         | 15 min @              | 15VD3<br>4810     | 7VD1 7VD2<br>Ha 5450 |                           |       |          |
| 41777T2   | Strip Cal'n for 41777        |                      |                     |                         | 90 sec                |                   |                      |                           |       |          |
| 41778     | HD 191610 = 28 Cyg           | 20 <sup>n</sup> 05.7 | +36° 33'            | 02 50 <sup>30</sup>     | 03 12 <sup>01</sup>   | 2 45 W            | +36 52               | Fe Arc<br>ND 1.10         | 12-12 |          |
| 41779     | HD 222107 = X And            | 23 <sup>n</sup> 32.7 | +45° 55'            | 03 23 <sup>33</sup>     | 03 45 <sup>34</sup>   | 0 09 E            | +46 24               | Fe Arc<br>ND 1.10         | 13-13 |          |
| 41780     | HD 206778                    | 21 39.3              | +9 25               | 03 50 <sup>3</sup>      | 03 59                 | 1 58 W            | +9 51                | "                         | 13-13 |          |
| 41780F    | Focus Test                   |                      |                     |                         | in is / out out       |                   |                      | no<br>Filter              | 5/3   |          |



18077  
18077  
21072

Spectr. Temp. 76°F  
Focus 20-B  
Spectr. Temp. 67°F

Dome Temp./Hum. 23°C / 73%  
Dome Temp./Hum. 17°C / 88%

Transparency Conditions . V. good . . . sl. haze to South 52

| Comparison Type/Filter            | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.   | Inst.     | Grating/Tilt | Slit   | Emulsion | P.H.   | Program                        | Remarks        | Quality                              |                        |
|-----------------------------------|-----------|--------|-----------|-------|-----------|--------------|--------|----------|--------|--------------------------------|----------------|--------------------------------------|------------------------|
| Fe Arc<br>NO 140 12               | 2-4       | 4.98   | B3Ic      | G12   | G12/0.49B | 13/9         | IIa0-e | A        | SB B/n | In IIa0-Box                    |                | sl uneven<br>guiding                 |                        |
|                                   |           |        |           |       | 90sec     |              | "      |          |        | (Exp meter repaired<br>by Hr.) |                |                                      |                        |
| Fe Arc<br>No 5-er<br>NO 2<br>5450 | 800/162   | 3-2    | 9.74      | 097Ic | G24R      | G24/0.38B    | 18/5   | 098-02   | A      | S-Bin. B/n                     | In 098 Box     | *Forgot to<br>change<br>Focus to 30R | exp de<br>out of focus |
|                                   |           |        |           |       |           |              |        | 098-02   |        | ↑ written filter in            | "              |                                      |                        |
|                                   |           |        |           |       |           |              |        | 098-02   |        |                                | "              |                                      |                        |
| Fe Arc<br>No 45                   | 200/110   | 3"     | 4.98      | B3Ic  | G12       | G12/0.49B    | 13/9   | IIa0-e   | B      | SB B/n                         | 120B Focus set |                                      |                        |
| Fe Arc<br>No 1                    | 100/80    | 3      | 3.75      | G8    | G12       | G12/0.49B    | 9/5    | IIa0-e   | A      | SB Ly                          |                |                                      |                        |
| "                                 | 100/95    | 3-5'   | 3.98      | K2Ib  | "         | "            | 9/5    | IIa0-e*  | B      | std vel                        |                |                                      |                        |
| No Filter 5/                      |           |        |           | "     | "         | "            | 9      | IIa0-e*  | A      |                                |                | blue<br>shift                        |                        |
|                                   |           |        |           |       | IIa0      | 8" D19       | 68°F   | .18      | 1.61   |                                |                |                                      |                        |
|                                   |           |        |           |       | 098       | 4" D19       | 65°F   | .17      | 1.60   |                                |                |                                      |                        |

53

Date 1977 July 22/23  
FRI/SAT Observers Ly-Tn

Emulsion Batches:

D.O.C. 14017-21077

098-02 20047-18077

| 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.    |
|-----------|------------------------------|--------------|---------------------|-------------------------|-----------------------|----------------------|---------------------------------|---------------------------|---------|
| 41781     | HD175426 (S' Lyr)            | 18 50.2      | +36 51              | 20:37                   | 20:54                 | 02 13 E              | +37 03                          | Fe<br>ND-110              | 13-13-1 |
| 41781 T1  | Strip Cal'n for 41781-84, 89 |              |                     |                         |                       |                      |                                 |                           | 90sec   |
| 41781 T2  | SPOT Cal'n for 41781-84, 89  |              |                     |                         | 15 min @ 15 V         | D4<br>3900           | D3<br>4300                      | D2<br>4810                |         |
| 41782     | HD191610 (28 Cyg)            | 20 05.7      | +36° 33'            | 20 59                   | 21:18                 | 03 05 E              | +36 53                          | Fe<br>ND 1-10             | 13-13-1 |
| 41783     | HD131511                     | 14 48.9      | +19 33              | 21:25                   | 22:41                 | 03 34 W              | +19 20                          | "                         | 13-13-1 |
| 41784     | HD175426 (S' Lyr)            | 18 50.2      | +36 51              | 22:44                   | 23:04                 | 00 03 E              | +37 01                          | "                         | 13-13-1 |
| 41785     | HD5679 (U Cep)               | 00 59.9      | +81 45.1            | 23:21                   | 23:47                 | 05 29 E              | +81 51                          | Fe Arc<br>ND 1-10         | 8-8-8   |
| 41785 T1  | Spot Cal'n for 41785-88.     |              |                     |                         |                       | 7 min @ 15 V<br>4810 | D4 (7V D1)<br>(15 min Hdr 5450) | 7V D2                     |         |
| 41786     | HD5679 (U Cep)               | 00 59.9      | +81 45.1            | 23:49                   | 00:18                 | 04 58 E              | +81 51                          | Fe Arc<br>ND 1-10         | 8-8-8   |
| 41787     | "                            | "            | "                   | 00:24                   | 00:55                 | 04 21 E              | "                               | "                         | 8-8-8   |
| 41788     | HD185151                     | 19 32.6      | +27 39              | 01:04                   | 01:40                 | 01 50 W              | +27 56                          | "                         | 8-8-8   |
| 41788 T   | Strip Cal'n for 41785-88.    |              |                     |                         |                       |                      |                                 |                           | 90sec   |
| 41789     | HD224085                     | 23 49.9      | +28 06              | 02:01                   | 03:48                 | 00 19 E              | +28 36                          | Fe Arc<br>ND 1-10         | 8-11-   |



Spectr. Temp.  $70^{\circ}\text{F}$  ..... Dome Temp./Hum.  $20^{\circ}\text{C}/67\%$  ..... Transparency Conditions *light cirrus - good* ..... 54  
 Focus *10B → 50R → 10B at end*  
 Spectr. Temp.  $66^{\circ}\text{F}$  ..... Dome Temp./Hum.  $18^{\circ}/80\%$  ..... → *cloud by 03<sup>h</sup>*

| Comparison<br>type/Filter Exp | Exp. Mtr.   | Seeing | Ptg.<br>Mag. | Sp.  | Inst.                 | Grating/<br>Tilt | Slit  | Emulsion | P.H. | Program     | Remarks   | Quality          |
|-------------------------------|-------------|--------|--------------|------|-----------------------|------------------|-------|----------|------|-------------|---|------------------|
|                               | 200/55      | 2"3"   | 5.2          | B3   | G12                   | G12/.49B         | 13/.5 | IIaO-e   | A    | SB-Ly.      |   | fine             |
|                               |             |        |              |      |                       |                  |       | "        |      |             |   |                  |
|                               |             |        |              |      |                       |                  |       | "        |      |             |   |                  |
|                               | 200/101     |        | 4.98         | B3ve | G12                   | G12/.49B         | 13/.9 | "        | B    | SB-Bln.     |   | fine             |
|                               | 400/177     | 3"     | 6.8          | KOV  | G12                   | "                | 13/.5 | "        | A    | ASM-KK      |   |                  |
|                               | 100/56      | 3"     | 5.2          | B3   | "                     | "                | "     | "        | B    | SB-Ly       |   | fine             |
|                               | 400/38      | 3"5"   | ~7           | B    | G65                   | G65/.49B         | "     | 098-02   | A    | EB-BB       | Wroten 4 filter in                                      | fine             |
|                               |             |        |              |      |                       |                  |       | 098-02   |      |             |   |                  |
|                               | 100/38      | 4"5"   | ~7           | B    | G65                   | G65/.49B         | 13/.5 | "        | B    | EB-BB       | possible light leak cover flipped<br>wroten 4 filter in | sl. fogged       |
|                               | 100/37      | "      | "            | "    | "                     | "                | "     | "        | A    | EB-BB       | wroten 4 filter in                                      | fine             |
|                               | 300/50      | 4"     | 8.54         | KO   | "                     | "                | 18/.4 | "        | B    | H+K Bin-Ly. | 1st arc before slit length changed<br>Flap ~.5 W        | fine             |
|                               |             |        |              |      |                       |                  |       | "        |      |             |   |                  |
|                               | 100/130     | 3"     | 8.3          | KO   | <sup>G8</sup><br>G16B | G16/.38B         | B/.4  | IIaO-e   | A    | H+K Bin-Ly  | UV filter in 50R Focus<br>changed in after 100 cts      | wrong<br>grating |
|                               | IIaO 8" 019 | 68°F   |              |      | .20                   | 1.60             |       |          |      |             |   |                  |
|                               | 098         | 4 1/2" | "            |      | .19                   | 1.82             |       |          |      |             | *KK - more IIaO's may be needed before Monday           |                  |
|                               |             |        |              |      |                       |                  |       |          |      |             | There are 9 strips & 3(4x5)                             |                  |

55 2 Tours 3 hrs

Emulsion Batches:  
 D.O.E. 19017 - 21077  
 O98:02.E. 20047 - 23077

Date 1977 July 23/24..... Observers Fgi-Tn.....  
 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.         |
|-----------|---------------------------|----------------------|---------------------|-------------------------|-----------------------|---------------------|--------------------|---------------------------|--------------|
| 41790     | HD 190918                 | 20 <sup>h</sup> 02.2 | +35° 31             | 23:31                   | 01:50                 | 0 <sup>h</sup> 35W  | +35° 47            | Fe-Mc<br>nd 1-10          | 13-13-<br>13 |
| 41790T1   | Spot Calc for 41790; 92.  |                      |                     |                         | 15 min @ 15V          |                     | D4 D3<br>3900 4300 | D2<br>4810                |              |
| 41790T2   | Strip Calc for 41790, 92. |                      |                     |                         | 90sec                 |                     |                    |                           |              |
| 41791     | HD 210334                 | 22 <sup>h</sup> 04.6 | +45° 15             | 02:03                   | 03:19                 | 0 <sup>h</sup> 06 W | +45 43             | Fe-Mc<br>No Filter        | 6-7-6        |
| 41791T1   | Spot Calc for 41791       |                      |                     | 15 min @                | 15V D3<br>4810        | 7V D1<br>Hd         | 7VD2<br>5450       |                           |              |
| 41791T2   | Strip Calc for 41791      |                      |                     | 90sec                   |                       |                     |                    |                           |              |
| 41792     | HD 191610 (29/11)         | 20 <sup>h</sup> 05   | +36° 33             | 03:28                   | 04 04                 | 3 46W               | +36° 52            | Fe Arc<br>NB 110          | 13<br>13-13- |

Spectr. T  
 Focus.  
 Spectr.  
 Exp. Mtr.  
 400/200  
 400/100  
 200/97



Spectr. Temp. 72°F

Dome Temp./Hum. 66°F / 89%

Transparency Conditions OK - sl/hazy - cloudy 56

Focus 10-B

Spectr. Temp. 65°F

Dome Temp./Hum. 62°F / 91%

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.            | Inst.  | Grating/Tilt | Slit | Emulsion | P.H. | Program    | Remarks | Quality |
|-----------|--------|-----------|----------------|--------|--------------|------|----------|------|------------|---------|---------|
| 400/240   | 2-3"   | 7         | WV4.5<br>+ORIN | G12    | G12 / 0.498  | 13/5 | IIa DE   | A    | Fgi WR     | cloud   | fine    |
|           |        |           |                |        |              |      | "        |      |            |         |         |
|           |        |           |                |        |              |      | "        |      |            |         |         |
| 400/100   | 2-3"   | 7.3       | G5             | G16R   | G16 / .7     | 13/5 | 098-02E  | B    | RSCVn      | AR LAC  | sl wh   |
|           |        |           |                |        |              |      | "        |      |            |         |         |
|           |        |           |                |        |              |      | "        |      |            |         |         |
| 200/97    | 3"     | 4.98      | B3Te           | G12    | G12 / 0.498  | 13/9 | IIa DE   | A    | Blu Sp Bin |         | fine    |
|           |        |           | IIa0           | 8" D19 | 68°F         | .19  | 1.77     |      |            |         |         |
|           |        |           | 098            | 5" D19 | 68°F         | .18  | 1.76     |      |            |         |         |

57

Emulsion Batches:

some KK

D.O.C. 14017-21077

Date 1977 July 25-26 Mon... Observers But-Tn.....  
Tues

| 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.             |
|-----------|----------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------------------|
| 41792F    | Taurus                           |              |                     |                         |                       |                   |             | Fe, no                    | 10,10            |
| 41793     | $\alpha$ Boo <sup>HD124897</sup> | 14 11.1      | +19 42              | 20 19                   | 20 22                 | 02 04 W           |             | Fe,<br>no F. filter       | 5-5 20/50        |
| 41794     | HD 138406                        | 15 26.8      | +62 05              | 20 44                   | 22 15                 | 02 44 W           | +61 51      | Fe Arc<br>ND 1.10         | 14-11-1 400/120  |
| 41794T    | Spot Coln for 41794-98           |              |                     | 15 min @ 15V            |                       | D4<br>3900        | D3<br>4300  | D2<br>4810                |                  |
| 41795     | HD 169169                        | 18 18.3      | +14 57              | 22 23                   | 00 50                 | 02 26 W           | +15 06      | FE ARC<br>ND 1.10         | 13-13-13 400/120 |
| 41796     | HD 208835                        | 21 53.9      | +46 23              | 01 03                   | 02 55                 | 00 56 W           | +46 50      | "                         | 13-13-13 400/110 |
| 41797     | HD 222207                        | 23 33.5      | +41 57              | 02 59                   | 04 03                 | 00 24 W           | +42 26      | "                         | 14-14-1 400/120  |
| 41797T    | Extra Spot Coln for 41794-98     |              |                     | 15 min @ 15V            |                       | D4<br>3900        | D3<br>4300  | D2<br>4810                |                  |
| 41798     | HD 191610 (28 Cyg)               | 20 05.7      | +36 33              | 04 06                   | 04 23                 | 04 12 W           | +36 50      | FE ARC<br>ND 1.10         | 13-13-13 200/80  |











61

11 11  
11 11

Emulsion Batches:

... II<sub>u</sub>0-e. 14017-25077  
... 098-02. 20097-23077Date 1977 July 27/28 <sup>Wed</sup>/<sub>Thurs</sub> Observers Rm-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.  |
| 41804     | HD186688=50 Cyg        | 19 <sup>h</sup> 40.8 | +29° 01             | 20:38                   | 21:33                 | 02 05 E                 | +29 12                           | Fe Arc<br>No N.D.      | 7-7-7 |
| 41804T    | Spot Calc for 41804-5. |                      |                     | 15 min @ 15V            |                       | D <sup>4</sup> 3906     | D <sup>3</sup> 4300              | D <sup>2</sup> 4810    |       |
| 41805     | HD163506=89 Her        | 17 51.4              | +26 04              | 21 45                   | 22:07                 | 00 17 W                 | +26 04.6                         | Fe Arc<br>No N.D.      | 7-8-7 |
| 41805T    | Strip Calc for 41804-5 |                      |                     |                         |                       | 90sec                   |                                  |                        |       |
| 41806     | HD187921=SV Vul        | 19 47.4              | +27 12              | 22 36                   | 23 55                 | 00 10 W                 | +27 25                           | Fe Arc<br>No N.D.      | 4-4-4 |
| 41806T1   | Spot Calc for 41806-7  |                      |                     | 15 min @                |                       | 15V D <sup>3</sup> 4810 | 7V D <sup>1</sup> H <sub>2</sub> | 7V D <sup>2</sup> 5450 |       |
| 41806T2   | Strip Calc for 41806-7 |                      |                     | 90sec                   |                       |                         |                                  |                        |       |
| 41807     | HD172359=TT Aql        | 19 <sup>h</sup> 03.2 | +01° 08             | 00:03                   | 02 07                 | 03 06 W                 | +1 16                            | Fe Arc<br>No N.D.      | 5-4-4 |
| 41807F    | Focus Test for G16R    |                      |                     |                         |                       |                         |                                  | No Filter              | 8/8   |



Spectr. Temp.  $68^{\circ}\text{F}$  ..... Dome Temp./Hum.  $65^{\circ}\text{F}/63\%$

Transparency Conditions ...  $50/50$  - thin haze  $\rightarrow$  cloud <sup>62</sup>

Focus  $50R \rightarrow 0$  for normal

Spectr. Temp.  $63^{\circ}\text{F}$  ..... Dome Temp./Hum.  $60^{\circ}\text{F}/80\%$

| Comparison<br>Filter Exp. | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.          | Inst.   | Grating/<br>Tilt | Slit  | Emulsion | P.H. | Program       | Remarks                  | Quality                      |
|---------------------------|-----------|--------|--------------|--------------|---------|------------------|-------|----------|------|---------------|--------------------------|------------------------------|
| 7-7-7                     | 60/100    | 1"     | 6.8-7.7      | F0-G1        | G16B    | 16/0.3813        | 13/.5 | BaO E    | A    | Cepheid/Evans | UV filter Focus 50R      | fine                         |
| 7-8-7                     | 100/50    | 1.2"   | 5.82         | F2 Ia        | G16B    | 16/0.3813        | 13/.5 | IIa OE   | B    | Cepheid/Evans | UV Filter 50R            | fine                         |
|                           |           |        |              |              |         |                  |       | IIa OE   |      |               |                          |                              |
| 4-4-7                     | 60/82     | 1"     | $\approx 9$  | $\approx 68$ | G16R    | 16/0.7B          | 13/.5 | 09802    | B    | Ceph/Evans    | Focus 0                  | fine                         |
|                           |           |        |              |              |         |                  |       | 098-02   |      |               |                          |                              |
|                           |           |        |              |              |         |                  |       | 098-02   |      |               |                          |                              |
| 5-4-7                     | 60/50     | 2.3"   | 7-9          | F8-K0        | G16R    | 16/0.7B          | 13/.5 | 098-02   | A    | Cepheid/Evans | haze $\rightarrow$ cloud | fine                         |
| 8-1/8                     |           | in in  |              |              |         |                  |       |          | B    | set at 0      |                          | defective emulsion - useless |
|                           |           |        |              |              |         |                  |       |          |      | Thick         |                          |                              |
|                           |           |        |              |              | IIa0 8" | D19              | 68°F  | 20       | 172  |               |                          |                              |
|                           |           |        |              | newhenge     | 098 5"  | "                | "     | 31       | 1.92 |               |                          |                              |





Spectr. Temp. ... 57°F .....

Dome Temp./Hum. 63°F / 82%

Transparency Conditions ... Cloudy but B.M. says it's clear <sup>64</sup>

Focus ... 0 .....

Spectr. Temp. ....

Dome Temp./Hum. 65°F / 88%

Comparison  
of Filter Exp.

At  
2.6.0 12-73

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst.  | Grating/Tilt | Slit | Emulsion | P.H. | Program     | Remarks | Quality |
|-----------|--------|-----------|------|--------|--------------|------|----------|------|-------------|---------|---------|
| 200/73    | 2-3"   | 4.98      | B3Te | G12    | G12/498      | 13/9 | IIaOe    | A    | Sp-Bin. Blk |         | fine    |
|           |        |           |      |        |              |      | "        |      |             |         | #1 wk   |
|           |        |           |      |        |              |      | "        |      |             |         |         |
|           |        |           |      | 8" D19 | 680F         | 20   | 175      |      |             |         |         |





Spectr. Temp.  $71.0^{\circ}$

Dome Temp./Hum.  $69^{\circ}F / 91\%$

Transparency Conditions  $S. haza - cloudy$  <sup>66</sup>

Focus  $O-R$

Spectr. Temp.  $65^{\circ}$

Dome Temp./Hum.  $63^{\circ} / 100\%$

| Comparison<br>No./Filter | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.     | Inst.   | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program  | Remarks       | Quality                     |
|--------------------------|-----------|--------|--------------|---------|---------|------------------|------|----------|------|----------|---------------|-----------------------------|
| 2<br>8/10                | 200/80    | 1-2-3  | 5.6          | F8 IV   | G12     | 12/0.498         | 13/5 | Ilol-e   | A    | Waterloo | broken 1pc    | red end<br>save cu-<br>fine |
| 2<br>8/10                |           |        | 7.8          |         | S12     |                  |      | "        |      | "        |               |                             |
| 2<br>8/10                | 400/150   | 2-4"   | 7.8          | G12     | G12     | 12/.498          | 13/5 | "        | B    | Wat Prog | cloud         |                             |
| 2<br>8/10                | 200/95    | 2"     | 5.2          | F11 III | "       | "                | 13/5 | "        | A    | "        | "             | fine                        |
| 2<br>8/10                | 200/40    | 3"     | 5.9          | F11 IV  | "       | "                | 13/5 | "        | B    | "        | " clouded out | fine                        |
|                          |           |        |              |         | Ilol 8m | 20               | 164  |          |      |          |               |                             |

67

Sun - Mon

Emulsion Batches:  
 II 40 - e. 19017 - 30077  
 098-02 20047 - 23077

Date July 31 - Aug 1, 1977 Observers Ges., 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 | Ex     |
|-----------|----------------------|---------------------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|--------|
| 41813     | HD 191610 = 28 Cyg   | 20 <sup>h</sup> 05 <sup>m</sup> | +36° 33'            | 20 47                   | 21 41                 | 02 05 E           | +36 48      | Fe Arc<br>ND 1-10         | 13-13T |
| 41813T1   | Spot Caln for 41813  |                                 |                     | 15 min                  | @ 15V                 | D4<br>3900        | D3<br>4300  | D2<br>7810                |        |
| 41813T2   | Strip Caln for 41813 |                                 |                     | 90 sec                  |                       |                   |             |                           |        |
| 41814     | Hm Sge               | 19 37.5                         | +16 31              | 23 09                   | 0 01                  | 0 41 W            | +16 50      | Fe Arc<br>None            | 5-4    |
| 41814T1   | Spot Caln for 41814  |                                 |                     | 15 min                  |                       | 15V D3<br>4810    | 8V D1<br>Hx | 8V D2<br>5450             |        |
| 41814T2   | Strip Caln for 41814 |                                 |                     | 60 sec                  |                       |                   |             |                           |        |
| 41814F    | Focus Test for G12   |                                 |                     |                         |                       |                   |             | 1                         | 16-16  |









30077  
...  
...

Spectr. Temp. ... 72°F  
Focus ... 10-B  
Spectr. Temp. ... 63°F

Dome Temp./Hum. 20°C / 78%  
Dome Temp./Hum. 16°C / 86%

Transparency Conditions Very Good  
\*Used Sat night's Exp Box  
marked UaO.e

70

| Companso<br>Type/Filter Exp     | Exp. Mir.                  | Seeing             | Ptg.<br>Mag. | Sp. | Inst.      | Grating/<br>Tilt    | Slit | Emulsion | P.H. | Program            | Remarks | Quality |
|---------------------------------|----------------------------|--------------------|--------------|-----|------------|---------------------|------|----------|------|--------------------|---------|---------|
| FE ARG<br>NO 1.10<br>D2<br>5950 | 9/140                      | 3-5"               | 7.48         | A0  | G12        | <sup>12</sup> .490B | 13/5 | II u o e | A    | Am MR              |         | fin     |
|                                 | ← do you really mean 5450? |                    |              |     |            |                     |      |          |      | in back of Exp Box |         |         |
| FE ARG<br>NO 1.10               | 10/140                     | 3"                 | 7.58         | A2  | G12        | <sup>12</sup> .490B | 13/5 | II u o e | B    | Am MR              |         | fin     |
| " 1313                          | 10/140                     | 2-3"               | 7.50         | A0  | G12        | "                   | "    | "        | A    | Ap MR              |         |         |
|                                 |                            | all weekend plates |              |     | 7 1/2" D19 | 69°F                | 20   | 226      |      |                    |         |         |











Spectr. Temp. ... 72°F ..... Dome Temp./Hum. 70°F/85%

Focus .65 (.50R... for G16B)

Spectr. Temp. .65°F ..... Dome Temp./Hum. 60°F/80%

Transparency Conditions . Excellent... well! 7.74  
not as good as we  
thought

| Comparison Type/Filter Exp | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.    | Inst.               | Grating/Tilt  | Slit | Emulsion | P.H. | Program      | Remarks   | Quality                                   |
|----------------------------|-----------|--------|-----------|--------|---------------------|---------------|------|----------|------|--------------|-----------|---|
| ND-110 77<br>5. Acc        | 500/150   | 2-3"   | 9.74      | 09.716 | G166                | G166<br>.38/5 | 18/5 | IIa0-e   | A    | Sp. Bin Blr. | UV Filter | <b>PUSH</b><br>v slow +<br>flexure!<br>wk |
|                            |           |        |           |        |                     |               |      | IIa0-e   |      |              |           |   |
|                            |           |        |           |        |                     |               |      | IIa0-e   |      |              |           |   |
|                            |           |        |           |        | 10 <sup>m</sup> D19 | 68°F          | 22   | 80       |      |              |           |   |





Spectr. Temp.  $67^{\circ}\text{F}$

Dome Temp./Hum.  $62^{\circ}\text{F}/92\%$

Transparency Conditions *Excellent by 2<sup>h</sup> 76*

Focus  $50\text{R}$

*good meteor shower*

Spectr. Temp.  $63^{\circ}\text{F}$

Dome Temp./Hum.  $100\%$

*max of Perseids at 06 AM*

| Comparison<br>Type/Filter<br>Exp. | Exp. Mtr. | Seeing       | Ptg.<br>Mag. | Sp.      | Inst. | Grating/<br>Tilt | Slit  | Emulsion           | P.H. | Program     | Remarks       | Quality                   |
|-----------------------------------|-----------|--------------|--------------|----------|-------|------------------|-------|--------------------|------|-------------|---------------|---------------------------|
| 5-3-3                             | 300/77    | 3-6"         | 9.74         | 09.71.06 | G24 R | G16R/38B         | 18/35 | 098-02E            | A    | Sp. Bin Bln | wrt #4 Filter | * KK<br>push if<br>slight |
|                                   |           |              |              |          |       |                  |       | 098-02E            |      |             |               | you can.                  |
|                                   |           |              |              |          |       |                  |       | 098-02E            |      |             |               |                           |
| 8-8                               |           | inin/out out |              |          | G24 R | G16R/38B         | 18    | 098-02E            | B    | 63°F        | wrt #4        | center to red             |
|                                   |           |              |              |          |       |                  |       | 5 1/2 <sup>m</sup> |      |             |               | D19 68°F 32 148           |

77

Emulsion Batches:  
 .098-02 ... 20047-04087  
 .IIaO-L ... 14017-30027

Date ... Aug 12/13, 1977 ... Observers ... Gies, 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.     |
| 41820     | wrong star HD 193369<br>HD 191610 = 28 Cyg | 20 <sup>h</sup> 05 <sup>m</sup> 43 <sup>s</sup> | +36° 33'            | 20:00                   | 20:20                 | 2 <sup>h</sup> 50 <sup>m</sup> E | +37° 02.0'                 | Fe ND 1.10    | 13-13-14 |
| 41821     | HDE 226868 = Cyg X-2                       | 19 <sup>h</sup> 54 <sup>m</sup> .6              | +34° 56'            | 20:34                   | 01:26                 | 2 <sup>h</sup> 33 <sup>m</sup> W | +35° 15.6'                 | Fe ND 1.10    | 6-6-6    |
| 41821 T1  | Spot Calc for                              | 41820-21.                                       |                     |                         | 15 min @              | 14V                              | D4 D3 D2<br>3900 4300 4810 |               |          |
| 41821 T2  | Strip Calc for                             | 41820-21.                                       |                     |                         | 90 sec                |                                  |                            |               |          |
| 41822     | HDE 226868 = Cyg X-2                       | 19 <sup>h</sup> 54 <sup>m</sup> .6              | +34° 56'            | 01:29                   | 04 22                 | 05 33 W                          | +35 16'                    | Fe none       | 4-4-     |
| 41822 T1  | Spot Calc for                              | 41822   |                     |                         | 15 min @              | 14V D3<br>4810                   | 6V D1<br>Hα                | 6V D2<br>5450 |          |
| 41822 T2  | Strip Calc for                             | 41822   |                     |                         | 70 sec                |                                  |                            |               |          |
|           |  |   |                     |                         |                       |                                  |                            |               |          |
|           |  |   |                     |                         |                       |                                  |                            |               |          |
|           |  |   |                     |                         |                       |                                  |                            |               |          |
|           |  |   |                     |                         |                       |                                  |                            |               |          |
|           |  |   |                     |                         |                       |                                  |                            |               |          |
|           |  |   |                     |                         |                       |                                  |                            |               |          |
|           |  |   |                     |                         |                       |                                  |                            |               |          |
|           |  |   |                     |                         |                       |                                  |                            |               |          |
|           |  |   |                     |                         |                       |                                  |                            |               |          |
|           |  |   |                     |                         |                       |                                  |                            |               |          |
|           |  |   |                     |                         |                       |                                  |                            |               |          |
|           |  |   |                     |                         |                       |                                  |                            |               |          |
|           |  |   |                     |                         |                       |                                  |                            |               |          |
|           |  |   |                     |                         |                       |                                  |                            |               |          |
|           |  |   |                     |                         |                       |                                  |                            |               |          |

Spectr. T  
 Focus  
 Spectr.  
 Exp. Mtr.

200/86

500/240

500/114



Spectr. Temp.  $67^{\circ}\text{F}$ .....

Dome Temp./Hum.  $66^{\circ}\text{F}/72\%$ .....

Transparency Conditions *Excellent*.....  $78$

Focus  $0 \rightarrow +50R$ .....

Spectr. Temp.  $63^{\circ}\text{F}$ .....

Dome Temp./Hum.  $59^{\circ}\text{F}/100\%$ .....

| Comparison<br>Type/Filter                 | Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.                | Inst.               | Grating/<br>Tilt      | Slit | Emulsion                   | P.H. | Program       | Remarks  | Quality              |
|---|-----|-----------|--------|--------------|--------------------|---------------------|-----------------------|------|----------------------------|------|---------------|--|----------------------|
| F <sub>0</sub><br>NO 1, 10                | B-3 | 200/86    | 1.2"   | 4.98         | B3Te               | G12                 | G12/49B               | 13/9 | IIa0-e                     | A    | Sp. Bin. Bln. | Focus 0  | fine                 |
| F <sub>1</sub><br>NO 6-6<br>D2<br>4810    |     | 300/240   | 1.2"   | 9.74         | 097I <sub>ab</sub> | G16B                | G16B/.38B             | 18/4 | IIa0-e<br>IIa0-e<br>IIa0-e | B    | Sp. Bin Bln.  | Focus +50R (UV in)   | Fine                 |
| F <sub>2</sub><br>NO 4-4<br>SV D2<br>5450 |     | 00/114    | 2"-3"  | 9.74         | 097I <sub>ab</sub> | G24                 | G16B/.38B             | 18/3 | 098-02<br>098-02<br>098-02 | A    | Sp Bin. Bln.  | (UV out) wrt #4 in *<br>cloud by dawn *<br>*<br>KK* should be pushed<br>like last night's?<br>(098-in Box # 1) | exp fine,<br>hazy by |
|   |     |           |        |              |                    | 098 5 <sup>m</sup>  | D19 68 <sup>°</sup> F | 33   | 120                        |      |               |  |                      |
|   |     |           |        |              |                    | 11a0 8 <sup>m</sup> |                       | 17   | 156                        |      |               |  |                      |

79 2 Large Tours 2.5 hrs

Emulsion Batches:

...II<sub>a</sub>O<sub>e</sub> 14017-12087

Date Aug 13/14 1977 Sat  
Sun Observers ... B/n ... 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.       |
| 41823     | HD 191610                       | 20 05.7      | +36 33              | 22 49                   | 23 08                 | 00 11 W           | +36 47      | NO 1.10     | 1313-13    |
| 41823TV   | Spot Cal <sub>n</sub> for 41823 |              |                     |                         | 15 min @ 15V          |                   | D4<br>3900  | D3<br>4300  | D2<br>4810 |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |
|           |                                 |              |                     |                         |                       |                   |             |             |            |

Spectr. T.  
Focus.  
Spectr.  
Exp. Mr.  
200/90



Spectr. Temp.  $72^{\circ}\text{F}$ .....

Dome Temp./Hum.  $69^{\circ}\text{F}/93\%$

Transparency Conditions *Hazy - Cloudy* 80

Focus  $10-B$ .....

Spectr. Temp. ....

Dome Temp./Hum.  $68^{\circ}\text{F}/97\%$

Comparison  
type/Filter Exp.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst.  | Grating/Tilt | Slit  | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|------|--------|--------------|-------|----------|------|---------|---------|---------|
| 200/90    | 1.2"   | 4.98      | B3Ze | G12    | G12/1.498    | B/1.9 | Ud-e     | A    | SB Blm  |         |         |
|           |        |           |      |        |              |       | n        |      |         |         |         |
|           |        |           |      | 8" D17 | 68° F        | 17    | 168      |      |         |         |         |

0140 1375  
D2  
9810

81

Sun / mon  
Date .. Aug. 14 / 15, 1977 Observers .. Gies - Th .....

Emulsion Batches:

... D<sub>1</sub> - e... 14017... 12087

| 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.     |
| 41824     | HD191610 = 28 Cyg         | 20 <sup>h</sup> 05 <sup>m</sup> .7 | +36° 33'            | 20:03                   | 20:40                 | 2 <sup>h</sup> 14 <sup>m</sup> E | +36 53      | Fe<br>ND.110     | 13-13-13 |
| 41824T    | Spot Cal <sup>n</sup> for | 41824 - 26.                        |                     |                         | 30 min @              | 15V D8<br>3900                   | D2<br>4300  | D1<br>4810       |          |
| 41824F    | Focus Test                |                                    |                     | in in / out out         |                       |                                  |             | Fe Arc<br>None   | 3-3      |
| 41825     | HDE226868 = Cyg X-1       | 19 <sup>h</sup> 54.6               | +34° 56'            | 20:55                   | 03:24                 | 4 <sup>h</sup> 42 <sup>m</sup> W | +35 17      | Fe Arc<br>ND.110 | 6-6-6    |
|           |                           |                                    |                     |                         |                       | Telescope oscillates,            |             | end of Exp       |          |
| 41826     | HD191610 = 28 Cyg         | 20 <sup>h</sup> 05.7               | +36° 33'            | 03:35                   | 04:25                 | 5 32 W                           | +36 56      | Fe<br>ND.110     | 12-12-1  |
| 41826T    | Strip calibration for     | 41824 - 26,                        |                     |                         | 90 sec.               |                                  |             |                  |          |
| 41826F    | Focus                     |                                    |                     |                         |                       | Temp 59°F                        |             | Fe<br>None       |          |





< 83

Wed, Thurs

Emulsion Batches:

..D40-C...10047-15087

Date Aug 17/18, 1977... Observers Gies, 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. Mtr. |
|-----------|--------------------------|----------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----------|
| 41827     | HDE226868 = Cygnus-1     | 19 <sup>h</sup> 54.6 | +34° 56'            | 20:39                   | 03 20                 | 4 49 W            | +35 17      | Fe Arc<br>ND 110          | 6-6E      |
| 41827T1   | Spot Cal'n for 41827-28  |                      |                     |                         | 30 min @ 15V          | D3                | D2          | D1                        |           |
| 41827T2   | Strip Cal'n for 41827-28 |                      |                     |                         | 70 sec                |                   | 4300        | AS10                      |           |
| 41828     | HD 191610                | 20 05.7              | +36 33              | 3:34                    | 04 27                 | 5 46 W            | +36 57      | Fe Arc<br>ND 110          | 13-13     |
| 41828F    | G12 Focus Test           |                      |                     |                         |                       |                   |             | Fe Arc<br>ND 110          | 4-4       |





85

Thurs / Fri

Date Aug 18/19, 1977 Observers Gies, Tn

Emulsion Batches:

.D20 P. 10027. - 15087....

.09802. 20047. - 04087....

| 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   |
|-----------|-------------------------|------------------------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| 41829     | HD 191610 = 28 Cyg      | 20 <sup>h</sup> 05 <sup>m</sup> .7 | +36° 33'            | 19:55                   | 20:25                 | 2 13 E            | +36° 56     | Fe arc<br>ND 1.10         | 13-1  |
| 41830     | HD E 226868 Cyg XI      | 19 54.6                            | +34 56              | 20:35.                  | 00 48                 | 2 22 W            | +35 18      | Fe Arc<br>ND 1.10         | 6-6-6 |
| 41830T1   | Spot Calc for 41829-30  |                                    |                     |                         | 40 min @ 15V          | D3<br>3900        | D2<br>4300  | D1<br>4810                |       |
| 41830T2   | Strip Calc for 41829-30 |                                    |                     |                         | 90 sec                |                   |             |                           |       |
| 41831     | HD E 226868 Cyg XI      | 19 54.6                            | +34 56              | 00:54                   | 4:11                  | 5 45 W            |             | Fe arc<br>no filter       | 5-5   |
| 41831T1   | Spot Calc for 41831-32  |                                    |                     |                         | 15 min @              | 15V D3<br>4810    | 7V D1<br>H2 | 7V D2<br>5450             |       |
| 41832     | HD 217675 = 0 And       | 22 <sup>h</sup> 57.3               | +41° 47'            | 4:20                    | 4:41                  | 3 11 W            | +42 23      | Fe arc<br>no filter       | 7-7   |
| 41831T2   | Strip Calc for 41831-32 |                                    |                     |                         | 60 sec                |                   |             |                           |       |



pectr. Temp. 60°F

Dome Temp./Hum. 59°F / 73%

Transparency Conditions thin cirrus ... 86

ocus 15.R → +75R

pectr. Temp. 53°F

Dome Temp./Hum. 49°F / 85%

| Companso<br>Type/Filter | Exp. | xp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.    | Inst.      | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program        | Remarks   | Quality  |
|-------------------------|------|----------|--------|--------------|--------|------------|------------------|------|----------|------|----------------|---|----------|
| Fe arc<br>ND 1.0        | 15-2 | 10/75    | 2-5"   | 4.98         | B3Ve   | G12        | G12/49B          | 13/9 | IIaO-c   | A    | Sp.Bin. Bln    |   | sl str.  |
| Fe Arc<br>ND 1.0        | 16   | 00/80?   | 2-3-2  | 9.74         | 097I.6 | G16B       | G16/38B          | 18/4 | IIaO-e   | B    | Sp.Bin - Bln   | Exp still slow, maybe<br>UV filter - focus 75R  | fine     |
|                         |      |          |        |              |        |            |                  |      | IIaO-e   |      |                |   |          |
|                         |      |          |        |              |        |            |                  |      | IIaO-e   |      |                |   |          |
| Fe arc<br>ND 1.0        | 15   | 00/72?   | 2"     | 9.74         | 097Iab | G24R       | G24/38B          | 18/4 | 098-02   | A    | SB Bln         | Exp meter seems OK?<br>From beginning of Exp.<br>interrupted due to jammed<br>guiding motion paddle | fine     |
|                         |      |          |        |              |        |            |                  |      |          |      | ~ 7 min        |   |          |
| Fe arc<br>ND 1.0        | 17   | 10/31    | 1.2"   | 3.63         | B6p    | G24R       | G24/38B          | 9/9  | 098-02   | B    | Shell star Bln |   | vsl str. |
|                         |      |          |        |              |        |            |                  |      | 098-02   |      |                |   |          |
|                         |      |          |        |              | IIaO   | 8" D19 68° | 20 158           |      |          |      |                | KK. All should be OK but  |          |
|                         |      |          |        |              | 098    | 4" " "     | 38 193           |      |          |      |                | Exp meter uncertain.  |          |

87

Fri / Sat.

Date Aug. 19/20, 1977 Observers Gies - In.....

Emulsion Batches:

..Ia0e... 10027-15087...

..098-02 20047-04087..

| 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.     |
| 41833     | HDE 226868 = Cyg X-1    | 19 <sup>h</sup> 54.6 | +34° 56'            | 20:05 <sup>21 04</sup>  | 22 02                 | 0 21 W            | +35 18           | Fe arc<br>ND 110    | 6-6-8    |
| 41833T1   | Spot Calc for 41833-34  |                      | 36-38               |                         | 15V @                 | 15min D3<br>3900  | 30min D2<br>4300 | 30min D1<br>4810    |          |
| 41833T2   | Strip Calc for 41833-34 |                      | 36-38               |                         | 60sec                 |                   |                  |                     |          |
| 41834     | HD 190918               | 20 <sup>h</sup> 02.2 | +35° 31'            | 22:49 <sup>23 41</sup>  | 0:33                  | 2 03 W            | +35 53           | Fe arc<br>ND 110    | 10-5-5   |
| 41835     | HDE 226868 = Cyg X-1    | 19 <sup>h</sup> 54.6 | +34° 56'            | 0:39                    | 3:42                  | 5 20 W            | +35 18           | Fe arc<br>No filter | 5-5-5    |
| 41835T1   | Spot Calc for 41835     |                      |                     | 15min @                 |                       | 15V D3<br>4810    | 7V D1<br>Hα      | 7V D2<br>5450       |          |
| 41835T2   | Strip Calc for 41835    |                      |                     | 90sec                   |                       |                   |                  |                     |          |
| 41836     | HD 191610 = 28 Cyg      | 20 51.7              | +36 33              | 3 49                    | 4 07                  | 5 34 W            | +36 58           | Fe arc<br>ND 110    | 12-12-12 |
| 41837     | HD 4502 = J And         | 0 42.0               | +23 43              | 4 13                    | 4 27                  | 1 17 W            | +24 10           | "                   | 12-12-12 |
| 41838     | HD 222107 = λ And       | 23 32.7              | +45 55              | 4 30                    | 4 45                  | 2 49 W            | +                | "                   | 13-      |
| 41838F    | G12 Focus Test          |                      |                     |                         |                       |                   |                  | Fe<br>None          | 4-4      |

Spectr. T

Focus .8

Spectr. T

Exp. Mtr.

Exp. Mtr. ?

800/44

120/145

800/114

800/75

200/80

300/80

4-4



Spectr. Temp.  $.61^{\circ}\text{F}$ .....

Dome Temp./Hum.  $56^{\circ}\text{F} / 92\%$

Transparency Conditions . *Occasional Fast. Cumulus...*  
*very gusty*

Focus  $.85\text{R} \rightarrow 40\text{R}$ .....

Spectr. Temp.  $.50^{\circ}\text{F}$ .....

Dome Temp./Hum.  $46^{\circ}\text{F} / 99\%$

| Comparison<br>Type/Filter Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.            | Inst. | Grating/<br>Tilt | Slit    | Emulsion | P.H. | Program    | Remarks   | Quality               |
|-------------------------------|-----------|--------|--------------|----------------|-------|------------------|---------|----------|------|------------|---|-----------------------|
| 0.0<br>10.10<br>6-6           | 200/44?   | 2"-4"  | 9.74         | 097Iab         | G16B  | G16B/38          | 18/.35  | IIa0-e   | A    | Sp Bin Bln | UV Filter in - some cloud }<br>Cut short then clear }<br>Should <u>Push</u> | de exp<br>very narrow |
| 0.0<br>10.10<br>6-6           | 400/145?  | 3"-6"  | 7            | WN4.5<br>+03Ia | G16B  | G16B/38          | 18/.5   | IIa0-e   | A    | Fgi WR     | UV Filter in  | sl str                |
| 0.0<br>10.10<br>6-6           | 500/114   | 2"-4"  | 9.74         | 097Iab         | G24R  | G16B/38          | 18/.4   | 098-02   | B    | Sp Bin Bln | (Exp meter seems normal)<br>UV out; written in (row)!                       | vsl wk                |
| 0.0<br>10.10<br>6-6           | 200/75    | 2"-4"  | 4.98         | B3Ve           | G12   | G12B/498         | 13/9    | IIa0-e   | A    | S B Bln    | Focus 40-R  | fine                  |
| 0.0<br>10.10<br>6-6           | 200/80    |        | 4.06         | K2IIp          | G12   | G12B/498         | 9/5     | IIa0-e   | B    | Sp Bin Ly. |   | vsl wk                |
| 0.0<br>10.10<br>6-6           | 200/80    |        | 3.75         | G8II-IV        | G12   | G12B/498         | 9/5     | IIa0-e   | A    | Sp Bin Ly. |   | fine                  |
| 0.0<br>10.10<br>6-6           | 400/145?  |        |              |                | G12   |                  | 9       |          | B    |            |   |                       |
|                               |           |        |              |                | IIa0  | 8"               | 219 680 |          |      |            |   | 17 128                |
|                               |           |        |              |                | 098   | 4"               |         |          |      |            |   | 16 166                |







91

MON-TUES

Emulsion Batches:

Date Aug 22/23/1977 Observers Fgi-Tn

... Fe-0-e 10027-20087  
 ... 098-02 20047-19087

| 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.     |
|-----------|-------------------------|----------------------|------------------|----------------------|--------------------|----------------|-------------|---------------------------|----------|
| 41842     | HD 191610               | 20 <sup>h</sup> 05.7 | +36° 33          | 19 48                | 20 01              | 2 21 E         | +36 48      | Fe-Arc<br>ND              | 13-13-13 |
| 41842T    | Spot Caln for 41842     |                      |                  |                      | 15 min @ 15V       | D4<br>3900     | D3<br>4300  | D2<br>4810                |          |
| 41843     | HD 190918               | 20 <sup>h</sup> 02.2 | +35° 31          | 20 11                | 21 41              | 0 36 E         | +35° 46     | Fe Arc<br>ND              | 13-13-13 |
| 41843T    | Strip Caln for 41842-44 |                      |                  |                      | 90sec              |                |             |                           |          |
| 41844     | HD 210334               | 22 <sup>h</sup> 04.6 | +45° 15          | 21 51                | 23 01              | 01 18 E        | +45° 40     | Fe arc<br>UV filter<br>ND | 7-7-12   |
| 41845     | HD 210334               | 22 <sup>h</sup> 04.6 | +45° 15          | 23 09                | 0 20               | 0 0            | +45° 40     | Fe arc<br>no filter       | 4-4-4    |
| 41845T1   | Spot Caln for 41845     |                      |                  |                      | 15 min @           | 14V D3<br>4810 | 5V D1<br>Hx | 6V D2<br>5450             |          |
| 41845T2   | Strip Caln for 41845    |                      |                  |                      | 80sec              |                |             |                           |          |
|           |                         |                      |                  |                      |                    |                |             |                           |          |
|           |                         |                      |                  |                      |                    |                |             |                           |          |
|           |                         |                      |                  |                      |                    |                |             |                           |          |
|           |                         |                      |                  |                      |                    |                |             |                           |          |
|           |                         |                      |                  |                      |                    |                |             |                           |          |
|           |                         |                      |                  |                      |                    |                |             |                           |          |
|           |                         |                      |                  |                      |                    |                |             |                           |          |
|           |                         |                      |                  |                      |                    |                |             |                           |          |
|           |                         |                      |                  |                      |                    |                |             |                           |          |
|           |                         |                      |                  |                      |                    |                |             |                           |          |

Spectr.  
 Focus.  
 Spectr.

Exp. Mtr.

200/100

400/301

400/151

400/73





93 Wed-Thurs  
Date Aug 24/25 1977

Observers Fgi - Ri

Emulsion Batches:  
Jeo-E 10027-20087  
09802 20047-19087

| 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.     |
|-----------|-------------------------------|----------------------|---------------------|-------------------------|-----------------------|---------------------|----------------|-------------------------------|----------|
| 41846     | HD 191610                     | 20 <sup>h</sup> 05.7 | +36° 33'            | 20 04                   | 20 18                 | 1 <sup>h</sup> 53E  | +36° 53'       | Fe Arc<br>NO=1.1              | 13-13-13 |
| 41847     | HD 190918                     | 20 <sup>h</sup> 02.2 | +35° 31'            | 20 22                   | 22 10                 | 0 <sup>h</sup> 00E  | +35° 52'       | Fe Arc<br>NO=1.1              | 13-13-13 |
| 41847T1   | Spot Calc for plate 41846     | -49                  |                     |                         |                       | 15mm @ 15 volt      |                | D4 D3<br>3900 4300 4810       |          |
| 41847T2   | cal step wedge in plate 41846 | -49                  |                     |                         |                       | 90 sec              |                |                               |          |
| 41848     | HD 186688 (SU Cys)            | 19 <sup>h</sup> 40.9 | +29° 01.4'          | 22 21                   | 23 50                 | 2 <sup>h</sup> 01W  | +29° 20'       | Fe Arc<br>NO=1.1<br>NO FILTER | 7-7-7    |
| 41849     | HD 219113                     | 23 <sup>h</sup> 08.3 | +02° 08'            | 23 56                   | 01 39                 | 0 <sup>h</sup> 23W  | +02° 40'       | Fe Arc<br>NO=1.1<br>NO FILTER | 7-7-7    |
| 41850     | "                             | "                    | "                   | 01:44                   | 02 49                 | 1 <sup>h</sup> 33W  | "              | Fe Arc<br>NO FILTER           | 4-4-4    |
| 41850T1   | spot calc for plate 41850     | -52                  |                     |                         |                       | 15mm                | D3 15V<br>4810 | D1 7V<br>HD<br>D2 7V<br>5450  |          |
| 41850T2   | cal step wedge in plate 41850 | -52                  |                     |                         |                       | 90 sec              |                |                               |          |
| 41851     | HD 22468                      | 03 <sup>h</sup> 31.6 | +00° 16'            | 02 56                   | 03 37                 | 2 <sup>h</sup> 02E  | +00° 39'       | Fe Arc<br>NO FILTER           | 4-4-4    |
| 41852     | HD 21242 (UX ARI)             | 03 <sup>h</sup> 20.5 | +28° 22'            | 03 42                   | 04:33                 | 00 <sup>h</sup> 53E | +28 45'        | Fe Arc<br>NO FILTER           | 4-4-4    |

Spectr.  
Focus.  
Spectr.

Exp. Mtr.

200/10

100/30

400/100

800/30

800/20

400/100

400/100



Spectr. Temp. 60°F

Dome Temp./Hum. 70°F/70%

Transparency Conditions EXCELLENT 94

Focus 20 R

Spectr. Temp. 54°F

Dome Temp./Hum. 52°F/92%

| Comparison of Filter Exp. | Exp. Mtr. | Seeing | Ptg. Mag.   | Sp.            | Inst. | Grating/Tilt | Slit  | Emulsion | P.H. | Program      | Remarks             | Quality  |
|---------------------------|-----------|--------|-------------|----------------|-------|--------------|-------|----------|------|--------------|---------------------|----------|
| ARC 13-11-1               | 200/101   |        | 4.98        | B3Ic           | G12   | G12/0.49     | 13/9  | IIaD-e   | A    | SpBm Bln     |                     | v sl str |
| ARC 13-11-1               | 100/300   | 3-4    | 7.1         | WN4.5<br>+D95I | G12   | G12/0.49     | 13/15 | "        | B    | WR Fgi       |                     | v sl str |
|                           |           |        |             |                |       |              |       | IIaO-E   |      |              |                     |          |
|                           |           |        |             |                |       |              |       | IIaO-E   |      |              |                     |          |
| ARC 7-7-7                 | 400/100   |        | 6.8<br>7.66 | F0-<br>Q1      | G-16B | G-16/0.38    | 13/15 | IIaO-E   | A    | Cepheid/Erms | uv retain focus 80R | fine     |
| ARC 7-7-7                 | 300/300   |        | 9.0         | G5             | G16B  | G16/0.38     | 20/5  | IIaD-E   | B    | RS CVn       | "                   | fine     |
| ARC 4-4-4                 | 200/200   |        | "           | "              | G-16R | G16/0.70     | 20/5  | 098-02   | A    | "            |                     | v sl wh  |
|                           |           |        |             |                |       |              |       | 098-02   |      |              |                     |          |
|                           |           |        |             |                |       |              |       | 098-02   |      |              |                     |          |
| ARC 4-4-4                 | 100/100   |        | 6.68        | G0             | G-16R | G16/0.70     | 13/15 | 098-02   | B    | R.S. CVn     |                     | v sl wh  |
| ARC 4-4-4                 | 200/100   |        | 7.29        | Q5             | G-16R | G16/0.70     | 13/15 | 098-02   | A    | " "          |                     | v sl wh  |
|                           |           |        |             |                |       |              |       | 098 4"   |      | 24 184       |                     |          |
|                           |           |        |             |                |       |              |       | 1100 8"  |      | 20 200       |                     |          |

95 #1

(Thu/Fri)

Date Aug 25/26, 1977 Observers BB-Ri

Emulsion Batches:

Geo-E. 10.027-20.087...

098-02. 20.047-25.087

| 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.       |
|-----------|--|----------------------|---------------------|-------------------------|-----------------------|---------------------|-------------|---------------------------|------------|
| 41853     | HD191610                               | 20 <sup>h</sup> 5.7  | +36°33'             | 19:48                   | 20:00                 | 2 09 E              | +36°53.1    | Fe Arc<br>ND=1.10         | 131313     |
| 41854     | HD139319 (TW Dra)                      | 15 <sup>h</sup> 32.4 | +64°14'             | 20:20                   | 20:33                 | 3 <sup>h</sup> 00 W | +63°50.9    | "                         | 8-8-8      |
| 41855     | "                                      | "                    | "                   | 20:34                   | 20:45                 | 3 <sup>h</sup> 12 W | "           | "                         | 8-8-8      |
| 41856     | "                                      | "                    | "                   | 20:47                   | 21:07                 | 3 <sup>h</sup> 35 W | "           | "                         | 9-9-9      |
| 41857     | "                                      | "                    | "                   | 21:09                   | 21:29                 | 3 <sup>h</sup> 56 W | "           | "                         | 9-9-9      |
| 41858     | "                                      | "                    | "                   | 21:31                   | 21:52                 | 4 19 W              | "           | "                         | 9-9-9      |
| 4195871   | spot cali' for plates 41853; 64-65     |                      | 64-65               |                         | 15 min @ 15 mils      |                     | D4<br>3900  | D3<br>4300                | D2<br>4810 |
| 4185872   | cal step wedge for plates 41853; 64-65 |                      |                     |                         | 90 sec                |                     |             |                           |            |
| 41859     | HD139319 (TW Dra)                      | 15 <sup>h</sup> 32.4 | +64°14'             | 21:53                   | 22:13                 | 4 40 W              | +63°51.2    | Fe Arc<br>ND=1.10         | 9-9-9      |
| 41860     | "                                      | "                    | "                   | 22:14                   | 22:38                 | 5 05 W              | "           |                           | 9-9-9      |
| 41861     | "                                      | "                    | "                   | 22:39                   | 22:57                 | 5 24 W              | "           |                           | 9-9-9      |
| 41862     | RS Cap                                 | 4 <sup>h</sup> 48.6  | +80°06'             | 23:14                   | 1:51                  | 5 10 E              | +50°19.9    | "                         | 8-8-8      |
| 4186371   | spot cali' for plates 41854-60         |                      |                     |                         | 15 min                | D3 15 V<br>4810     | D1 70<br>Hd | D2 H<br>5450              |            |
| 41863     | HD276247 (RW Per)                      | 4 <sup>h</sup> 13.4  | +42°04'             | 2:09                    | 4:02                  | 2 16 E              | +42°22.3    |                           | 8-8-8      |
| 4186371   | spot cali' for plates 41861-63         |                      |                     |                         | 15 min                | D2 70<br>5450       | D1 70<br>Hd | D3 15 V<br>4810           |            |



Spectr. Temp. .... 62°F .....

Dome Temp./Hum. ... 15°C ... 75%

Transparency Conditions ... excellent .....

96

Focus ..... 20R .....

Spectr. Temp. .... ..

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

| Comparison<br>Type/Filter Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.   | Inst. | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program     | Remarks  | Quality |
|-------------------------------|-----------|--------|--------------|-------|-------|------------------|------|----------|------|-------------|--|---------|
| 2 Arc<br>D=1/0/1313           | 200/100   | 2"     | 4.9B         | B3Te  | G12   | 612/0.49         | 13/9 | IIaOe    | A    | Sp Bin Blh  |  | vsl str |
| " 8-8-5                       | 800/62    |        | 7.5V         | A6    | GG5   | 643/0.49         | 20/4 | 098-02   | B    | Eclp Bin BB | W/4 Filter in. <sup>Telescope<br/>reversed</sup> | fine    |
| " 8-9-5                       | 800/60    |        | "            | "     | "     | "                | "    | "        | A    | "           | "  | fine    |
| " 9-9-9                       | 800/77    |        | "            | "     | "     | "                | 13/5 | "        | B    | "           | "  | vsl wh  |
| " 9-9-9                       | 800/77    |        | "            | "     | "     | "                | "    | "        | A    | "           | "  | "       |
| " 9-9-9                       | 800/78    |        | "            | "     | "     | "                | "    | "        | B    | "           | "  | "       |
| " 9-9-9                       |           |        |              |       |       |                  |      | IIaO-E   |      |             |  |         |
| " 9-9-9                       |           |        |              |       |       |                  |      | IIaO-E   |      |             |  |         |
| " 9-9-9                       | 800/75    |        | 7.4V         | A6    | G-65  | 643/0.49         | 13/5 | 098-02   | A    | Eclp Bin-BB | W/4 Filter in. <sup>Telescope<br/>reversed</sup> |         |
| " 9-9-9                       | 800/75    |        | "            | "     | "     | "                | "    | "        | B    | "           | "  |         |
| " 9-9-9                       | 800/75    |        | "            | "     | "     | "                | "    | "        | A    | "           | "  | sl wh   |
| " 8-8-1<br>102<br>8450        | 800/64    |        | 10.0V        | A5e   | "     | "                | 20/4 | "        | B    | "           | " Karl: I did two                                | sl wh   |
| " 8-8-1<br>8350<br>4810       | 800/70    |        | 9.5V         | A5e+6 | "     | "                | "    | 098-02   | A    | "           | spot cal' since                                  | vsl wh  |
|                               |           |        |              |       |       |                  |      | 098-02   |      |             | " you can only develop                           | fine    |
|                               |           |        |              |       |       |                  |      |          |      |             | 7 plates at a time<br>than in two equal Bins     |         |

Could not page





Spectr. Temp. .... Dome Temp./Hum. .... Transparency Conditions ..... 98

Focus ..... 20R

Spectr. Temp. ... 56°F ..... Dome Temp./Hum. ... 12°C ... 95%

Comparison  
Filter Exp  
1/10  
1/4  
5/5

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.         | Inst. | Grating/Tilt   | Slit | Emulsion | P.H.            | Program  | Remarks     | Quality |
|-----------|--------|-----------|-------------|-------|----------------|------|----------|-----------------|----------|-------------|---------|
| 00/83     | 2-3    | 3.75      | G8<br>IT-IV | G-12  | G-12/<br>1/490 | 9/5  | IT20-E   | B               | Ly-Phos. |             | fine    |
| 00/81     |        | 4.06      | K1MP        | "     | "              | "    | "        | A               | "        |             |         |
|           |        |           |             |       |                | 9    |          | B               |          | Temp - 56°F |         |
|           |        |           |             |       | IT20 8m        |      |          |                 |          |             |         |
|           |        |           |             |       | 098 4 1/2m     | D19  | 68°F     |                 |          |             |         |
|           |        |           |             |       |                |      |          | 22 190          |          |             |         |
|           |        |           |             |       |                |      |          | 20 173 / 20 176 |          |             |         |

99

Fri - Sat

Date Aug. 26-27. 1977. Observers Ly-Ri

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           |
|-----------|---------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------------------------|---------------|
| 41866     | HD 191610 (28 Cyg)        | 20 05.7      | +36° 33'            | 19:45                   | 19:59                 | 02° 07E           | +36° 53'    | FeARC<br>NC=1.10              | 13-13         |
| 41867     | HD 175426 (8' Lyr)        | 18 50.2      | +36° 51'            | 20:03                   | 20:15                 | 00° 36E           | +37° 04'    | "                             | 13-13         |
| 41868     | HD 143313                 | 15 54.6      | +25° 52'            | 20:26                   | 21:39                 | 03° 45W           | +25° 46'    | FeARC<br>NC=1.10<br>UV Filter | 7 16<br>D3 D2 |
| 41868T1   | opt cal. for plates       | 41866-68     |                     |                         |                       | 15mm @ 15V        | 3900        | 4300                          | 4810          |
| 41868T2   | cal step wedge for plates | 41866-68     |                     |                         |                       | 90mm              |             |                               |               |





101

SUN/MON

Date Aug. 28-29, 1977 Observers Fgi - Ri

Emulsion Batches:

HOPE... 10027-26087.

090-02 24047-25087.

| 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   |
|-----------|----------------------------|----------------------|---------------------|-------------------------|-----------------------|-----------------------|--------------------|------------------------------|-------|
| 41869     | HD 190918                  | 20 <sup>h</sup> 02.2 | +35° 31             | 19:45                   | 21:24                 | 00 <sup>h</sup> 31 E  | +35° 50            | Fe Arc<br>ND=1.1             | 13-BL |
| 41869T1   | spot cal for plates        | 41869-70             | +77                 |                         |                       | 15 min @ 15 no filter | D4 D3<br>3500 4300 | D2<br>4810                   |       |
| 41869T2   | cal strip wedge for plates | 41869-70             | +77                 |                         |                       | 90 sec                |                    |                              |       |
| 41870     | HD 191610                  | 20 <sup>h</sup> 05.7 | +36° 33             | 21:27                   | 21:41                 | 00 <sup>h</sup> 17 E  | +36° 54            | Fe arc<br>ND=1.1             | 13-13 |
| 41871     | HD 210334                  | 22 <sup>h</sup> 04.6 | +45° 15             | 21:56                   | 22:44                 | 01 <sup>h</sup> 13 E  | +45° 44            | Fe arc<br>no filter          | 4-4   |
| 41871T1   | spot cal for plates        | 41871-76             |                     |                         |                       | 15 min                | D3 150<br>4810     | D1 70<br>HD<br>D2 70<br>5450 |       |
| 41872     | HD 213389                  | 22 <sup>h</sup> 26.0 | +48° 51             | 22:49                   | 00:00                 | 00 <sup>h</sup> 17 E  | +49° 20'           | Fe arc<br>no filter          | 4-4   |
| 41873     | HD 216489                  | 22 <sup>h</sup> 48.1 | +16° 19             | 00:08                   | 00:46                 | 00 <sup>h</sup> 06 W  | +16° 50            | Fe arc<br>no filter          | 4-4   |
| 41874     | HD 219134                  | 23 <sup>h</sup> 08.5 | +57° 37             | 00:51                   | 01:16                 | 00 <sup>h</sup> 15 W  | +57° 08            | Fe arc<br>no filter          | 4-4   |
| 41875     | HD 224085                  | 23 <sup>h</sup> 49.9 | +28° 06             | 01:21                   | 03:43                 | 02 <sup>h</sup> 02 W  | +28° 38            | Fe arc<br>no filter          | 4-4   |
| 41876     | HD 22468                   | 3 <sup>h</sup> 31.6  | +0° 16              | 03:47                   | 04:36                 | 00 <sup>h</sup> 48 E  | +0° 38'            | Fe arc<br>no filter          | 4-4   |
| 41877     | ♄ And                      | 0 <sup>h</sup> 40.0  | +23° 43'            | 04:42                   | 05:05                 | 02 <sup>h</sup> 31 W  | +24° 16            | Fe arc<br>ND=1.1             | 13-13 |

Spect. T

Focus

Spect.

Exp. Mtr.



Spectr. Temp.  $80^{\circ}\text{F}$ Dome Temp./Hum.  $96^{\circ}\text{F}/82\%$ Transparency Conditions ... *very hazy - humid* ... 102Focus  $20\text{B}$ Spectr. Temp.  $76^{\circ}\text{F}$ Dome Temp./Hum.  $23.0^{\circ}\text{C}/97\%$ 

| Comparison Type/Filter         | Exp   | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.                 | Inst. | Grating/Tilt | Slit | Emulsion                   | P.H. | Program                     | Remarks        | Quality           |
|--------------------------------|-------|-----------|--------|-----------|---------------------|-------|--------------|------|----------------------------|------|-----------------------------|----------------|-------------------|
| Fe Arc<br>NO-1.1<br>D2<br>4810 | 13-21 | 00/600    | 1-2    | 7.1       | WN4.5<br>+09.5IA    | G12   | G12/.49B     | 18/5 | IIaD-e<br>IIaD-E<br>IIaD-E | A    | WR Fgi                      |                | fine              |
| Fe Arc<br>NO-1.1               | 13-21 | 00/100    | 2-3    | 4.98      | K3Ic                | G12   | G12/.49B     | 13/9 | II <sub>1</sub> O-E        | B    | Sp Bn Bln                   | BROKEN 2 PICES | fine              |
| Fe Arc<br>NO-1.1<br>D2<br>5450 | 4-4   | 00/251    | 2-3    | 7.3       | G5                  | G16   | G16/.7B      | 13/5 | 098-02E<br>098-02E         | A    | RS CVn                      |                | v sl wh           |
| Fe Arc<br>NO-1.1<br>D2<br>5450 | 4-4   | 00/251    | 2-4    | 7.52      | K0                  | G16   | G16/.7B      | 13/5 | 098-02E                    | B    | RS CVn                      |                | v sl wh<br>at m D |
| Fe Arc<br>NO-1.1<br>D2<br>5450 | 4-4   | 00/201    | 3-4    | V=5.6     | gK1                 | G16   | G16/.7B      | 13/5 | 098-02E                    | A    | RS CVn                      |                | v sl wh           |
| Fe Arc<br>NO-1.1<br>D2<br>5450 | 4-4   | 00/200    |        | 6.57      | K3I                 | G16   | G16/.7B      | 13/5 | 098-02E                    | B    | RS CVn                      |                | fine              |
| Fe Arc<br>NO-1.1<br>D2<br>5450 | 4-4   | 00/250    |        | 8.3       | K0                  | G16   | G16/.7B      | 13/5 | 098-02E                    | A    | RS CVn                      |                | sl wh             |
| Fe Arc<br>NO-1.1<br>D2<br>5450 | 4-4   | 00/250    |        | 6.68      | G0                  | G16   | G16/.7B      | 13/5 | 098-02E                    | B    | RS CVn                      |                | v sl wh           |
| Fe Arc<br>NO-1.1<br>D2<br>5450 | 13-21 | 00/70     |        | 4.06      | K1 III <sub>p</sub> | G12   | G12/.49B     | 9/5  | IIaD-E                     | A    | Bright Star by pushing down |                | fine              |
|                                |       |           |        |           |                     |       | 098 4"       | 219  | 69°F                       | 25   | 142                         |                |                   |
|                                |       |           |        |           |                     |       | IIaD 7 1/2"  |      | 70°F                       | 22   | 178                         |                |                   |





Spectr. Temp. 72°F

Dome Temp./Hum. 20°C/100%

Transparency Conditions GOOD 104

Focus 10 B

Spectr. Temp. 63°F

Dome Temp./Hum. 15°C/100%

| Comparison<br>type/Filter<br>Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.  | Inst. | Grating/<br>Tilt | Slit  | Emulsion           | P.H. | Program    | Remarks         | Quality |
|----------------------------------|-----------|--------|--------------|------|-------|------------------|-------|--------------------|------|------------|-----------------|---------|
| 13                               | 00/101    | 4-5    | 4.98         | B38e | G12   | G12<br>.49B      | 13/.9 | IIa 0 E            | A    | Sp Bin Bin |                 | vsl str |
| 13                               | 00/140    |        | 7.39         | A0   | Q-12  | Q-12<br>.49B     | 13/.5 | IIa 0-E            | B    | Ap-MR      |                 | fine    |
|                                  |           |        |              |      |       |                  |       | IIa 0-E            |      |            |                 |         |
|                                  |           |        |              |      |       |                  |       | IIa 0-E            |      |            |                 |         |
| 3-13-1                           | 00/112    |        | 7.85         | A0   | G12   | G12<br>.49B      | 13/.5 | IIa 0 E            | A    | Am MR      | BROKEN 2 PIECES | sl wh   |
|                                  |           |        |              |      |       |                  |       | 8m 019 68°F 20 182 |      |            |                 |         |











Spectr. Temp. ... 71°F

Dome Temp./Hum. ... 72°F / 90%

Transparency Conditions ... Hazy. <sup>108</sup> thin clouds

Focus ... 10-B. -+50R

Spectr. Temp. ... 67°F

Dome Temp./Hum. ... 67°F / 100%

| Comparison<br>Type/Filter | Exp. | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.       | Inst. | Grating/<br>Tilt | Slit           | Emulsion | P.H. | Program    | Remarks                     | Quality |
|---------------------------|------|-----------|--------|--------------|-----------|-------|------------------|----------------|----------|------|------------|-----------------------------|---------|
| UV<br>110                 | 13-2 | 200/90    | 3-5"   | 4.98         | B3Ve      | G 12  | G12/1.49B        | 9/1.9<br>13/19 | IIa0-e   | A    | SB Blu     | maybe fogged + 9 width also | fine    |
| UV<br>110                 | 7-7  | 00/98     | 3"     | 6.8<br>7.7   | F0-<br>G1 | G16B  | G16B/.38B        | 13/5           | IIa0-E   | B    | Cephid/Eax | uv filter in - Focus 50R    | fine    |
| UV<br>110                 | 7-7  | 00/94     | 2"     | 5.82         | F27a      | G16B  | G16B/.38B        | 13/5           | IIa0-E   | A    | " "        | uv filter in<br>cloud       | fine    |
|                           |      |           |        |              |           |       |                  | 7 1/2 D 19     | 69°F     |      |            |                             |         |

109

1977

Emulsion Batches:

...II a.O. 10027-30087 \*

Date .. Sep 3-4 Sat-Sun Observers .. B.K. - T<sub>0</sub> .....

| 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.                        |
|-----------|---------------------|--------------|---------------------|-------------------------|-------------------------------|---------------------|-------------|---------------------------|-----------------------------|
| 41886     | HD 165590           | 18 01.6      | +21 26              | 19 46                   | 23 51                         | 4 21 W              | +21 35      | Fe Arc<br>ND 110          | 15-15-1                     |
| 41886T    | Spot caln for 41886 |              |                     |                         | 15 min @ 15V                  | D9<br>3900          | D3<br>4300  | D2<br>4810                |                             |
| 41887     | HD 211073           | 22 09.6      | +39 13              | 0 02                    | 1 10                          | 1 34 W              | +39 43      | Fe Arc<br>ND 110          | 15-15-1                     |
| 41888     | HD 215373           | 22 39.6      | +41 18              | 1 16                    | 2 08                          | 2 00 W              | +41 48      | Fe Arc<br>ND 110          | 15-15-1                     |
| 41889     | HD 6288             | 0 58.7       | +0 50               | 2 16                    | 3 14                          | 1 24 W <sup>x</sup> | +1 24       | Fe<br>ND 110              | 15-15-15                    |
| 41890     | HD 15524            | 2 24.8       | +24 48              | 3 20                    | 4 10                          | 0 15 W              | +25 17      | Fe<br>ND 110              | 15-15-1                     |
| 41891     | HD 9774             | 1 30.5       | +72 32              | 4 18                    | 5 02                          | 2 01 W              | +73 02      | Fe<br>ND 110              | 17-15-15                    |
|           |                     |              |                     |                         | Developed to look for oil fog |                     |             |                           |                             |
| T.1.      | Fog Tests           | Box #        | 1                   | no fog                  |                               |                     |             |                           | .29                         |
| T2        | "                   | "            | 3                   | no fog                  |                               |                     |             |                           | .22                         |
| T3        | "                   | "            | 4                   | no fog                  |                               |                     |             |                           | .16                         |
| T4        | "                   | "            | 7                   | sl fog maybe normal     |                               |                     |             |                           | .37                         |
|           |                     |              |                     |                         |                               |                     |             |                           | fog sl.<br>high<br>about .0 |



Spectr. Temp.  $67^{\circ}\text{F}$  ..... Dome Temp./Hum.  $63^{\circ}\text{F} / 75.70$

Focus  $T_0 \dots 0 \dots$  From  $+50R$

Spectr. Temp.  $58^{\circ}\text{F}$  ..... Dome Temp./Hum.  $55^{\circ}\text{F} / 94.7$

Transparency Conditions  $\text{thin} \dots \text{CIRRUS} \dots \text{Occasional}$

\* Plates found unevacuated, Chamber fuse had blown during last 2 days probably on Friday with Hydro work

| Comparison<br>Type/Filter<br>Exp | Exp. Mtr.  | Seeing | Ptg.<br>Mag. | Sp.      | Inst. | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program  | Remarks                            | Quality |
|----------------------------------|--|--------|--------------|----------|-------|------------------|------|----------|------|----------|------------------------------------|---------|
| 10/110<br>15-15                  | 300/314+   | 3'-2"  | 7.7          | G11V G12 | G12   | G12/049B         | 18/5 | IIaO     | B    | Waterloo | cloudy<br>* Very large?<br>Flexure |         |
| 10/110<br>15-15                  | 300/140  | 3"     | 5.5          | K3 III   | G12   | G12/149B         | 13/5 | IIaO     | A    | "        | chip off edge                      |         |
| 10/110<br>15-15                  | 300/120  | 2'-3'  | 6.1          | K0 III   | G12   | G12/149B         | 13/5 | "        | B    | "        |                                    | Fine    |
| 10/110<br>15-15                  | 400/200  | 3"     | 6.4          | A8 III   | G12   | G12/149B         | 13/5 | "        | A    | "        |                                    | Fine    |
| 10/110<br>15-15                  | 400/200  | "      | 6.3          | F3 IV    | G12   | "                | 13/5 | "        | B    | "        |                                    | Fine    |
| 10/110<br>15-15                  | 400/250  | 2'-3'  | 6.3          | G8 II    | G12   | "                | 13/5 | "        | A    | "        |                                    | vsl str |
| 29                               | <p>9 min D19 @ <math>70^{\circ}\text{F}</math> = Pushed <sup>29</sup> <sup>210</sup> KK - Perhaps All should be pushed? - because of no vac</p> <p>This box evacuated in contaminated chamber ) IIaO (10027-03097)</p> |        |              |          |       |                  |      |          |      |          |                                    |         |
| 22                               | <p>They are over exp according to old status quo.</p>  |        |              |          |       |                  |      |          |      |          |                                    |         |
| 16                               | <p>5 min D19 @ <math>70^{\circ}\text{F}</math></p>   |        |              |          |       |                  |      |          |      |          |                                    |         |
| 37                               | <p>127</p> <p>IIa S</p> <p>098</p>   |        |              |          |       |                  |      |          |      |          |                                    |         |













115

Emulsion Batches:

H. a. l. - e. 10027 - 07097

O. 98 - 02 e. 10047 - 07097

Date Sept. 8/9 (Thu/Fri) Observers BB - Tm

| 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. Nr.     |
|---------------------------|------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|---------------|---------------------------|--------------|
| 41895                     | HD191610 (28 Cyg)      | 20 05.7      | +36°33'             | 19:13                   | 19:27                 | 1 46 E            | +36°52.9      | Fe arc<br>ND 1.10         | 13-13-200/93 |
| 41895T                    | Spot Calc for 41895    |              |                     | 15 min @                | 15V                   | D4<br>3900        | D3<br>4300    | D2<br>4810                |              |
| 41896                     | HD191240 (sw Cyg)      | 20 3.8       | +46°01'             | 19:37                   | 21:44                 | 0 33 W            | +46°20.9      | Fe arc<br>ND 1.10         | 8-8-800/60   |
| 41897                     | " "                    | "            | "                   | 21:46                   | 23:52                 | 2 45 W            | "             | "                         | 8-8-800/60   |
| 41897T                    | Spot Calc for 41896-98 |              |                     | 15 min @                | 15V D3<br>4810        | 7V D1<br>Hx       | 7V D2<br>5450 |                           |              |
| 41898                     | HD191240               | 20 3.8       | +46 01              | 23 53                   | 1:25*                 | 4 15 W            | +46 22.5      | Fe Arc<br>ND 1.10         | 8-8-800/43   |
|                           |                        |              |                     |                         | <u>1:10</u>           |                   |               |                           |              |
| * Almost no counts > 1:10 |                        |              |                     |                         |                       |                   |               |                           |              |



7-07097  
7-07097

Spectr. Temp.  $63^{\circ}\text{F}$  ..... Dome Temp./Hum.  $63^{\circ}\text{F}/84\%$  Transparency Conditions *Good - sl haze* ..... 116  
 Focus  $10-R$  .....  
 Spectr. Temp.  $60^{\circ}\text{F}$  ..... Dome Temp./Hum.  $56^{\circ}\text{F}/100+?$  .....  
*thin cloud by 20:30*

| Comparison Type/Filter Exp          | Exp. Mtr. | Seeing | Pig. Mag. | Sp.    | Inst. | Grating/Tilt | Slit   | Emulsion | P.H. | Program        | Remarks      | Quality                                  |
|-------------------------------------|-----------|--------|-----------|--------|-------|--------------|--------|----------|------|----------------|--------------|--|
| te arc<br>ND 1/10 3-3<br>D2<br>1810 | 200/93    | 2"     | 4.98      | B3Te   | G12   | G12/1.490B   | 13/9   | IIc0-e   | A    | SB Bln         | broken 2pees | 1 piece discolored (disinfect or fixer?) |
| Rar<br>N 1/10                       | 85800/60  | 2"     | 9.5v      | A24KO1 | G65   | G43/1.490B   | 20/4   | 098-02e  | B    | BB eclips bin. | some cloud   | sl wh                                    |
| "                                   | 85800/60  | 2-4"   | "         | "      | "     | "            | "      | "        | A    | "              | more cloud   | sl wh                                    |
| Fe Arc<br>NO 1/10                   | 85800/43  | 2-3    | 9.5v      | A24KO  | G65   | G43/1.49B    | 20/4   | 09802E   | B    | BB Ecl Bin     | foggy & wet  | wh                                       |
|                                     |           |        |           |        |       | 098          | 4" D19 | 68°F     |      |                |              |  |
|                                     |           |        |           |        |       | II20         | 8" "   | "        |      |                |              |  |

117

Fri-Sat

Date 1977 Sep 9/10 Observers KK-7m

Emulsion Batches:

HSE  
098-02 10047-07097

| 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.             |
|-----------|--------------------|--------------|---------------------|-------------------------|-----------------------|-----------------------|----------------|---------------------------|------------------|
| 41899     | HD 192909          | 20 12.4      | +47 24              | 1:10                    | 02 18                 | 5 02 W                | +47 39         | Fe<br>no filter           | 10-10-80         |
| 41899T    | Spot calibration   |              | 1) H $\alpha$       | D1 7v 40 <sup>m</sup>   | 2) H $\alpha$         | D2 7v 10 <sup>m</sup> | 3) H $\alpha$  | D3 7v                     | 2.5 <sup>m</sup> |
| 41900     | HD 1326            | 0 12.7       | +43 27              | 2 34                    | 3 37                  | 2 19 W                | +43 52         | Fe<br>ND 110              | 10-10-80         |
| 41900T    | Spot cal for 41900 |              |                     | 15 min @                | 15V D3<br>4810        | 7V D1<br>H $\alpha$   | 7V D2<br>54 50 |                           |                  |
| 41901     | HD 1326            | 0 12.7       | +43 27              | 3 39                    | 4 48                  | 3 31 W                | +43 53         | Fe<br>ND 110              | 10-10-80         |

Spectr. T.  
Focus  
Spectr.  
Exp. Mtr.

200/350

800/30

800/34





U9

Sun - Mon

Emulsion Batches:

Date 1977. Sept 11-12 ... Observers Egi. - T.n. ....

... IIe. O. E. 100.27... 07097  
 ... O. 98-02 E. 200.47... 07097

| 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.    |
| 41902     | HD-191610           | 20 05.7              | +36 33              | 19 11                   | 19 28                 | 1 35 E            | +36 55      | Fe Arc<br>ND 110         | 13-13-E |
| 41902T    | Spot Calc for 41902 |                      |                     | 15 min                  | @ 15V                 | D4<br>3900        | D3<br>4300  | D2<br>4810               |         |
| 41903     | HD 190918           | 20 <sup>h</sup> 02.2 | +35° 31             | 19 37                   | 21 38                 | 0 39 W            | +35° 51     | Fe Arc<br>ND 110         | 13-13-E |
| 41904     | HD 219113           | 23 <sup>h</sup> 08.3 | +02° 08             | 21 51                   | 00 28                 | 0 22 W            | +2 42       | Fe Arc<br>ND 110 +<br>UV | 6-66    |
| 41905     | HD 219113           | 23 <sup>h</sup> 08.3 | +02° 08             | 00 35                   | 02 22                 | 2 19 W            | +2 41       | Fe Arc<br>UV             | 4-4-L   |
| 41905T    | Spot Calc for 41905 |                      |                     | 15 min                  | @                     | 15V D3<br>4810    | 7V D1<br>Hd | 7V D2<br>5450            |         |

Spectr.

Focus.

Spectr.

Exp. Mtr.

200/96

400/25

400/25

400/8





121

Wed/Thurs

Date 1977 Sept. 14/15... Observers Fgi-Ri.....

Emulsion Batches:

Duo-E 10027 07097  
098-02E 20047 07097

| 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.     |
|-----------|------------------------------------|----------------------|---------------------|-------------------------|-----------------------|----------------------|-------------|---------------------------|----------|
| 41906     | HD 191610                          | 20 <sup>h</sup> 05.7 | +36° 33             | 19:10                   | 19:30                 | 01 21 E              | +36° 52.7   | Fe Arc<br>ND 110          | 13-13-13 |
| 41907     | HD 209813                          | 22 <sup>h</sup> 01   | +46° 44.9           | 19:40                   | 21:30                 | 01 18 E              | +47° 13.6   | Fe Arc<br>no filter       | 4-4-4    |
| 41907T    | opt cal for plate 41906 + 41912    |                      |                     |                         | 15min @ 15V           | D4<br>3500           | D3<br>4300  | D2<br>4810                |          |
| 41907T2   | cal step wedge for plate 41906, 12 |                      |                     |                         |                       | 90nm                 |             |                           |          |
| 41907T3   | opt cal for plates 41907-41911     |                      |                     |                         | 15min                 | D3 15V<br>4810       | D1 70<br>Hx | D2 70<br>5450             |          |
| 41908     | HD 209813                          | 22 <sup>h</sup> 01   | +46° 44.9           | 21:31                   | 22:44                 | 00 00 E              | +47° 13.6   | Fe Arc<br>no filter       | 4-4-4    |
| 41909     | HD 209813                          | 22 <sup>h</sup> 01   | +46° 44.9           | 22:45                   | 00:14                 | 01 30 W              | +47° 13.6   | "                         | 4-4-4    |
| 41910     | HD 219113                          | 23 <sup>h</sup> 08.3 | +02° 08             | 00:22                   | 03:22                 | 03 29 W              | +02° 40     | "                         | 4-4-4    |
| 41911     | HD 22468                           | 3 <sup>h</sup> 31.6  | +0° 16              | 03:27                   | 04:10                 | 00 <sup>h</sup> 06 E | +00° 37     | "                         | 4-4-4    |
| 41912     | HD 222107                          | 23 <sup>h</sup> 32.7 | +45° 55             | 04:18                   | 05:04                 | 04 <sup>h</sup> 47 W | +46° 27     | Fe Arc<br>ND 110          | 13-1-    |



Spectr. Temp. .... 62°F .....

Dome Temp./Hum. 60°F/80%

Transparency Conditions ... some cirrus clouds 122

Focus ..... 10 R .....

after 00:00

Spectr. Temp. .... 56°F .....

Dome Temp./Hum. 120°C/100%

| Companson<br>Type/Filter<br>Exp | Exp. Mir. | Seeing | Ptg.<br>Mag. | Sp.          | Inst. | Grating/<br>Tilt | Slit | Emulsion | P.H.     | Program     | Remarks                              | Quality          |
|---------------------------------|-----------|--------|--------------|--------------|-------|------------------|------|----------|----------|-------------|--------------------------------------|------------------|
| e Arc<br>D 110<br>13-75         | 00/97     | 3-4"   | 4.98         | B35e         | G12   | G12/.49B         | 13/9 | IIa0-e   | A        | S/Bm/Blu    |                                      | v sl str         |
| e Arc<br>2/112<br>4-4           | 00/250    |        | 7.52         | K0           | G16   | G16/.7B          | 13/5 | 098-02e  | B        | RS CVn      | HK Lac                               | v sl wk          |
| B2<br>480                       |           |        |              |              |       |                  |      | IIa0E    |          |             |                                      |                  |
| B2<br>480                       |           |        |              |              |       |                  |      | IIa0E    |          |             |                                      |                  |
| B2<br>480                       |           |        |              |              |       |                  |      | 098-02   |          |             | large flake on<br>central spot       |                  |
| Arc<br>6/112<br>4-4             | 00/251    |        | 7.52         | K0           | G16   | G16/.7B          | 18/5 | 098-02   | A        | RS CVn      | HK Lac                               | fine             |
| Arc<br>6/112<br>4-4             | 00/250    |        | 7.52         | K0           | G16   | G16/.7B          | 18/5 | 098-02   | B        | RS CVn      | HK Lac <sup>some</sup> cirrus clouds | fine             |
| 11<br>4-4                       | 300/250   |        | 9.0          | G15          | G16   | G16/.7B          | 20/5 | 098-02   | A        | RS CVn      | SZ Psc                               | unseen,<br>sl wk |
| 11<br>4-4                       | 300/250   |        | 6.7          | G0           | G16   | G16/.7B          | 18/5 | 098-02   | B        | RS CVn      | HR 1099                              | fine             |
| Arc<br>112<br>B-                | 200/80    |        | V=3.75       | G8<br>III-IV | G12   | G12/.49B         | 9/5  | IIa0-e   | A        | Brt. Str/Ly | 1 And                                | fine             |
|                                 |           |        |              |              |       |                  |      | 098 4"   |          |             |                                      | 27166            |
|                                 |           |        |              |              |       |                  |      | IIa0 8"  | D11 68°F |             |                                      | 24,185           |





Spectr. Temp. ... 56°F .....

Dome Temp./Hum 53°F / 99%

Transparency Conditions ... Semi-clear ... by ... 0.4 124

Focus ... 35 A .....

Spectr. Temp. ....

Dome Temp./Hum. .... 100%

| Comparison<br>pe/Filter Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.   | Inst.  | Grating/<br>Tilt | Slit | Emulsion   | P.H. | Program    | Remarks                 | Quality  |
|-----------------------------|-----------|--------|--------------|-------|--------|------------------|------|--|------|------------|-------------------------|----------|
| 0.10 B-14                   | 200/100   | 2"     | V=<br>3.75   | G8 UV | G12    | G12/49B          | 9/15 | IIa0-e   | A    | H&K Bin-Ly | λ AND                   | v/si str |
|                             |           |        |              |       |        |                  |      | (cleaned junk off center spot)<br>IIa0-e                     |      |            |                         |          |
|                             |           |        |              |       |        |                  |      | IIa0-e   |      |            |                         |          |
| 0.10 B-13                   | 200/66    | 2-3"   | V=<br>4.00   | K10p  | G12    | G12/49B          | 9/15 | IIa0-e   | B    | H&K Bin-Ly | λ AND. Cloud            | fine     |
|                             |           |        |              |       |        |                  |      | *IIa0e   |      |            | Broken 2 pieces saved   |          |
|                             |           |        |              |       | 7" D19 | 68°F             |      | Plates may have been slightly fogged by<br>window light leak |      |            | 22,180<br>41914T 21,163 |          |

125

Emulsion Batches:

12705 .. III. a. F. ... 00095-16097

Date <sup>Wed/Thurs.</sup> Sept. 28/29, 1977 Observers Ed. Tm .....

| 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.   |
|-----------|------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|--------|
| 41915     | HD 2120978 <sup>32 Peg</sup> | 22 16.7      | +27 50              | 18:51                   | 22:13                 | 00 06 W           | +28 17      | Fe Arc<br>UV              | 8-8-8  |
| 41915T    | Spot Colln for               | 41915-22     |                     | 15 min                  | @ 7.5V                | D4<br>5100        | D2<br>Hα    | D3<br>5450                |        |
| 41916     | HD 19356                     | 3 1.7        | +40 34              | 22:30                   | 22:52                 | 04 03 E           | +40 53      | Fe arc<br>UV              | 9-9-9  |
| 41917     | HD 19356                     | "            | "                   | 23:05                   | 23:38                 | 03 15 E           | "           | Fe arc<br>UV              | 10-9-9 |
| 41918     | HD 19356                     | "            | "                   | 23:53                   | 00:24                 | 02 30 E           | "           | Fe arc<br>UV              | 9-9-9  |
| 41919     | HD 19356                     | "            | "                   | 00:33                   | 01:04                 | 01 50 E           | "           | Fe arc<br>UV              | 9-9-9  |
| 41920     | HD 19356                     | "            | "                   | 01:11                   | 01:40                 | 01 13 E           | "           | Fe arc<br>UV              | 9-9-9  |
| 41921     | HD 19356                     | "            | "                   | 01:53                   | 02:17                 | 00 35 E           | "           | Fe arc<br>UV              | 9-9-9  |
| 41922     | HD 19356                     | "            | "                   | 02:29                   | 02:50                 | 00 04 E           | "           | Fe arc<br>UV              | 9-9-9  |
| 41922T    | Spot Colln for               | 41915-22     |                     | 15 min                  | @ 9.0V                | D4<br>5100        | D2<br>Hα    | D3<br>5450                |        |



16097

Spectr. Temp. 56°F.....

Dome Temp./Hum. 55°F./75%

Transparency Conditions... V. e.g. good... <sup>126</sup> but seeing

Focus..... 40-R.....

Spectr. Temp. 49°F.....

Dome Temp./Hum. 49°F./100%<sup>76</sup>

Comparison  
Type/Filter Exp.

etc

UV 8-8

3

450

care

UV 9-9

care

UV 10-9

care

UV 9-9

care

UV 9-9

care

UV 9-9

care

UV 9-9

care

UV 9-9

care

UV 9-9

care

UV 9-9

care

UV 9-9

care

UV 9-9

care

UV 9-9

care

UV 9-9

care

UV 9-9

care

UV 9-9

care

UV 9-9

| Exp. Mtr.   | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion            | P.H. | Program      | Remarks       | Quality                  |
|---|--------|-----------|-----|-------|--------------|------|---------------------|------|--------------|---------------|--------------------------|
| 200/576   | 3"-6"  | 4.83      | B8I | G16R  | G16/0.7B     | 13/5 | IIIa F-e<br>127-05E | A    | Zd-Algol Std | UV Filter in  | fine                     |
| 40/126  | 3"-4"  | 2.2v      | B8V | G16R  | G16/0.7B     | 9/7  | IIIa F-e            | B    | Zd-Algol     | "             | fine                     |
| 40/176  | 3"     | "         | "   | "     | "            | 9/9  | "                   | A    | Zd-Algol     | "             | fine                     |
| 40/173  | 2"-3"  | "         | "   | "     | "            | 9/9  | "                   | B    | Zd-Algol     | "             | exp fine<br>finger print |
| 40/171  | "      | "         | "   | "     | "            | 9/9  | "                   | A    | Zd-Algol     | "             | fine                     |
| 40/165  | "      | "         | "   | "     | "            | 9/9  | "                   | B    | Zd-Algol     | "             | fine                     |
| 40/170  | "      | "         | "   | "     | "            | 9/9  | "                   | A    | Zd-Algol     | "             | fine                     |
| 40/173  | "      | "         | "   | "     | "            | 9/9  | "                   | B    | Zd-Algol     | "             | fine                     |
| big chunk broken out - stored in emptied unexp box. |        |           |     |       |              |      |                     |      |              | Too humid     | str                      |
| 5" D19 68°F { 25 290                                |        |           |     |       |              |      |                     |      |              | G Drive Fanny |                          |





Spectr. Temp. ....

Dome Temp./Hum. ~~52~~ 176.8

Transparency Conditions ..very good..... 129

Focus ..... 40-R

Spectr. Temp. ... 52°F

Dome Temp./Hum. 50°F / 85.9%

very gusty  
cloud by 01<sup>h</sup>

| Comparison<br>Type/Filter Exp.   | Exp. Mtr.       | Seeing | Ptg.<br>Mag. | Sp. | Inst.              | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program | Remarks     | Quality |
|----------------------------------|-----------------|--------|--------------|-----|--------------------|------------------|------|----------|------|---------|-------------|---------|
| E 4 RC<br>D. 1.1<br>D2<br>00 420 | 13-13<br>00/284 | 3"-5"  | 7.58         | A2  | G12                | G12/490          | 13/5 | I 200 E  | A    | Am MR   |             | fine    |
|                                  |                 |        |              |     |                    |                  |      | I 40-E   |      |         |             |         |
|                                  |                 |        |              |     |                    |                  |      | "        |      |         |             |         |
| E 4 RC<br>D. 1.1<br>13-14        | 00/105          | 2-8    | 3.75         | G8  | "                  | "                | 9/5  | "        | B    | ly Prog |             | sl str  |
| "<br>13-13                       | 00/88           | 5-8"   | 7.17         | B9  | "                  | "                | 13/5 | "        | C    | Ap MR   | cloud 01:10 | vs lwr  |
|                                  |                 |        |              |     | 7 <sup>m</sup> D17 | 68°F             | 22,  | 176      |      |         |             |         |







131

Date Oct 5-6 Wed/Thurs Observers BB - Ri - UK

Emulsion Batches:

Iad - E. 20047-04107.

098-02-E. 20097-09097

| 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         |        | Exp. Mtr. |
|-----------|----------------------------|----------------------|---------------------|-------------------------|-----------------------|-------------------|--|--------------------|--------|-----------|
|           |                            |                      |                     |                         |                       |                   |  | Type/Filter        | Exp    |           |
| 41930     | $\lambda$ And<br>HD 222107 | 23 <sup>h</sup> 32.7 | +45° 55'            | 21:25                   | 22 02                 | 0 53 E            | 46° 25.5   | Fe ARC<br>N.D. 110 | 13-131 | 200/101   |
| 41931     | HD 4502 (S And)            | 00 <sup>h</sup> 42.0 | +23° 43'            | 22 15                   | 23 16                 | 0 48 E            | 24° 14.1   | Fe ARC<br>N.D. 110 | 13-131 | 200/101   |
| 41932     | HD 5679 (U Cep)            | 00 59.9              | +81° 45.1           | 23 35                   | 00 03                 | 0 17 E            | +81° 49  | "                  | 10-101 | 200/80    |
| 41933     | HD 25487 (RW Tau)          | 3 <sup>h</sup> 57.8  | +27° 51.2           | 0 14                    | 0 50                  | 2 30 E            | 28° 10.1   | "                  | 8-8-8  | 200/80    |
| 41933T1   | spot caln for plates       | 41930-31             |                     |                         |                       | 15mm @ 15 volts   | <sup>D4</sup> 390 <sup>D3</sup> 430 <sup>D2</sup> 4810 |                    |        |           |
| 41933T2   | strip caln for plates      | " "                  |                     |                         |                       | 90 sec            |  |                    |        |           |
| 41934     | HD 49521 (RX Gem)          | 06 <sup>h</sup> 48.7 | +33° 16'            | 1:23                    | 3 42                  | 2 23 E            | 33 22.1  |                    | 8-8-8  | 200/60    |
| 41934T1   | spot caln for plates       | 41932-               |                     |                         |                       | 15mm              | <sup>D3</sup> 4810 <sup>D1</sup> HL <sup>D2</sup> 5450 |                    |        |           |
| 41935     | HD 49521 (RX Gem)          | 06 <sup>h</sup> 48.7 | +33° 16'            | 3:46                    | 5:36                  | 0 29 E            | 33° 21.4   | Fe ARC<br>N.D. 110 | 8-8-8  | 200/55    |



Spectr. Temp. ... 54°F

Dome Temp./Hum. ... 12°C ... 95%

Transparency Conditions ... a few clouds at first  
then good ... 132

Focus ... 40R

Spectr. Temp. ... 50°F

Dome Temp./Hum. ... 6°C ... 96%

| Comparison Type/Filter              | Exp. Mtr. | Seeing | Ptg. Mag.    | Sp.              | Inst. | Grating/Tilt  | Slit | Emulsion                                  | P.H. | Program                  | Remarks       | Quality |
|-------------------------------------|-----------|--------|--------------|------------------|-------|---------------|------|---|------|--------------------------|---------------|---------|
| Fe ABC<br>A.D. 100<br>3-15-7        | 200/101   | 2-3    | 3.75         | 98 III-<br>IV    | G-12  | G-12/<br>.490 | 9/5  | II <sub>20</sub> -E                       | A    | H <sub>2</sub> + Bi - Ly | clouds        | fine    |
| Fe ABC<br>A.D. 100<br>13-15-7       | 200/101   | "      | 4.06         | K III p          | G-12  | G-12/<br>.490 | 9/5  | II <sub>20</sub> -E                       | B    | "                        | "             | fine    |
| "<br>10-11-80                       | 300/80    |        | 7.0-9.8      | B8+<br>G8 III-IV | G-65  | G43/.490      | 13/5 | 098-02E                                   | A    | BB eclip. bin.           |               | v sl wh |
| "<br>8-9-80                         | 300/80    |        | 8.0-<br>12.5 | A0+G             | "     | "             | 20/4 | "   | B    | "                        |               | v sl wh |
| "                                   |           |        |              |                  |       |               |      | II <sub>20</sub> -E                       |      |                          |               |         |
| "                                   |           |        |              |                  |       |               |      | II <sub>20</sub> -E                       |      |                          |               |         |
| 8-8-80                              | 300/60    |        | 8.5<br>10.6  | A4               | G-165 | G43/.490      | 20/4 | 098-02E                                   | A    | BB eclip. bin.           | } EC > +7 min | sl wh   |
| 7U D2<br>5450<br>Fe ABC<br>A.D. 100 |           |        |              |                  |       |               |      | 098-02E                                   |      |                          |               |         |
| 8-9-80                              | 300/55    |        | 8.5<br>10.6  | A4               | G-65  | G43/.490      | 20/4 | 098-02E                                   | B    | "                        |               | sl wh   |
|                                     |           |        |              |                  |       |               |      | II <sub>20</sub> 7 <sup>m</sup> 319 180°F | 22   | 179                      |               |         |
|                                     |           |        |              |                  |       |               |      | 098 4 <sup>m</sup> " "                    | 31   | 185                      |               |         |

133

Thurs/Fri

Date 6/7 Oct 1977 Observers Fgi-Ri-Cy.....

Emulsion Batches:

HAD 20047-04107  
098-02-E 20047-29097

| 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          |
|-----------|--------------------------------|----------------------|---------------------|-------------------------|-----------------------|---------------------|-------------|---------------------------|--------------|
| 41936     | HD 191610                      | 20 <sup>h</sup> 05.7 | +36° 33'            | 18:40                   | 19:03                 | 00 <sup>h</sup> 20E | +36° 54'    | Fe Arc<br>ND=11           | 13-13<br>-   |
| 41937     | HD 222107                      | 23 <sup>h</sup> 32.7 | +45° 55'            | 19:12                   | 19:51                 | 03 <sup>h</sup> 00E | +46° 27'    | Fe Arc<br>ND=11           | 13-13<br>-13 |
| 41938     | HD 212097                      | 22 <sup>h</sup> 16.7 | +27° 50'            | 20:07                   | 20:42                 | 00 <sup>h</sup> 52E | +28° 20'    | Fe Arc<br>UV Filter       | 4-4-4        |
| 41939     | HD 31910                       | 4 54.5               | +60 18              | 21:06                   | 21:34                 | 06 <sup>h</sup> 41E | +60° 33'    | Fe Arc<br>no filter       | 6-6          |
| 41940     | HD 21242                       | 03 <sup>h</sup> 20.5 | +28° 22'            | 21:39                   | 00:14                 | 02 <sup>h</sup> 25E | +28 46.5    | Fe Arc<br>no filter       | 4-4-4        |
| 4194091   | spot calc for plates 41936-37  |                      |                     |                         | 15mm @ 15msec         |                     |             | D4<br>3900                | D2<br>4810   |
| 4194072   | strip calc for plates 41936-37 |                      |                     |                         | 90sec                 |                     |             |                           |              |
| 4194073   | spot calc for plates 41938-    |                      |                     |                         | 15mm                  | 15003<br>4810       | 7001<br>Hd  | 7002<br>5450              |              |
| 41941     | HD 22468                       | 03 <sup>h</sup> 31.6 | +00° 16'            | 00:18                   | 02:40                 | 00 <sup>h</sup> 09E | +00° 37.5'  | Fe Arc<br>no filter       | 4-4-4        |



04107  
17-29097

Spectr. Temp.  $52^{\circ}\text{F}$  ..... Dome Temp./Hum.  $10^{\circ}\text{C}/18.7\%$   
 Focus  $40\text{R}$  .....  
 Spectr. Temp.  $76^{\circ}\text{F}$  ..... Dome Temp./Hum.  $12^{\circ}\text{C}/100\%$

Transparency Conditions  $\text{PATCHY CLOUDS}$  <sup>134</sup>

| Companson Type/Filter Exp | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.          | Inst. | Grating/Tilt | Slit  | Emulsion | P.H.     | Program    | Remarks             | Quality     |
|---------------------------|-----------|--------|-----------|--------------|-------|--------------|-------|----------|----------|------------|---------------------|-------------|
| Fe Arc ND=1.1 13-13       | 200/100   | 2-3    | 4.98      | B3<br>Ic     | G12   | G12/.49B     | 13/19 | IIa0-e   | B        | Sp Bin/Blu | 2BCyg               | sl str      |
| Fe Arc ND=1.1 13-13       | 200/100   |        | V=3.75    | G8<br>III-IV | G12   | G12/.49B     | 9/5   | IIa0-e   | A        | Brt Str/Ly | $\lambda$ And       | fine        |
| UV Filter 4-4             | 400/160   |        | 4.83      | B8V          | G16R  | G16R/.700    | 9/5   | 098-02E  | B        | Alg. Std   | UV Filter 1W 32 Peg | v sl wk     |
| Fe Arc ND=1.1 6-10        | 400/126   |        | 4.2       | G0A(B)       | G16R  | G16R/.700    | 9/5   | 098-02E  | A        | Cepheid/Pg | B Cam               | fine        |
| Fe Arc ND=1.1 4-4         | 400/199   |        | 7.29      | G5           | G16R  | G16R/.700    | 13/5  | 098-02E  | B        | RS CVn     | UX Ari              | sl wk       |
|                           |           |        |           |              |       |              |       | IIa0-E   |          |            |                     |             |
|                           |           |        |           |              |       |              |       | IIa0-E   |          |            |                     |             |
|                           |           |        |           |              |       |              |       | 098-02E  |          |            |                     |             |
| Fe Arc ND=1.1 4-4         | 400/188   |        | 6.68      | G0V          | G16R  | G16R/.700    | 13/5  | 0980-02E | A        | RS CVn     | HR1099 CLOUDS       | fine at Max |
|                           |           |        |           |              |       |              |       | IIa0 6"  |          |            |                     |             |
|                           |           |        |           |              |       |              |       | 098 4"   | D19 65°F | 18 170     |                     |             |
|                           |           |        |           |              |       |              |       |          |          | 32 157     |                     |             |





Spectr. Temp. 480F

Dome Temp./Hum. 50C 89%

Transparency Conditions very low 136

Focus 50R

Spectr. Temp. 440F

Dome Temp./Hum.

| Comparison Type/Filter Exp | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program    | Remarks           | Quality                         |
|----------------------------|-----------|--------|-----------|------|-------|--------------|------|----------|------|------------|-------------------|---------------------------------|
| Te ARC U.D. 1-1 13-3       | 400/203   | 5      | 4.98      | B3De | G-12  | G12/1.490    | 13/9 | Ilau-E   | A    | Sp Bai-Bln |                   | + v sl str                      |
| Te ARC U.V.F. 4-8          | 4N/83     | "      | "         | "    | G-16R | G16/1.700    | 13/5 | 098-02E  | B    | " "        | overdevelop plate | ok, except at Hd                |
|                            |           |        |           |      |       |              |      | Ilau-E   |      |            |                   |                                 |
|                            |           |        |           |      |       |              |      | Ilau-E   |      |            |                   |                                 |
| 5/ 7020 5950               |           |        |           |      |       |              |      | 098-01E  |      |            |                   |                                 |
|                            |           |        |           |      |       |              |      |          |      |            |                   | * var background, edge of 8100? |
|                            |           |        |           |      |       | Ilau 6m      |      |          | 18   | 170        |                   |                                 |
|                            |           |        |           |      |       | 098 6m       |      | D19 68F  | 26   | 202        |                   |                                 |

137

Date 10/11 Oct 1977 Mon/Tue observers Fgi-Ri-Fer.....

Emulsion Batches:

IT-20 20077-07107..  
098-02 20047-06107..

| 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.         |
|-----------|------------------------------|----------------------|---------------------|-------------------------|-----------------------|-----------------------|----------------|---------------------------|--------------|
| 41944     | HD 224559                    | 23 <sup>h</sup> 53.7 | +45° 51             | 18 <sup>h</sup> 39      | 19 <sup>h</sup> 22    | 03 <sup>h</sup> 33' E | +46° 26        | Fe Arc<br>ND11+UV         | 7-7-7        |
| 41945     | HD 224559                    | 23 <sup>h</sup> 53.7 | +45° 51             | 19 <sup>h</sup> 25      | 20 <sup>h</sup> 15    | 02 <sup>h</sup> 41' E | +46° 26        | Fe Arc<br>ND11+UV         | 7-7-7        |
| 41946     | HD 224559                    | 23 <sup>h</sup> 53.7 | +45° 51             | 20 <sup>h</sup> 16      | 20 <sup>h</sup> 48    | 02 <sup>h</sup> 09' E | +46° 26        | Fe Arc<br>ND11+UV         | 7-7-7        |
| 41947     | HD 224559                    | 23 <sup>h</sup> 53.7 | +45° 51             | 20 <sup>h</sup> 49      | 21 <sup>h</sup> 21    | 01 <sup>h</sup> 35' E | +46° 26        | Fe Arc<br>ND11+UV         | 7-7-7        |
| 41947T1   | spot cal for plate 41944-49  |                      |                     |                         |                       | 15mm @ 15 volt        | D4<br>3900     | D3<br>4300                | D2<br>4810   |
| 41947T2   | strip cal for plate 41944-49 |                      |                     |                         |                       | 90 sec                |                |                           |              |
| 41948     | HD 224559                    | 23 <sup>h</sup> 53.7 | +45° 51             | 21 <sup>h</sup> 22      | 22 <sup>h</sup> 05    | 00 <sup>h</sup> 51' E | +46° 26        | Fe Arc<br>ND11+UV         | 7-7-7        |
| 41949     | HD 224559                    | 23 <sup>h</sup> 53.7 | +45° 51             | 22 <sup>h</sup> 06      | 22 <sup>h</sup> 56    | 00 <sup>h</sup> 00    | +46° 26        | Fe Arc<br>ND11+UV         | 7-7-7        |
| 41950     | HD 22468                     | 03 <sup>h</sup> 31.6 | +0° 16'             | 23 <sup>h</sup> 04      | 00 <sup>h</sup> 04    | 02 <sup>h</sup> 29' E | +00° 40        | Fe Arc<br>NO FILTER       | 4-4-4        |
| 41951     | HD 22468                     | 03 <sup>h</sup> 31.6 | +0° 16'             | 00 <sup>h</sup> 05      | 00 <sup>h</sup> 46    | 01 <sup>h</sup> 48' E | +00° 40        | Fe Arc<br>no filter       | 4-4-4        |
| 41951T1   | spot cal for plate 41950-53  |                      |                     |                         |                       | 15mm                  | 15V P3<br>4810 | 7001<br>Hd                | 7002<br>5450 |
| 41952     | HD 22468                     | 03 <sup>h</sup> 31.6 | +0° 16'             | 00 <sup>h</sup> 50      | 01 <sup>h</sup> 46    | 00 <sup>h</sup> 47' E | +00° 40        | Fe Arc<br>no filter       | 4-4-4        |
| 41953     | HD 22468                     | 03 <sup>h</sup> 31.6 | +0° 16'             | 01 <sup>h</sup> 47      | 02 <sup>h</sup> 12    | 00 <sup>h</sup> 22' E | +00° 40        | Fe Arc<br>no filter       | 4-7          |
| 41953F1   | focus test                   |                      |                     |                         |                       |                       |                | no filter                 | 5-5          |



Spectr. Temp.  $54^{\circ}\text{F}$ Dome Temp./Hum.  $11^{\circ}\text{C}/72\%$ Transparency Conditions *Patchy clouds* 138Focus  $40R$ Spectr. Temp.  $50^{\circ}\text{F}$ Dome Temp./Hum.  $8^{\circ}\text{C}/100\%$ 

| Companson<br>type/Filter | Exp. | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp. | Inst. | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program    | Remarks                       | Quality  |
|--------------------------|------|-----------|--------|--------------|-----|-------|------------------|------|----------|------|------------|-------------------------------|----------|
| e Arc<br>D11+V           | 7-7  | 400/100   | 2-3    | 6.5          | B3  | G16B  | G16B/0.38        | 13/5 | IIa0-e   | B    | Cepheid/Py | UV Filter in<br>Focus at 100R |          |
| e Arc<br>D11+V           | 7-7  | 400/100   | 2-3    | 6.5          | B3  | G16B  | G16B/0.38        | 13/5 | IIa0-e   | A    | Cepheid/Py | UV filter, 100R focus         | fine     |
| e Arc<br>D11+V           | 7-7  | 400/100   | 2-3    | 6.5          | B3  | G16B  | G16B/0.38        | 13/5 | IIa0-e   | B    | Cepheid/Py | UV filter, 100R focus         | fine     |
| e Arc<br>D11+V           | 7-7  | 400/100   |        | 6.5          | B3  | G16B  | G16B/0.38        | 13/5 | IIa0-e   | A    | Cepheid/Py | UV filter, 100R focus         | fine     |
|                          |      |           |        |              |     |       |                  |      | IIa0-E   |      |            |                               |          |
|                          |      |           |        |              |     |       |                  |      | IIa0-F   |      |            |                               |          |
| e Arc<br>D11+V           | 7-7  | 400/100   |        | 6.5          | B3  | G16B  | G16B/0.38        | 13/5 | IIa0-e   | B    | Cepheid/Py | UV filter, 100R focus         | fine     |
| e Arc<br>D11+V           | 7-7  | 400/100   |        | 6.5          | B3  | G16B  | G16B/0.38        | 13/5 | IIa0-e   | A    | Cepheid/Py | UV filter, 100R focus         | fine     |
| e Arc<br>D11+V           | 4-4  | 800/251   |        | 6.68         | G0V | G16R  | G16R/700         | 13/5 | 098-02   | B    | RSCVn      | HR 1099                       | v sl wtk |
| e Arc<br>D11+V           | 4-4  | 800/250   |        | 6.68         | G0V | G16R  | G16R/700         | 13/5 | 098-02   | A    | RSCVn      | HR 1099                       |          |
|                          |      |           |        |              |     |       |                  |      | 098-02   |      |            |                               |          |
| e Arc<br>D11+V           | 4-4  | 800/251   |        | 6.68         | G0V | G16R  | G16R/700         | 13/5 | 098-02   | B    | RSCVn      | HR 1099                       | v sl wtk |
| e Arc<br>D11+V           | 4-7  | 300/35    |        | 6.68         | G0V | G16R  | G16R/700         | 13/5 | 098-02   | A    | RSCVn      | HR 1099                       | v wtk    |
|                          |      |           |        |              |     |       |                  | 9    |          | B    |            | CLOUDS.                       |          |
|                          |      |           |        |              |     |       | II00             | 6"   |          |      |            |                               |          |
|                          |      |           |        |              |     |       | 098              | 4"   | 219      | 65°  |            |                               |          |
|                          |      |           |        |              |     |       |                  |      |          | 19   | 168        |                               |          |
|                          |      |           |        |              |     |       |                  |      |          | 26   | 182        |                               |          |

139

TUES/WED

Date 11/2 Oct 1977 Observers Fgi - Ri

Emulsion Batches:

IIA0 - 20077 - 09107

098 - 20047 - 06107

| 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.         |
|-----------|-------------------------------|----------------------|---------------------|-------------------------|-----------------------|--------------------------|--------------------------|---------------------------|--------------|
| 41954     | HD 191610                     | 20 <sup>h</sup> 05.7 | +36° 33             | 20:04                   | 20:29                 | 01:25W                   | +36° 54                  | Fe Arc<br>NO=1.1          | 13-13-<br>13 |
| 41955     | HD 222107                     | 23 <sup>h</sup> 32.7 | +45° 55             | 20:33                   | 21:04                 | 01:27E                   | +46 25                   | Fe Arc<br>NO=1.1          | 13-13-<br>13 |
| 41956     | HD 212097                     | 22 <sup>h</sup> 16.7 | +27° 50             | 21:11                   | 21:55                 | 00:39W                   | +28 19                   | Fe Arc<br>UV              | 4-4-4        |
| 41956T1   | spot cal for plates 41954-55  |                      |                     |                         |                       | 15min @ 15 volts         | D4<br>3900               | D3<br>4300                | D2<br>4810   |
| 41956T2   | strip cal for plates 41954-55 |                      |                     |                         |                       | 90 sec                   |                          |                           |              |
| 41957     | HD 22468                      | 03 <sup>h</sup> 31.6 | +0° 16              | 22:00                   | 23:26                 | 05:03E                   | +00° 40                  | Fe Arc<br>NO FILTER       | 4-4-4        |
| 41957T1   | spot cal for plates 41957-61  |                      |                     |                         |                       | 15min @ 15 volts<br>4810 | D3<br>7266<br>Hd<br>5450 | D2<br>7266<br>D2<br>5450  |              |
| 41958     | HD 22468                      | 03 <sup>h</sup> 31.6 | +0° 16              | 23:27                   | 00:19                 | 02 <sup>h</sup> 11E      | +00° 40                  | Fe Arc<br>NO FILTER       | 4-4-4        |
| 41959     | HD 22468                      | 03 <sup>h</sup> 31.6 | +0° 16              | 00:22                   | 01:07                 | 01 <sup>h</sup> 22E      | +00° 40                  | Fe Arc<br>NO FILTER       | 4-4-4        |
| 41960     | HD 22468                      | 03 <sup>h</sup> 31.6 | +0° 16              | 01:07                   | 01:54                 | 00 <sup>h</sup> 36E      | +00° 40                  | Fe Arc<br>NO filter       | 4-4-4        |
| 41961     | HD 22468                      | 03 <sup>h</sup> 31.6 | +0° 16              | 01:55                   | 02:47                 | 00 <sup>h</sup> 17W      | +00° 39                  | Fe Arc<br>NO filter       | 4-4-4        |



Spectr. Temp.  $52^{\circ}\text{F}$ Dome Temp./Hum.  $80^{\circ}\text{C}/98\%$ Transparency Conditions CLEAR 140Focus  $40R - 50R$ Spectr. Temp.  $44^{\circ}\text{F}$ Dome Temp./Hum.  $6^{\circ}\text{C}/88\%$ 

| Comparison Type/Filter | Exp   | Exp. Mtr. | Seeing         | Ptg. Mag. | Sp.  | Inst. | Grating/Tilt | Slit  | Emulsion            | P.H.                  | Program       | Remarks                      | Quality           |
|------------------------|-------|-----------|----------------|-----------|------|-------|--------------|-------|---------------------|-----------------------|---------------|------------------------------|-------------------|
| ARC D=1.1              | 13-13 | 200/103   | 5 <sup>+</sup> | 4.98      | B3Te | G12   | G12/.490     | 13/.9 | IIaD-e              | B                     | Sp Bin/Blm    | 28 Cyg                       |                   |
| ARC D=1.1              | 13-13 | 200/101   |                | V=3.75    | G8   | G12   | G12/.490     | 9/.5  | IIaD-e              | A                     | Hrk/Lm        | And                          | fine              |
| ARC D=1.1              | 4-4   | 200/199   |                | 4.83      | B8V  | G16   | G16R/.78     | 9/.5  | 098-02              | B                     | Algd std star | 32 Pq UV filter in           | fine              |
|                        |       |           |                |           |      |       |              |       | IIaD-e              |                       |               |                              |                   |
|                        |       |           |                |           |      |       |              |       | IIaD-E              |                       |               |                              |                   |
| ARC D=1.1              | 4-4   | 200/251   |                | 6.68      | G0I  | G16   | G16R/.78     | 13/.5 | 098-02E             | A                     | RS CVn        |                              | fine              |
| ARC D=1.1              | 4-4   | 200/252   |                | 6.68      | G0V  | G16   | G16R/.78     | 13/.5 | 098-02E             | B                     | RS CVn        |                              | fine - end fogged |
| ARC D=1.1              | 4-4   | 200/250   | 3-4            | 6.68      | G0V  | G16   | G16R/.78     | 13/.5 | 098-02e             | A                     | RS CVn        | focus at 50R                 |                   |
| ARC D=1.1              | 4-4   | 200/253   |                | 6.68      | G0V  | G16   | G16R/.78     | 13/.5 | 098-02e             | B                     | RS CVn        | end broken                   | fine +            |
| ARC D=1.1              | 4-4   | 200/196   |                | 6.68      | G0V  | G16   | G16R/.78     | 13/.5 | 098-02e             | A                     | RS CVn        | clouds BROKEN 2 PIECES       | fine +            |
|                        |       |           |                |           |      |       |              |       | IIaD 6 <sup>m</sup> |                       |               | + developed in broken plate  |                   |
|                        |       |           |                |           |      |       |              |       | 098 A <sup>m</sup>  | D19 68 <sup>o</sup> F | 21 175        | basket - calibration dubious |                   |
|                        |       |           |                |           |      |       |              |       |                     |                       | 28 179        |                              |                   |

141

Wed Thur

Emulsion Batches:  
Exp box #5 → II 90-e 20077-07107  
New Batch II 90 \*e 20077-12107

Date 12/13 Oct 1977 Observers Rm - Vlk - Tn / Fgi - 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.     |
|-----------|-------------------------|----------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|----------|
| 41962     | HD 186688 = SV Cyg      | 19 40.8              | +29° 01'            | 18:22                   | 18 43                 | 0108W             | +29 18      | Fe Arc<br>ND 1.10V        | 5-7      |
| 41962T    | Spot Calc for 41962-65  |                      |                     | 15 min @ -14V           |                       | D4<br>3900        | D3<br>4300  | D2<br>4810                |          |
| 41963     | HD 186688 = SV Cyg      | 19 40.8              | +29 01              | 19:41                   | 21:42                 | 03:07W            | +29 18      | Fe Arc<br>ND 1.10V        | 5-5-5    |
| 41964     | HD 203156               | 21 15.9              | +37° 49             | 21:51                   | 22 25                 | 02 15W            | +38 14      | Fe Arc<br>ND 1.10V        | 7-7-7    |
| 41965     | HD 191610 = 28 Cyg      | 20 05.7              | +36° 33             | 22:46                   | 22 55                 | 03 55W            | +36 53      | Fe Arc<br>ND 1.1          | 12-14-1  |
| 41966     | HD 220974               | 23 23.0              | +69° 49             | 23:01                   | 23 30                 | 01 12W            | +70 17      | Fe Arc<br>ND 1.1          | 13-13-1  |
| 41966T    | Spot Calc for 41966-68  |                      |                     | 15 min @ 15V            |                       | D4<br>3900        | D3<br>4300  | D2<br>4810                |          |
| 41967     | HD 31910                | 04 54.5              | +60 18              | 23 40                   | 23 56                 | 3 57E             | +           | Fe Arc<br>ND 1.10         | 13-13-13 |
| 41968     | HD 22468                | 03 <sup>h</sup> 31.6 | +0° 16              | 00 07                   | 02 11                 | 0 15E             | +00° 35.6   | Fe Arc<br>ND 1.10         | 13-13/3  |
| 41968T    | Strip Calc for 41966-68 |                      |                     | 70 sec                  |                       |                   |             |                           |          |





143

Fri/Sat

Date 14/15 Oct 1977 Observers Fgi-Tn-Rg-Pederos

Emulsion Batches:

.098-02..20097-06107  
\*098-02..20097-12107

| 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.          |
|-----------|------------------------------|---------------------|---------------------|-------------------------|-----------------------|----------------------|---------------|---------------------------|---------------|
| 41969     | HD 22468                     | 3 <sup>h</sup> 31.6 | +0° 16              | 23:14                   | 00:24                 | 01 <sup>h</sup> 54 E | +00° 38       | Fe Arc<br>NO FILTER       | 4-4-4 800/251 |
| 41969T    | Spot Cal'n for 41969 - 41971 |                     |                     | 15 min @                | 15V D3<br>4810        | 7V D1<br>H2          | 7V D2<br>5450 |                           |               |
| 41970     | HD 22468                     | 3 <sup>h</sup> 31.6 | +0° 16              | 00:27                   | 01:37                 | 00 <sup>h</sup> 42 E | +00° 38       | Fe Arc<br>NO FILTER       | 4-4-5 800/251 |
| 41971     | HD 22468                     | 3 <sup>h</sup> 31.6 | +0° 16              | 01:41                   | 03:11                 | 00 <sup>h</sup> 52 W | +00° 38       | Fe Arc<br>NO FILTER       | 4-4-4 800/250 |
| 41972     | HD 22468                     | 3 <sup>h</sup> 31.6 | +0° 16              | 03:16                   | 04:25                 | 02 <sup>h</sup> 07 W | +00° 38       | Fe Arc<br>NO FILTER       | 4-4-4 800/231 |
| 41973     | HD 22468                     | 3 <sup>h</sup> 31.6 | +0° 16              | 04:26                   | 05:27                 | 03 09 W              | +00° 38       | Fe Arc<br>NO FILTER       | 4-4-4 800/250 |
| 41973T    | Spot Cal'n for 41972 - 41973 |                     |                     | 15 min @                | 15V D3<br>4810        | 7V D1<br>H2          | 7V D2<br>5450 |                           |               |



Spectr. Temp. 45°F

Dome Temp./Hum. 41°F / 96%

Transparency Conditions CIRRUS 144

Focus 50-R

Spectr. Temp. 43°F

Dome Temp./Hum. 40°F / 99%

| Exp. Mtr. | Seeing | Pig. Mag. | Sp. | Inst.              | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks           | Quality         |
|-----------|--------|-----------|-----|--------------------|--------------|------|----------|------|---------|-------------------|-----------------|
| 300/251   | 3"     | 6.68      | G0V | G16R               | G16R/.7B     | 13/5 | 098-02c  | C    | RS CVn  | HR 1099           | v sl wh         |
|           |        |           |     |                    |              |      | "        |      |         |                   |                 |
| 300/251   |        | 6.68      | G0V | G16R               | G16R/.7B     | 13/5 | 098-02c  | A    | RS CVn  | HR 1099           | v sl wh         |
| 800/250   | 2"     | 6.68      | G0V | G16R               | G16R/.7B     | 13/5 | 098-02c  | C    | RS CVn  | HR 1099 cloud     | v sl wh         |
| 700/238   |        | 6.68      | G0V | G16R               | G16R/.7B     | 13/5 | 098-02c* | A    | RS CVn  | HR 1099 NEW BATCH | BROKEN 2 PIECES |
| 500/250   | 2-3    | 6.68      | G0V | G16R               | G16R/.7B     | 13/5 | 098-02c* | C    | RS CVn  | HR 1099           | fine            |
|           |        |           |     |                    |              |      | 098-02c  |      |         |                   |                 |
|           |        |           |     | 4 <sup>m</sup> D19 |              |      | 68°F     |      |         |                   |                 |
|           |        |           |     |                    |              | 24   | 160 4173 |      |         |                   |                 |
|           |        |           |     |                    |              | 27   | 160 4169 |      |         |                   |                 |

145

1 GROUP OF ~80 VISITORS for ~40 min  
(from Wataloo + Ms. Mastan)

Emulsion Batches:

...098:02...20047...-12107

\*098:02...~~20047~~...-17107

Mon-Tues

Date Oct 17-18, 1977..... Observers T.M. - Fgi. - A.R.e.....

| 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.  |
|-----------|---------------------------|----------------------|---------------------|--------------------------------|-----------------------|----------------------|---------------|---------------------------|-------|
| 41974     | HD 212097                 | 22 16.7              | +27 50              | 18 27                          | 18 59                 | 01 54E               | +28 16        | Fe Arc<br>UV              | 4-4-4 |
| 41974T    | Spot Calc for 41974-      | 79                   |                     | 15 min @                       | 15V D3<br>4810        | 7V D1<br>Hx          | 7V D2<br>5450 |                           |       |
| 41975     | HD 209975                 | 22 <sup>h</sup> 02.1 | +61° 48             | 20 <sup>h</sup> 13             | 20 <sup>h</sup> 26    | 00 <sup>h</sup> 12 E | +62° 10       | Fe Arc<br>UV              | 5-5-4 |
| 41976     | HD 219113                 | 23 <sup>h</sup> 08.3 | +02° 08             | 20 48                          | 21 33                 | 00 11 E              | +02 35        | Fe Arc<br>NO FILTER       | 4-4-4 |
| 41977     | HD 22468                  | 03 <sup>h</sup> 31.6 | +0° 16              | 23 47                          | 00 <sup>h</sup> 29    | 01 35E               | +00° 34       | Fe Arc<br>no filter       | 4-4-4 |
| 41978     | HD 22468                  | 03 <sup>h</sup> 31.6 | +0° 16              | 00 <sup>h</sup> 30             | 01 <sup>h</sup> 31    | 00 <sup>h</sup> 34E  | +00° 34       | Fe Arc<br>no filter       | 4-4-4 |
| 41979     | HD 22468                  | 03 <sup>h</sup> 31.6 | +0° 16              | 01 <sup>h</sup> 32             | 02 <sup>h</sup> 31    | 00 <sup>h</sup> 26W  | +00° 34       | Fe Arc<br>no filter       | 4-8   |
| 41979T    | Strip Calc for 41974-79.  |                      |                     |                                | 90 sec                |                      |               |                           |       |
| 41979T2   | new 098 02, evacuated 18h |                      | Hx D1               | 7 <sup>u</sup> 15 <sup>m</sup> | .18, 1.76             |                      | 30097-1707    |                           |       |
| 41979T3   | " , unevacuated           |                      | " "                 | "                              | .17, 1.50             |                      | 30097-1707    |                           |       |



Spectr. Temp. 42°F

Dome Temp./Hum. 40°F / 6.3%

Transparency Conditions Photometric - Cloudy

Focus 65-R

CLOUDS FOR ~2h

Spectr. Temp. 90°F

Dome Temp./Hum. 36°F / 90%

146

Comparison  
Type/Filter Expe Arc  
IV 4-4e Arc  
V 5-5e Arc  
FICR 4-4e Arc  
4-4e Arc  
4-4e Arc  
4-8

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.                    | Inst. | Grating/Tilt     | Slit   | Emulsion           | P.H. | Program     | Remarks                              | Quality      |
|-----------|--------|-----------|------------------------|-------|------------------|--------|--------------------|------|-------------|--------------------------------------|--------------|
| 200/100   | 2"     | 4.83      | B8V                    | G16   | G16R/0.7B        | 9/1.5  | 098-02e<br>098-02e | A    | Algol std   | uv filter in                         | fine         |
| 200/100   | 2"     | 5.19      | 09.5<br>I <sub>b</sub> | G16B  | G24/.38B         | 18/9   | 098-02e            | B    | Cyg X-1 std | FOCUS AT 80B - <u>Wrotter 4</u>      |              |
| 200/80    | 2"     | 9.0       | G5                     | G16R  | G16R/0.7B        | 13/1.5 | 098-02e            | C    | RSCVn       | Focus to 60R <sup>Some</sup> cloud   | sl wk uneven |
| 200/125   | 2-3"   | 6.68      | G0V                    | G16R  | G16R/.7B         | 13/1.5 | 098-02e            | C    | RSCVn       | HR1099                               | fine         |
| 200/124   | 2-5"   | 6.68      | G0V                    | G16R  | G16R/.7B         | 13/1.5 | 098-02e            | A    | RS CVn      | HR1099 some cloud                    | fine         |
| 200/13    | 2-4"   | 6.68      | G0V                    | G16R  | G16R/.7B         | 13/1.5 | 098-02e<br>098-02e | C    | RS CVn      | HR1099 much cloud<br>CLOUDS FOR 6.00 | v wk         |
|           |        |           |                        |       | 4 1/4" D19 67.5F |        | 27 16A             |      |             |                                      |              |

147

Used Thaw

Date

Oct 19-55

Observers

Rm-Vk-Tu

Emulsion Batches:

098-02e 30097...-17107  
200-e 20077...-12107

| 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  |
|-----------|------------------------|----------------------------|---------------------|-------------------------|-----------------------|-------------------|------------------|------------------------------|------|
| 41980     | HD 206778              | 21 <sup>h</sup> 39.3       | +9° 25              | 18:02                   | 18:07                 | 1 59E             | +9 529           | Fe Arc<br>No Filter          | 7-7  |
| 41981     | HD 186688 = SU Cyg     | 19 <sup>h</sup> 40.8       | +29° 01             | 18:21                   | 19:33                 | 1 25W             | +29 19           | Fe Arc<br>ND 1H              | 7-7  |
| 41981 T1  | Spot Calc              | for 41980, 82, 85.         |                     | 15 min @                |                       | 15V D3<br>4810    | 7V D2<br>5450    |                              |      |
| 41981 T2  | Spot Calc              | for 41981, 83, 84, 86, 87. |                     | 15 min @                |                       | D4<br>15V 3900    | D3<br>D2<br>4810 |                              |      |
| 41982     | HD 187921 SVV          | 19 <sup>h</sup> 47.4       | +27° 12.3           | 19:41                   | 21:56                 | 03 41W            | +27 30           | Fe Arc<br>No Filter          | 4-4  |
| 41983     | HD 206778              | 21 <sup>h</sup> 39.3       | +9° 25              | 22:05                   | 22:15                 | 02 08W            | +9 52            | Fe Arc<br>ND 1H              | 7-7  |
| 41984     | HD 203156 = LR 8157    | 21 <sup>h</sup> 15.4       | +37° 49             | 22:19                   | 22:52                 | 03 11W            | +38 16           | Fe Arc<br>ND 1H              | 7-7  |
| 41985     | HD 209975              | 22 <sup>h</sup> 02.1       | +61° 48             | 23:02                   | 23:19                 | 02 53W            | +62 16           | Fe Arc<br>UV Filter          | 4-4  |
| 41986     | HD 220974 = HR 8715    | 23 <sup>h</sup> 23.1       | +69° 49             | 23:27                   | 00:11                 | 02 25W            | +70 19           | Fe Arc<br>ND 1H<br>UV Filter | 7-7  |
| 41987     | HD 31910 = $\beta$ Cam | 04 54.5                    | 60° <u>18</u>       | 00:21                   | 00:32                 | 02 47E            | +60° 30          | Fe Arc<br>ND 1H<br>UV Filter | 7-14 |



Spectr. Temp.  $49^{\circ}\text{F}$  Dome Temp./Hum.  $48/93\%$  Transparency Conditions  $\text{Hazy} \rightarrow \text{Fog} - \text{OK}$  148

Focus  $50R \rightarrow 90B - 50R$

Spectr. Temp. Dome Temp./Hum.  $42^{\circ}\text{F}/100\% \pm$

| Comparison Type/Fil/Exp | Exp. Mtr. | Seeing  | Ptg. Mag. | Sp.      | Inst.    | Grating/Tilt         | Slit    | Emulsion | P.H.         | Program                                      | Remarks             | Quality |
|-------------------------|-----------|---------|-----------|----------|----------|----------------------|---------|----------|--------------|--|---------------------|---------|
| 7-1707                  | 10        | 3"      | 3.98      | K2Ib     | G16r     | G16r/.7B             | 9/5     | 098-02e  | A            | Std Vel                                      | UV Filter in        | vsl str |
| 7-12107                 | 115       | 3"      | 6.8 - 7.7 | F0 - 761 | G16B     | G16b/.38             | 13/5    | IIa0E    | B            | Ceph/Evans                                   | Focus 90B UV Filter | fine    |
|                         |           |         |           |          |          |                      |         | 098-02e  |              |  |                     |         |
|                         |           |         |           |          |          |                      |         | IIa0e    |              |  |                     |         |
| 300/148                 | 2-3       | 7.9-8.6 | F1-80     | G16r     | G16r/.7B | 13/5                 | 098-02e | C        | Ceph/Evans   | Focus 50R no filters                         | 02                  |         |
| 40/21??                 | "         | 3.98    | K2Ib      | G16b     | G16b/.38 | 9/5                  | IIa0E   | A        | Std Vel      | Focus 85B (Exp? meter)                       | vsl str             |         |
| 400/100                 | 2         | 5.89    | F2        | G16b     | "        | 13/5                 | IIa0E   | B        | Cephid/Evans |  | fine                |         |
| 400/200                 | 3         | 5.19    | 09.5Ib    | G16b     | G24/.38B | 18/9                 | 098-02e | A        | C49X-1Std    | Written #4 in $\alpha = 23$ 04.14            | fine                |         |
| 200/48                  | 3"        | 5.50    | A6II      | G16b     | G16/.38  | 13/5                 | IIa0e   | B        | Evans        | Written Out $\rightarrow$ UV in spec *broken |                     |         |
| 200/                    | 3"        | 4.2     | G2Ib      | G16b     | G16/.38B | 13/5                 | IIa0e   | C        | "            |  | fussy               |         |
|                         |           |         |           |          | IIa0     | $5\frac{1}{2}^m$ D11 | 680F    | 17       | 172          |  |                     |         |
|                         |           |         |           |          | 098      |                      |         | 25       | 2.58         |  |                     |         |





Spectr. Temp. 50°F

Dome Temp./Hum. 48°F / 83%

Transparency Conditions Excellent

150

Focus 40-R-55R

Spectr. Temp. 44°F

Dome Temp./Hum. 40°F / 100%

| Comparison Type/Filter Exp | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.                      | Inst. | Grating/Tilt | Slit   | Emulsion | P.H. | Program        | Remarks                                  | Quality                                |          |
|----------------------------|-----------|--------|-----------|--------------------------|-------|--------------|--------|----------|------|----------------|--|--|----------|
| Fe 6e<br>ND 1/10 2-10      | 40/20     | 1-2    | 3.75      | G8 <sup>1/2</sup><br>-IX | G12   | G12/0.498    | 9/15   | IIa0-e   | A    | HeK Bin-Ly 1   |  | Weak Fe<br>fine<br>weak Fe<br>lines    |          |
| Fe 6e<br>ND 1/10 2-10      | 40/≈20    | "      | 4.06      | K12 <sup>1/2</sup><br>p  | G12   | G12/0.498    | 9/15   | "        | B    | "              |  |  |          |
| Fe 6e<br>ND 1/10 2-10      | 300/75    | 2-3    | 9.5V      | Aset<br>760              | G65   | G43/0.49     | 20/4   | 098-02   | C    | BB eclip. bin. | RW Per Wra. 7/7                          | guiding,<br>etc.                       |          |
| Fe 6e<br>ND 1/10 2-10      | 300/75    | 1-2    | 8.0V      | A0+G                     | "     | "            | 20/4   | "        | B    | "              | RW Tau                                   | "                                      | v stable |
| "                          | 300/75    | 2      | 9.2V      | A4p                      | "     | "            | 20/4   | "        | C    | "              | RX Gem                                   | "                                      | v stable |
| "                          | 300/76    | "      | "         | "                        | "     | "            | "      | "        | B    | "              | "  | "                                      | v stable |
| "                          | 300/75    | 1-2    | "         | "                        | "     | "            | "      | "        | C    | "              | "  | "                                      | guiding  |
| "                          | 40/29     | 2-4    | 4.2       | G0p                      | G12   | G12/0.49     | 9/19   | IIa0-e   | A    | Ceph Py        | <sup>β</sup> Cam<br>Focus changed to 55R | Weak Fe<br>fine<br>cen. st. to<br>blue |          |
| 5/5                        | no filter |        |           |                          |       |              |        | "        | B    |                |  |  |          |
|                            |           |        |           |                          | IIa0  | 6m           |        | 20,168   |      |                |  |  |          |
|                            |           |        |           |                          | 098   | 5m           | Dig 6m | 20,165   |      |                |  |  |          |

151. 2 Tours of 80 rock  $\approx$  2.5 hrs Moon 100 K

Emulsion Batches:

...LaO-e 20077-19107

Date Oct 22/23 Sat Sun Observers BK - T.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.  |
|-----------|----------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|--------------------|---------------------------|-------|
| 41996     | HD 194093            | 20 18.6      | +39 56              | 21 19                   | 21 23                 | 2 48W             | 4 01.7             | Fe Arc<br>ND 110          | 20-20 |
| 41997     | HD 214665            | 22 34.7      | +56 17              | 21 29                   | 23 40                 | 2 51W             | +56 46             | Fe Arc<br>ND 110          | 15-15 |
| 41997T    | Spot col'd for 41997 |              |                     | 15 min                  | @ 15V                 | D4<br>3900        | D3 D2<br>4300 4810 |                           |       |
| 41998     | HD 3627              | 0 34.0       | +30.19              | 23 43                   | 1 25                  | 2 35W             | +30 48             | Fe Arc<br>ND 110          | 4-4   |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |
|           |                      |              |                     |                         |                       |                   |                    |                           |       |

Spectr. T.  
Focus...  
Spectr. F.  
Exp. Mtr.

40/22  
50/20  
100/66





II 1 Oct 23/24  
153 Sun-Mon

Emulsion Batches:

Date Oct. ~~23~~ 24/9.77 Observers Tn-Pdr.f..Tn.....

.D.O.e... 20077...-19107  
098-02e... 20047...-20107

| 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.     |
|-----------|---------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|----------------|---------------------------|----------|
| 41999     | HD 227107                 | 23 36.4      | +46 20              | 18 05                   | 18 36                 | 03 09E            | +46 25         | Fe Arc<br>ND 110          | 14-16-4  |
| 41999T    | Spot Calc for 41999-42001 |              |                     | 15 min @                | 15V                   | D4<br>3900        | D3<br>4300     | D2<br>4810                |          |
| 42000     | HD 4502                   | 00 42.0      | +23 43              | 18 46                   | 19 33                 | 03 22E            | +24 14         | Fe Arc<br>ND 110          | 15-15-2  |
| 42001     | HD 186688                 | 19 40.8      | +29 01              | 19 40                   | 21 16                 | 03 24W            | +29 19         | Fe Arc<br>ND 110          | 15-15-13 |
| 42002     | HD 209975                 | 22 02.1      | +61 48              | 21 32                   | 21 55                 | 01 42W            | +62 15         | Fe Arc<br>UV+None         | 4-4-4    |
| 42002T    | Spot Calc for 42002-11    |              |                     | 15 min @                | 15V D3<br>4810        | 7V D1<br>Hx       | 7V D2<br>5450  |                           |          |
| 42003     | HD 212097                 | 22 16.7      | +27 50              | 22 06                   | 22 41                 | 2 13 W            | +28 20         | Fe Arc<br>UV              | 4-4-4    |
| 42004     | "                         | "            | "                   | 22 42                   | 23 13                 | 2 44 W            | "              | "                         | 4-4-4    |
| 42005     | "                         | "            | "                   | 23 14                   | 23 48                 | 3 19 W            | "              | "                         | 4-4-4    |
| 42006     | "                         | "            | "                   | 23 49                   | 00 27                 | 3 58 W            | "              | "                         | 4-4-4    |
| 42007     | "                         | "            | "                   | 00 27                   | 01 13                 | 4 44 W            | "              | "                         | 4-4-4    |
| 42008     | HD 22468                  | 03 31.6      | +0 16               | 01 20                   | 02 24                 | 0 41 W            | +00 37         | Fe Arc<br>None            | 4-4-4    |
| 42009     | "                         | "            | "                   | 02 26                   | 03 22                 | 1 39 W            | "              | "                         | 4-4-6    |
| 42010     | "                         | "            | "                   | 03 23                   | 04 14                 | 2 30 W            | "              | "                         | 4-4-4    |
| 42010T    | Spot Calc for 42002-11    |              |                     | Repeat 15 min @         | 7V D2<br>5450         | 7V D1<br>Hx       | 15V D3<br>4810 |                           |          |



19107  
20107

Spectr. Temp.  $42^{\circ}F$  ..... Dome Temp./Hum.  $38^{\circ}F / 87\%$

Transparency Conditions *Very good - Photo metric* <sup>154</sup>

Focus .....  $70-R - 75B$  for G166

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

| Exp. Mtr.     | Seeing | Ptg. Mag.    | Sp.       | Inst. | Grating/Tilt | Slit | Emulsion                   | P.H. | Program                                     | Remarks  | Quality                                  |
|---------------|--------|--------------|-----------|-------|--------------|------|----------------------------|------|---|--|--|
| 200/2110      | 2"     | $V = 3.75$   | G8 II -IV | G12   | G12/0.498    | 9/5  | Duo-e                      | A    | HekBin Ly                                   | } Too long? maybe slit narrower than scale reading | fine                                     |
| 200/110       | 2"     | 4.06         | K2DP      | G12   | G12/490      | 9/5  | Duo-e                      | B    | HekBin Ly                                   |  | fine                                     |
| 200/160       | 3"     | $G8-FO-7.66$ | G1        | G12   | G12/1.498    | 13/5 | "                          | C    | Ceph-Rm                                     | This Exp seems normal slit changed to 13 width     | fine                                     |
| 200/118       | 3"     | 5.19         | 09.5 Ib   | G24R  | G166/1.388   | 18/9 | 099-02e                    | B    | Cy9 x-1. Std Bln                            | Written 74 + UV Focus 75B                          | v sl str<br>Written 8<br>would be better |
| 200/105       | 3"     | 4.83         | B8 V      | G16R  | G165/0.70    | 9/5  | 098-02e                    | C    | Algal Std-2d                                | Focus to 70R<br>UV Filter in 100% H Frosty         | fine                                     |
| 200/104       | 2-3"   | "            | "         | "     | "            | "    | "                          | A    | "   | " no haze though                                   | fine                                     |
| 200/105       | "      | "            | "         | "     | "            | "    | "                          | B    | "   | "  | fine                                     |
| 200/102       | "      | "            | "         | "     | "            | "    | "                          | A    | "   | "  | fine                                     |
| 200/102       | 3-C    | "            | "         | "     | "            | "    | "                          | B    | "   | " some thin clouds                                 | fine                                     |
| 200/63        | 3-4    | 6.68         | GO V      | "     | "            | 13/5 | "                          | C    | RSCV <sub>n</sub> -F <sub>g</sub> i         | Console failed                                     | exp fine<br>red end<br>out of focus      |
| 200/125       | "      | "            | "         | "     | "            | "    | "                          | A    | "   | "  | fine/v sl str                            |
| 200/120       | "      | "            | "         | "     | "            | "    | "                          | B    | "   | "  | "  |
| for insurance |        |              |           |       |              |      | * Placed in 098 Un Exp Box |      | One more next page                          |  |  |
|               |        |              |           |       |              |      | next to strip rack         |      | I guess this is inconvenient to develop eh? |  |  |





Spectr. Temp. .... Dome Temp./Hum. .... Transparency Conditions .. getting sl. hazy .. 156

Focus ..... 70R .....

Spectr. Temp. .... Dome Temp./Hum. 35°F / 100% .....

| Comparison<br>Type/Filter Exp     | Exp. Mtr.     | Seeing | Ptg.<br>Mag. | Sp. | Inst. | Grating/<br>Tilt | Slit      | Emulsion | P.H.    | Program | Remarks      | Quality          |
|-----------------------------------|---------------|--------|--------------|-----|-------|------------------|-----------|----------|---------|---------|--------------|------------------|
| Fe Arc<br>None<br>Fe Arc<br>ND1-0 | 4-4<br>700/12 | 3" G   | 6.68         | G0V | G16R  | G16/0.708        | 13/15     | 098-02e  | C       | RSCV4   | red end over | ok fine<br>focus |
| 15-16-17                          | 70/29         | 2"     | 4.2          | G0p | G12   | G12/0.498        | 9/19      | IIa0-e   | B       | Ceph Py |              |                  |
|                                   |               |        |              |     |       | IIa0             | 6 1/2 D19 | 67.5 F   | 19      | 157     |              |                  |
|                                   |               |        |              |     |       | 098              | 5" D19    | 68 F     | 26, 176 | 27, 196 |              |                  |







159

Date Oct 27/28. (Th/Fr) '77 Observers BB-Ri

Emulsion Batches:

No. D-E 200.77-1910.7

098-02... 30.097-2410.7

| 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.       |
| 42015     | $\lambda$ And<br>HD 222107 | 23 32.7             | +45° 55'            | 17:50                   | 18:21                 | 3 08 E            | +46° 26.8   | Fe ABC<br>ND 1.1    | 15-15-15   |
| 42016     | HD 4502 ( $\delta$ And)    | 0 42.0              | +23° 43'            | 18:26                   | 19:29                 | 3 09 E            | +24° 15.5   | "                   | 15-15-15   |
| 42016T1   | opt cal for plate          | 42015-18            |                     |                         | 15 min @              | 15 volts          | D4<br>39W   | D3<br>4300          | D2<br>4810 |
| 42016T2   | step cal for plate         | 42015-18            |                     |                         | 90 sec                |                   |             |                     |            |
| 42017     | HD 222107 ( $\lambda$ And) | 23 32.7             | +45° 55'            | 19:35                   | 20:06                 | 1 22 E            | +46° 26     | Fe ABC<br>N.D. 1.10 | 15-15-15   |
| 42018     | HD 222107 "                | "                   | "                   | 20:07                   | 20:37                 | 0 50 E            | "           | "                   | 15-15-15   |
| 42019     | HD 276247 (RW Per)         | 4 <sup>h</sup> 13.4 | +42° 04'            | 0:40                    | 3:43                  | 1 34 W            | +42° 19.5   | "                   | 8-8-8      |
| 42019T1   | opt cal for plate          | 42019-20            |                     |                         | 15 min                | D3 15V<br>4810    | D1 7V<br>H2 | D2 7V<br>NO FILTER  |            |
| 42020     | HD 58713 (RY Gem)          | 7 <sup>h</sup> 21.7 | +15° 52'            | 3:58                    | 5:03                  | 0 12 E            | +15° 47.2   |                     | 8-8-8      |





161

Emulsion Batches:

IIa O.E. 20077-27107

098-02 E. 30097-24107

Date .. 08.28.29.1977. Observers .. Ly-Ri-Rg .....

| 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          |            | Exp. Mtr. |
|-----------|--------------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|--------------|---------------------|------------|-----------|
|           |                                      |              |                     |                         |                       |                   |              | Type/Filter         | Exp.       |           |
| 42021     | HD 222107 (λ And)                    | 23 32.7      | +45° 55'            | 17:52                   | 18:09                 | 03 17E            | +46 24       | Fe ARC<br>ND 1.1    | 15-15-15   | 125       |
| 42022     | HD 4502 (S And)                      | 0 42.0       | +23° 43'            | 18:14                   | 19:06                 | 03 20E            | +24° 13      | Fe ARC<br>ND 1.10   | 15-15-15   | 150       |
| 42023     | HD 10260                             | 01 35.2      | +60 32              | 19:20                   | 20:01                 | 03 27E            | +61° 00'     | Fe ARC<br>ND 1.10   | 15-15-15   | 139       |
| 42024     | HD 173426 (S Lyr)                    | 18 50.2      | +36° 51'            | 20:18                   | 20:33                 | 03 52W            | +37° 02'     | Fe ARC<br>ND 1.10   | 15-15-15   | 120       |
| 42025     | HD 212097 (32 Peg)                   | 22 16.7      | +27° 50'            | 20:51                   | 21:16                 | 01 07W            | +28 18       | Fe ARC<br>UVF, Hcp  | 4-4-4      | 205       |
| 42026     | HD 209975 (19 Cen)                   | 22 02.1      | +61° 48'            | 21:32                   | 21:52                 | 01 58W            | +62 14       | Fe ARC<br>UVF, Hcp  | 4-4-4      | 220       |
| 42026T1   | spot cal for plate 42021-27, 29, 33  |              |                     |                         | 15min                 | 15min             | DY<br>39W    | D3<br>43W           | 52<br>4810 |           |
| 42026T2   | strip cal for plate 42027-29, 29, 33 |              |                     |                         |                       | 90sec             |              |                     |            |           |
| 42026F1   | focus test                           |              |                     |                         |                       |                   |              | Fe ARC<br>UV Filter | 10-70      |           |
| 42027     | HD 4174 (EG And)                     | 00 39.1      | +40 08              | 22 06                   | 23:28                 | 00 57W            | +40 37       | Fe ARC<br>UV Filter | 4-4-4      | 100       |
| 42028     | HD 224085                            | 23 49.9      | +28° 06'            | 23:42                   | 01:44                 | 04 03W            | +28 32       | "                   | 4-4-4      | 139       |
| 42028T1   | spot cal for plates 42025-27,        |              |                     |                         | 15min                 | D 3150<br>4810    | D 190<br>Hcp | D 270<br>5450       |            |           |
| 42029     | HD 20365                             | 03 11.5      | +49 51              | 01:59                   | 02:09                 | 01 04W            | +50 11       | Fe ARC<br>UV Filter | 4-3        | 55        |
| 42030     | HD 22403                             | 03 31.2      | +25 40              | 02:29                   | 03:04                 | 01 40W            | +26 00       | Fe ARC<br>ND 1.10   | 10-10-10   | 82        |
| 42031     | HD 58713 (RY Gem)                    | 07 21.7      | +15° 52'            | 03:24                   | 04:22                 | 00 52E            | +15° 47'     | Fe ARC<br>ND 1.10   | 10-10-10   | 80        |



Spectr. Temp. .... 53°F .....

Dome Temp./Hum. . 10°C ... 78%

Transparency Conditions . . . good .....

162

Focus ..... 40R .....

Spectr. Temp. .... ..

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

| Comparison<br>Type/Filter<br>Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.               | Inst. | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program     | Remarks                                    | Quality               |
|----------------------------------|-----------|--------|--------------|-------------------|-------|------------------|------|----------|------|-------------|--|-----------------------|
| ARC<br>15-15                     | 00/125    | 2      | $v=$<br>3.75 | G8 II<br>II       | G-12  | G-12/.490        | 9/5  | IIaD-E   | A    | H+K Bin-Ly  | BROKEN 2 PIECES                            | v sl wk               |
| ARC<br>15-15                     | 00/150    | 2-3    | $v=$<br>4.06 | KIII <sub>p</sub> | G-12  | G-12/.490        | 9/5  | IIaD-E   | B    |             | CLOUDS FOR PART.                           | v sl wk               |
| ARC<br>15-15                     | 00/139    | 2-3    | 5.58         | B3                | G12   | G-12/.490        | 13/5 | IIaD-E   | A    | Ap Si-Ly    |  | fine                  |
| ARC<br>15-15                     | 00/120    | 2-3    | 5.4          | B3                | G12   | G12/.490         | 13/5 | IIaD-E   | B    | Sp Bin-Ly   |  | fine                  |
| ARC<br>4-4                       | 00/205    | 2-3    | 4.83         | B8V               | G16R  | G16/.700         | 9/5  | 098-02E  | A    | Agal. 20-20 | UV FILTER IN<br>WRITTEN #4                 |                       |
| ARC<br>4-4                       | 00/222    | 3      | 5.19         | 09-516            | G-24  | G16B/.38         | 18/9 | 098-02-E | B    | Cysx-1 data | UV FILTER IN Focus 10R                     | fine                  |
|                                  |           |        |              |                   |       |                  |      | IIaD-E   |      |             |  | ambiguon<br>no. 7     |
|                                  |           |        |              |                   |       |                  |      | IIaD-E   |      |             |  |                       |
| ARC<br>3-3                       |           |        |              |                   | G-24  | G16B/.38         | 9/   | 098-02-E | A    |             | Focus TEST G24R                            | center-<br>sl to blue |
| ARC<br>4-4                       | 00/100    | 3      | $v=$<br>7.3  | G12E              | G-24  | G16B/.38         | 13/5 | 098-02-E | B    | Sp Bin-Ly   | UV FILTER                                  | v sl wk<br>comp str   |
| ARC<br>4-4                       | 00/139    | 3      | 8.30         | K0                | G-24  | G16B/.38         | 13/3 | 098-02 E | A    | H+K Bin-Ly  | removed without<br>dark slide              | black<br>descended    |
|                                  |           |        |              |                   |       |                  |      | 098-02E  |      |             |  |                       |
| ARC<br>4-3                       | 00/52     | 3      | 5.1          | B3                | G16B  | G16B/.38         | 18/4 | IIaD-E   | B    | B STD VEL   | WRITTEN 4 SENT.                            | v sl str.             |
| ARC<br>5-5                       | 00/82     | 3-4    | $v=$<br>8.0  | G0                | G65   | G43/.490         | 13/5 | 098-02E  | A    | H+K Bin-Ly  | focus not reset after G16B<br>WRITTEN 4 IN | fine                  |
| ARC<br>10-10                     | 00/80     |        | 8.5v         | A2e<br>+K2        | G65   | G43/.490         | 20/4 | 098-02E  | B    | ECL BIN-13B |  | fine                  |





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

FOCUS *40R* .....

*exposed Brin #045*

Spectr. Temp. ... *45°F* ..... Dome Temp./Hum. ... *05°C* ... *100%*

| Comparison Type/Filter Exp                  | Exp. Mtr. | Seeing | Ptg. Mag.  | Sp.    | Inst. | Grating/Tilt            | Slit | Emulsion | P.H.    | Program     | Remarks                                 | Quality             |
|---|-----------|--------|------------|--------|-------|-------------------------|------|----------|---------|-------------|---|---------------------|
| Fe ABC<br>No filter<br>4-44<br>D2<br>H (mm) | 400/140   |        | V=<br>4.28 | K1 III | G-16R | G160/<br>.7             | 9/5  | 098-02   | A       | H+K Brin Ly |   | fine                |
| Fe Acc<br>N=110<br>2-44                     | 400/143   | 3"     | 6.32       | B3p    | G12   | G12/.490                | 13/5 | IIa0E    | B       | Bp Bln.     | BROKEN 2 PIECES<br>lovely field<br>DAWN | lamer<br>piece lost |
|   |           |        |            |        |       | 098 6'1/2 <sup>m</sup>  |      |          |         |             |   |                     |
|   |           |        |            |        |       | II20 6'1/2 <sup>m</sup> | D19  | G20E     |         |             |   |                     |
|   |           |        |            |        |       |                         |      |          | 30 273  |             |   |                     |
|   |           |        |            |        |       |                         |      |          | 31 279  |             |   |                     |
|   |           |        |            |        |       |                         |      |          | 18. 175 | or 20 182   |   |                     |

165

Emulsion Batches:

Kaw-E 20077-28107

Date Sat. Sun. Oct. 29-30, 1977 Observers R. (Neufeld) - Ri.

| 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   |
|-----------|-----------------------|----------------------|---------------------|-------------------------|------------------------------|-------------------|--------------------|---------------------------|-------|
| 42033F1   | focus test            |                      | actad/via           |                         |                              |                   |                    | Fe ARC<br>NO FILTER       | 5-5   |
| 42034     | HD 222107 (λ And)     | 23 <sup>h</sup> 32.7 | +45° 55'            | 17:53                   | 18:16                        | 03404E            | +46° 23'           | Fe ARC<br>N.D. 1.1        | 15-15 |
| 42035     | HD 210461             | 22 05.5              | +14 07              | 18 27                   | 19 39                        | 0 13 E            | +14° 36'           | Fe ARC<br>N.D. 1.10       | 14-14 |
| 42036     | HD 218381             | 23 02.5              | +20 03              | 19 44                   | 21 38                        | 0 48 W            | +20° 32'           | Fe ARC<br>N.D. 1.10       | 14-14 |
| 4203671   | spot caln for plates  | 42034-42             |                     |                         | 15 min @ 152V <sub>lts</sub> |                   | 04 03<br>3900 4300 | D2<br>4810                |       |
| 4203672   | strip caln for plates | 42034-42             |                     |                         | 90 sec                       |                   |                    |                           |       |
| 42037     | HD 6288               | 00 <sup>h</sup> 58.7 | +00° 50'            | 21 42                   | 22 16                        | 0 30 E            | +01° 19'           | Fe ARC<br>N.D. 1.10       | 14-14 |
| 42038     | HD 11092              | 01 <sup>h</sup> 44.0 | +64° 22'            | 22 25                   | 23 59                        | 0 25 W            | +64° 46'           | Fe ARC<br>ND 1.10         | 13-13 |
| 42039     | HD 22912              | 03 <sup>h</sup> 35.7 | +71° 18'            | 00 04                   | 01:33                        | 0° 06 W           | +71° 35'           | Fe ARC<br>ND 1.1          | 13-13 |
| 42040     | HD 28033              | 04 <sup>h</sup> 20.4 | +21° 14'            | 01 44                   | 03 24                        | 1 15 W            | +21° 27'           | Fe ARC<br>N.D. 1.1        | 13-13 |
| 42041     | HD 36044              | 05 <sup>h</sup> 23.8 | +29° 29'            | 03 26                   | 05 04                        | 1 52 W            | +29° 35'           | Fe ARC<br>N.D. 1.10       | 13-13 |
| 42042     | HD 71663              | 08 <sup>h</sup> 23.5 | -2° 11'             | 05 08                   | 06 11                        | 0 03 W            | -02° 21'           | Fe ARC<br>N.D. 1.10       | 14-14 |





167

Date Sun. Mon. Oct 30-31, 1977 Observers Ed-Ri./Ri.....

Emulsion Batches:

098-02...24047-29107

127-05...00095-21107

(oil contain) 127-05\*...00095-26087

| 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.  |
|-----------|---------------------|---|---------------------|-------------------------|-----------------------|------------------------|-------------|---------------------------|-------|
| 42043     | HD 212097 (32 PEG)  | 22 <sup>h</sup> 16. <sup>m</sup> 7              | +27° 50'            | 17:50                   | 18:15                 | 01 <sup>m</sup> 46E    | +28 18.6    | FEARC<br>UV FILTER        | 4-4-2 |
| 42044     | "                   | "   | "                   | 18:17                   | 18:54                 | 01 09E                 |             | "                         | 4-4-2 |
| 42044T1   | spot cal for plates | 42043-48, 52                                    |                     |                         |                       | 15mmi<br>D3750<br>4810 | D170<br>D2  | Hd                        | 5450  |
| 42045     | HD 212097 (32 PEG)  | 22 <sup>h</sup> 16.7                            | +27° 50'            | 18:55                   | 19:35                 | 00 27E                 | +28° 18     | FEARC<br>UV FILTER        | 4-4-2 |
| 42046     | HD 212097 (32 PEG)  | "   | "                   | 19:36                   | 20:18                 | 00 15 W                | "           | "                         | 4-4-2 |
| 42047     | HD 212097 (32 PEG)  | "   | "                   | 20:19                   | 20:57                 | 00 54 W                | "           | "                         | 4-4-2 |
| 42048     | HD 212097 (32 PEG)  | "   | "                   | 20:58                   | 21:29                 | 01 27 W                | "           | "                         | 4-4-2 |
| 42049     | HD 19356 (B PER)    | 03 <sup>h</sup> 01 <sup>m</sup> 40 <sup>s</sup> | +40° 34'            | 21:36                   | 21:52                 | 02 55E                 | +40° 57'    | "                         | 9-9-9 |
| 42050     | "                   | "   | "                   | 22:00                   | 22:20                 | 02 25E                 | "           | "                         | 9-9-9 |
| 42050T1   | spot cal for plates | 42049, 51, 53, 57, 59                           |                     |                         |                       | 15mmi @ 7.5Vults       | D4<br>5100  | D2<br>Hd                  | 5450  |
| 42051     | HD 19356 (B PER)    | 03 <sup>h</sup> 01.7                            | +40° 34'            | 22:30                   | 22:51                 | 01 55E                 |             | "                         | 9-9-9 |
| 42052     | HD 21242 (UX Ari)   | 03 <sup>h</sup> 20.5                            | +28° 22'            | 22:57                   | 23:48                 | 01 15E                 | +28° 44'    | FEARC<br>NO FILTER        | 4-4-2 |
| 42052T1   | spot cal for plates | 42050, 54, 55, 58, 60,                          |                     |                         |                       | 15mmi @ 7.5Vults       | D4<br>5100  | D2<br>Hd                  | 5450  |
| 42053     | HD 19356 (B PER)    | 03 <sup>h</sup> 01.7                            | +40° 34'            | 23:51                   | 00:09                 | 00° 35E                | +40° 56'    | FEARC<br>UV FILTER        | 9-9-9 |
| 42054     | "                   | "   | "                   | 00:20                   | 00:44                 | 00 00                  | +40° 56'    | "                         | 9-9-9 |



Spectr. Temp. 50°F

Dome Temp./Hum. 08°C 65%

Transparency Conditions excellent 168

Focus 40R

Spectr. Temp. ....

Dome Temp./Hum. ....

| Comparison Type/File              | Exp. | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program      | Remarks                             | Quality      |
|-----------------------------------|------|-----------|--------|-----------|-----|-------|--------------|------|----------|------|--------------|-------------------------------------|--------------|
| Fe ALC<br>NO FILTER<br>P2<br>S450 | 4-4  | 200/106   | 2      | 4.83      | B8V | G16R  | G16/700      | 9/5  | 098-02E  | A    | Algal Std-2d | UV FILTER IN                        | fine         |
|                                   | 4-4  | 200/151   |        |           |     |       |              | 9/7  | "        | B    | "            | "                                   | "            |
|                                   | 4-4  | 200/150   |        |           |     |       |              | 9/7  | "        | A    | "            | "                                   | light struck |
|                                   | 4-4  | 200/150   | 2-3    |           |     |       |              | 9/7  | "        | B    | "            | "                                   |              |
|                                   | 4-4  | 200/151   |        |           |     |       |              | 9/7  | "        | A    | "            | "                                   |              |
|                                   | 4-4  | 200/151   |        |           |     |       |              | 9/7  | "        | B    | "            | "                                   |              |
|                                   | 4-4  | 10/178    |        | 2.2V      | B8V |       |              | 9/9  | 127-05E  | A    | Algal-2d     | "                                   | fine         |
|                                   | 4-4  | 10/205    |        | "         | "   |       |              | 9/9  | 127-05E* | B    | "            | "                                   | 1st str      |
|                                   | 4-4  |           |        |           |     |       |              |      | 127-05E  |      |              | 1st filter should be AB10 for Algal |              |
|                                   | 4-4  | 10/180    |        | 2.2V      | B8V |       |              | 9/9  | 127-05E  | A    | "            | "                                   | fine         |
| Fe ALC<br>NO FILTER<br>P2<br>S450 | 4-4  | 400/127   |        | 6.5V      | G5  | G16R  | G16/700      | 13/5 | 098-02E  | B    | RSCUn-Fgi    | UV FILTER OUT                       |              |
|                                   | 4-4  |           |        |           |     |       |              |      | 127-05E* |      |              | "                                   |              |
| Fe ALC<br>NO FILTER<br>P2<br>S450 | 4-4  | 10/174    |        | 2.2V      | B8V |       |              | 9/9  | 127-05E  | A    | Algal-2d     | UV FILTER IN                        |              |
|                                   | 4-4  | 10/118    | 2      | "         | "   |       |              |      | 127-05E* | B    | "            | "                                   |              |





Spectr. Temp. ....

Dome Temp./Hum. ....

Transparency Conditions *excellent* ..... 170

Focus ..... 40 R .....

3:15 *fast moving clouds from the S.E.*

Spectr. Temp. ... 43°F .....

Dome Temp./Hum. ... 4°C ... 100%

| Comparison Type/Filter | Exp   | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.  | Grating/Tilt                  | Slit | Emulsion | P.H. | Program   | Remarks       | Quality |
|------------------------|-------|-----------|--------|-----------|-----|--------|-------------------------------|------|----------|------|-----------|---------------|---------|
| Fe ARC                 | 9-9-7 | 40/206    | 2      | 22V       | B8V | G-16 R | 616/1.700                     | 9/9  | 127-05*  | A    | Algot-2d  | UV FILTER IN  | fine    |
| UV FILTER              | 4-4-4 | 400/126   | 2      | 6.68      | G0V | "      | "                             | 13/5 | 098-02 E | B    | RSCUN -Tg | UV FILTER OUT | "       |
| Fe ARC                 | 9-9-7 | 40/172    |        | 22V       | B8V | "      | "                             | 9/9  | 127-05 E | A    | Algot-2d  | UV FILTER IN  | "       |
| NO FILTER              | 9-9-7 | 40/194    |        | "         | "   | "      | "                             | 9/9  | 127-05*E | B    | "         | "             | "       |
| Fe ARC                 | 9-9-7 | 40/180    |        | "         | "   | "      | "                             | 9/9  | 127-05 E | A    | "         | "             | clouds  |
| UV FILTER              | 9-9-7 | 30/120    |        | "         | "   | "      | "                             | 9/9  | 127-05*E | B    | "         | "             | "       |
|                        |       |           |        |           |     | 127-05 | 5 <sup>m</sup>                | D19  | 68°F     |      |           |               |         |
|                        |       |           |        |           |     | 098-02 | 6 <sup>1/2</sup> <sup>m</sup> |      |          |      |           |               |         |
|                        |       |           |        |           |     |        |                               |      | 22 269   |      |           |               |         |
|                        |       |           |        |           |     |        |                               |      | 34 301 * |      |           |               |         |
|                        |       |           |        |           |     |        |                               |      | 28 208   |      |           |               |         |

171

Mon/Tues

Date Oct 31, Nov 1, 1977. Observers Bud-Ri

Emulsion Batches:

Ilao E 20077-28107

Ilao E 20077-31107

| Plate No. | dup.<br>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.          |
|-----------|-------------|---------------------|--------------------------------|---------------------|-------------------------|-----------------------|-------------------|---------------------|--------------------------------|---------------|
| 42060A    | ✓           | HD 208835           | 21 53.9                        | +46 23              | 17 47                   | 19 13                 | 00 21 E           | +45° 50'            | FE ARC<br>ND. 1.10             | 14/4-1        |
| 4206091   |             | spot cal for plate  | 42060-62                       |                     |                         |                       | 15mm @ 15Volts    | D4<br>3900          | D3<br>4300                     | D2<br>4810    |
| 4206092   |             | strip cal for plate | 42060-62                       |                     |                         |                       | 90sec             |                     |                                |               |
| 42061     |             | HD 217695           | 22 <sup>h</sup> 57.4           | +47° 24'            | 19 17                   | 21 27                 | 00 50 W           | +47° 56             | FE ARC<br>ND. 1.10             | 14-14-1       |
| 42062     |             | HD 222107 (X AND)   | 23 <sup>h</sup> 32.7           | +45° 55             | 21.35                   | 22 03                 | 00 49 W           | +46° 24             | FE ARC<br>ND. 1.10             | 15-15-1       |
| 42063     |             | HD 4502 (S AND)     | 0 <sup>h</sup> 42.2            | +23° 43'            | 22 12                   | 22 48                 | 00 25 W           | +24:15              | FE ARC<br>ND. 1.1              | 15-15-1       |
| 4206371   |             | spot cal for plate  | 42063-65,                      |                     |                         |                       | 15mm @ 15Volts    | D4<br>3900          | D3<br>4300                     | D2<br>4810    |
| 4206372   |             | strip cal for plate | 42063-65,                      |                     |                         |                       | 90sec             |                     |                                |               |
| 42064     |             | HD 17330            | 02 41.8                        | +29 17              | 22 56                   | 00 09                 | 00 13 E           | +29° 41             | FE ARC<br>ND. 1.1              | 14-14-1       |
| 42065     |             | HD 22860            | 03 35.2                        | +28 33              | 00 12                   | 02 18                 | 01 02 W           | +28° 44             | FE ARC<br>ND. 1.1              | 15-15-1       |
| 42066     |             | <del>HD 38817</del> | <del>05<sup>h</sup> 43.4</del> | <del>+43° 59</del>  | <del>02 27</del>        | <del>03 05</del>      |                   | <del>+44° 05'</del> | <del>FE ARC<br/>ND. 1.10</del> | <del>14</del> |



Spectr. Temp. ... 48°F .....

Dome Temp./Hum. ... 09°C 70%

Transparency Conditions ... some thin cirrus clouds  
around 172

Focus ..... 50R .....

Spectr. Temp. ... 47°F .....

Dome Temp./Hum. ... 5°C 90%

| Comparison<br>Type/Filter Exp  | Exp. Mtr.      | Seeing | Ptg.<br>Mag. | Sp.               | Inst. | Grating/<br>Tilt | Slit | Emulsion                | P.H. | Program    | Remarks                                   | Quality |
|--|----------------|--------|--------------|-------------------|-------|------------------|------|-------------------------|------|------------|---|---------|
| FE ARC<br>ND 110<br>P3 DL<br>1300                                      | 400/150        | 2      | 7.39         | A0                | G-12  | G-12/490         | 13/5 | IIa0-E                  | A    | Ap MR      |   | fine    |
|  |                |        |              |                   |       |                  |      | IIa0-E                  |      |            |   |         |
|  |                |        |              |                   |       |                  |      | IIa0-E                  |      |            |   |         |
| FE ARC<br>ND 110<br>FE ARC<br>ND 110<br>FE ARC<br>ND 110<br>D2<br>4810 | 400/150        |        | 7.50         | A0                | G-12  | G-12/490         | 13/5 | IIa0-E                  | B    | Ap-MR      | CLOUD                                     | fine    |
|  | 200/127        |        | 3.75         | <del>III-IV</del> | G-12  | G-12/490         | 9/5  | IIa0-E                  | A    | H+k Bin-Ly |   |         |
|  | 200/150        |        | 4.06         | K1 IIIp           | G-12  | G-12/490         | 9/5  | IIa0-E                  | B    | "          |   | fine    |
|  |                |        |              |                   |       |                  |      | IIa0-E                  |      |            | exposed Box 02 for<br>4x5 plates overflow |         |
|  |                |        |              |                   |       |                  |      | IIa0-E                  |      |            |   |         |
| FE ARC<br>ND 110<br>FE ARC<br>ND 110<br>FE ARC<br>ND 110               | 100/150        |        | 7.77         | B9                | G12   | G12/490          | 13/5 | IIa0-E                  | A    | Ap-MR      |   | fine    |
|  | 40/150         |        | 6.87         | B9                | G12   | G12/490          | 9/5  | IIa0-E                  | B    | "          | CLOUD                                     | fine    |
|  | <del>400</del> |        | 7.51         | A1                | G-12  | G-12/490         | 13/5 | IIa0-E                  | A    | Am-MR      | CLOUD!!                                   |         |
|  |                |        |              |                   |       |                  |      | 20 158<br>21 190        |      |            |   |         |
|  |                |        |              |                   |       |                  |      | 7 <sup>m</sup> D19 68°F |      |            |   |         |





Spectr. Temp. 52°F

Dome Temp./Hum. 10°C 95%

Transparency Conditions *lozy* 174

Focus 40-R

Spectr. Temp. 50°F

Dome Temp./Hum. 100%

| Comparison<br>Type/Filter Exp         | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp. | Inst.  | Grating/<br>Tilt | Slit  | Emulsion | P.H. | Program | Remarks                 | Quality |
|---------------------------------------|-----------|--------|--------------|-----|--------|------------------|-------|----------|------|---------|-------------------------|---------|
| FE 41-17<br>MB 41<br>DS 52<br>TD 4810 | 400/151   |        | 7.6          | A0  | G12    | G12/490          | 13/.5 | IIa0E    | A    | Am MR   |                         | fine    |
|                                       |           |        |              |     |        |                  |       | IIa0E    |      |         |                         |         |
|                                       |           |        |              |     |        |                  |       | IIa0-E   |      |         |                         |         |
| FE 41<br>JD 110 15-75                 | 400/150   | 2-3    | 6.61         | A0  | G-12   | G12/490          | 9/.5  | IIa0E    | B    | Ap - MR |                         | fine    |
| " 15-11                               | 400/150   |        | 7.51         | A1  | "      | "                | 13/.5 | IIa0-E   | A    | Am - MR |                         |         |
| " 15-E                                | 400/120   | 3-4    | 6.75         | A   | "      | "                | 9/.5  | "        | B    | Ap - MR | BROKEN 3 PIFCES<br>DAWN | vsl wk  |
|                                       |           |        |              |     |        |                  |       |          |      |         |                         |         |
|                                       |           |        |              |     | 7" D19 | 68°F             | .20   | 1.76     |      |         |                         |         |





3/107  
-13/07

Spectr. Temp.  $53^{\circ}\text{F}$ .....

Dome Temp./Hum.  $54^{\circ}\text{F} / 99.7$

Transparency Conditions *Thin-Thick Cloud* <sup>(76)</sup>

Focus  $40-R$ .....

Spectr. Temp.  $54.9^{\circ}\text{F}$ .....

Dome Temp./Hum.  $52^{\circ} / 100+$

| Comparison Type/Filter Exp | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst. | Grating/Tilt | Slit   | Emulsion | P.H. | Program       | Remarks                         | Quality |
|----------------------------|-----------|--------|-----------|------|-------|--------------|--------|----------|------|---------------|---------------------------------|---------|
| Fe Arc N.I.I               | 100/150   | 2"     | 4.2       | Gopt | G12   | G12/.490     | 9/5    | IIa0-e   | A    | Cephed/Evalso |                                 | fine    |
| Fe Arc N.I.I               | 100/77    | 2"     | 5.8       | G5Vp | G12   | G12/.490     | 13/5   | IIa0-e   | B    | Asm-Sp/KIC    |                                 | black   |
|                            |           |        |           |      |       |              |        | IIa0-e   |      |               |                                 |         |
| Fe Arc N.I.I               | 100/260   |        | 1.9       | AOV  | G24   | G12/.490     | 13/5   | HSI      | A    | Asm-Sp/KK     | Wr 8 filter                     | sl wk   |
| Fe Arc N.I.I               | 200/300   |        | 1.9       | AOV  | G12   | G12/.490     | 13/5   | IIIJ     | B    | "             | garded on east IR part of image | fine    |
| Fe Arc N.I.I               | 40/60     |        | "         | "    | G12   | G12/.490     | 9/5    | IIIJ     | A    | "             |                                 | vsl wk  |
|                            |           |        |           |      |       |              |        |          |      |               |                                 | ok      |
| Fe Arc N.I.I               | 40/270    |        |           |      | G24   | "            | 13/1.2 | HSI      | B    | Test          | Wr 8                            | vsl wk  |
| Fe Arc N.I.I               | 40/60     | 1-2'   | 3.2       | A5   | G12   | "            | 13/5   | IIIJ     | A    | Asm-Sp/KK     |                                 | sl wk   |
|                            |           |        |           |      |       | IIIJ 5"      |        | .17 2.58 |      |               |                                 |         |
|                            |           |        |           |      |       | IIa0 6 1/2"  |        | .20 1.86 |      |               |                                 |         |
|                            |           |        |           |      |       | HSI 10"      |        |          |      |               |                                 |         |

\* Spectrum reversed due to Sabattier effect from red sunlight — hence plate is 098?

(77) Big Fireball reported during Afternoon @ 2:45 PM E → W

We may have seen "remnant cloud" in SW at Sundown.

Emulsion Batches:

Il.D.c. 20077-02117

Date Nov. 4-5... Fri-Sat... Observers Bln.-T.n.-Pg.....

(Taurid Meteor Shower Max)

| 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.     |
| 42077     | HD 191610              | 20 05 43     | +36° 33'            | 17:36                   | 17 58                 | 0 28 W            | +36° 56'    | Fe Arc<br>ND 110 | 14-28    |
| 42077T    | Spot Cols for 42077-61 |              |                     |                         | 15 min @ 15V          | D4<br>3900        | D3<br>4300  | D2<br>4810       |          |
| 42078     | HD 209975              | 22 02.1      | + 61 48             | 18 06                   | 18 30                 | 0 57 E            | +62 17      | Fe Arc<br>ND 110 | 13-13-13 |
| 42079     | "                      | "            | "                   | 18 33                   | 19 10                 |                   | "           | "                | 13-13-13 |
| 42080     | "                      | "            | "                   | 18 11                   | 20 23                 | 0 58 W            | "           | "                | 13-13-13 |
| 42081     | HD 27192               | 04 12.6      | +50 41              | 22 57                   | 00 07*                | 01 32 E           | +50 59      | Fe Arc<br>ND 110 | 14-14-14 |

Spectr. T.

Focus...

Spectr. T.

Exp. Mtr.

80/42

200/102

200/95

200/103

200/74



Spectr. Temp. 30-R 57°FDome Temp./Hum. 55°F / 88%Transparency Conditions Clearing From N. 178Focus 57°F 30-RThen cloud from SSpectr. Temp. 51°FDome Temp./Hum. 47°F / 80%

| Comparison<br>Type/Filter | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.   | Inst.<br><i>Disp</i> | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program     | Remarks                                    | Quality |
|---------------------------|-----------|--------|--------------|-------|----------------------|------------------|------|----------|------|-------------|--|---------|
| Fe Ar<br>10/10<br>19-20   | 80/42     | 3-5    | 4.82         | B332e | G12                  | G12/0.49B        | 13/9 | IIaD-e   | A    | Sp. Bin-Blu |  | fine    |
| Fe Ar<br>10/10<br>13-13   | 200/102   | 3"     | 5.19         | 09516 | G12                  | G12/0.49B        | 18/9 | IIaD-e   | B    | Cyg A-1 std |  | fine    |
| "<br>13-13                | 200/95    | "      | "            | "     | "                    | "                | "    | "        | A    | "           | cloud                                      | fine    |
| "<br>13-13                | 200/103   | "      | "            | "     | "                    | "                | "    | "        | B    | "           |  | fine    |
| Fe Ar<br>10/10<br>13-13   | 200/79    | 2-3    | 5.50         | B210  | "                    | "                | 13/9 | "        | A    | SB2-1/2     | *Est of realistic end!<br>thin cloud-thick | vsl wh  |
|                           |           |        |              |       | 6 1/2" Dig 69°F      |                  |      |          |      |             |  |         |

179

Sun / Mon

Date Nov 13/14 1977 Observers AK - Lg - Tm

Emulsion Batches:

\* Du0-e 20077-02117

H.S.I.

UaJ-e 01126-13107

IIa0-e 20077-31107

099-20097-09.1.17

| 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.     |
| 42082     | HD 215182                  | 22 38.3      | +29 42              | 17:38                   | 17:50                 | 01 38E            | +30 13        | Fe Arc<br>no filter | 10-10-10 |
| 42083     | "                          | "            | "                   | 18:03                   | 18:11                 | 01 17E            | "             | Fe Arc<br>ND        | 13-13-1  |
| 42083T    | Spot Calc for 42083-84, 86 |              |                     | 15 min @                | D4<br>15V 3900        | D3<br>4300        | D2<br>4810    |                     |          |
| 42084     | HD 222107 (λ AND)          | 23 32.7      | +45 55              | 18 23                   | 18 50                 | 01 31 E           | +46 26        | Fe Arc<br>ND-11     | 20-20-20 |
| 42085     | "                          | "            | "                   | 18 57                   | 19:13                 | 01 08 E           | "             | Fe Arc<br>none      | 5-5-5    |
| 42086     | "                          | "            | "                   | 19:21                   | 19 52                 | 00 29 E           | "             | Fe Arc<br>ND 110    | 15-15-15 |
| 42086T    | Spot Calc for 42085        |              |                     | 15 min @                | 15V D3<br>4810        | 7V D1<br>H2       | 7V D2<br>5450 |                     |          |
| 42087     | HD 4502 (λ AND)            | 00 42.0      | +23° 43'            | 20:00                   | 20 36                 | 00 55 E           | +24 13        | Fe Arc<br>ND 110    | 15-15-15 |
| 42087T    | Spot Calc for 42087, 91    |              |                     | 15 min @                | D4<br>15V 3900        | D3<br>4300        | D2<br>4810    |                     |          |
| 42088     | HD 222107                  | 23 32.7      | +45 55              | 20:41                   | 21:10                 | 00 47 W           | +46 36        | Fe Arc<br>none      | 10-10-10 |
| 42089     | HD 1326                    | 0 12.7       | +43 27              | 21:19                   | 22:03                 | 01 03 W           | +43 58        | Fe Arc<br>ND 110    | 10-10-10 |
| 42090     | HD 1326                    | "            | "                   | 22:07                   | 22:55                 | 01 55 W           | "             | "                   | 0-10-10  |
| 42091     | HD 6582                    | 01 01.6      | +54 26              | 23:04                   | 0:25                  | 02 33 W           | +54 54        | Fe Arc<br>ND 110    | 13-13-13 |
| 42092     | HD 37468                   | 05 33.7      | -2° 39'             | 00:33                   | 01:43                 | 00 39 E           | -2° 31'       | Fe Arc<br>none      | 7-7-7    |
| 42092T    | Spot Calc for 42092        |              |                     | 15 min @                | D4<br>15V 4100        | D4<br>4300        | D4<br>4810    |                     |          |



Spectr. Temp. 32°F

Dome Temp./Hum. 30°F/65%

Transparency Conditions scattered clouds 180.

Focus 80-R

hazy?

Spectr. Temp.

Dome Temp./Hum.

| Comparison Type/Filter | Exp | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.       | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program     | Remarks           | Quality                          |
|------------------------|-----|-----------|--------|-----------|-----------|-------|--------------|------|----------|------|-------------|-------------------|----------------------------------|
|                        |     | 80/102    | 2"-3"  | 3.8       | G8 II + F | G24   | G12/.49 B    | 13/5 | HSI      | A    | Asm-Sp KK   | Written #4 in     | fine                             |
|                        |     | 80/70     | "      | 1         | "         | G8    | G16/.25 B    | 13/5 | IIa0e    | B    | "           | Try tilt = .2 B   | fine                             |
|                        |     |           |        |           |           |       |              |      | IIa0e    | A    |             |                   |                                  |
|                        |     | 80/55     | 3'     | V= 3.75   | G8 II     | G8    | G88/-25 B    | 9/5  | IIa0e    | A    | H&K Bin-2y  |                   | fine                             |
|                        |     | 80/36     | 3"     | "         | "         | G16   | G16R/4.7 B   | 9/5  | 098-02c  | B    | "           | high fog          |                                  |
|                        |     | 80/66     | 3"     | "         | "         | G12   | G12/.49      | 9/5  | IIa0e    | A    | "           |                   | fine                             |
|                        |     |           |        |           |           |       |              |      | 098-02c  |      |             | highly            | fine                             |
|                        |     | 80/70     | 2-3"   | V= 4.0    | K III     | G12   | G12/.49      | 9/5  | IIa0e*   | B    |             |                   |                                  |
|                        |     |           |        |           |           |       |              |      | "        |      |             |                   |                                  |
|                        |     |           |        |           |           |       |              |      |          |      |             | placed in HSI Box |                                  |
|                        |     | 80/101    | 2"     | V= 3.75   | G8 III    | G24   | G12/.49      | 13/4 | HSI      | A    | "           | Written #4        |                                  |
|                        |     | 80/40     | 2'-3"  | V= 8.1    | MIV       | G65   | G43/.49      | 13/5 | 098-02   | B    | Asm-Sp KK   | Written #4        | fuzzy!                           |
|                        |     | 80/15     | "      | "         | "         | "     | "            | "    | "        | A    | "           | "                 | high fog<br>completely<br>fuzzy! |
|                        |     | 100/300   | 3"     | 8-581     | G5 Vp     | G12   | G12/.49      | 13/5 | IIa0e*   | B    |             | Cloud             | d sm                             |
|                        |     | 100/250   | 2"     | 3.51      | 09.5 B    | G12   | G12/.49      | 13/5 | III d JE | A    | Sp. Bin-Blu | Cloud             |                                  |
|                        |     |           |        |           |           |       |              |      | III d JE |      |             |                   |                                  |

181

Emulsion Batches:

Date .. Nov. 14 .. 77 ..... Observers .....

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

| 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.  |
| A2092 F1  | Focus test |              |                     |                         |                       |                   |             | Ferr        | 10    |
| F2        |            |              |                     |                         |                       |                   |             | "           | 20-20 |
| F3        |            |              |                     |                         |                       |                   |             | "           | 20-20 |
| F4        |            |              |                     |                         |                       |                   |             | "           | 10    |
|           |            |              |                     |                         |                       |                   |             |             |       |
|           |            |              |                     |                         |                       |                   |             |             |       |
|           |            |              |                     |                         |                       |                   |             |             |       |
|           |            |              |                     |                         |                       |                   |             |             |       |
|           |            |              |                     |                         |                       |                   |             |             |       |
|           |            |              |                     |                         |                       |                   |             |             |       |
|           |            |              |                     |                         |                       |                   |             |             |       |
|           |            |              |                     |                         |                       |                   |             |             |       |
|           |            |              |                     |                         |                       |                   |             |             |       |
|           |            |              |                     |                         |                       |                   |             |             |       |
|           |            |              |                     |                         |                       |                   |             |             |       |
|           |            |              |                     |                         |                       |                   |             |             |       |
|           |            |              |                     |                         |                       |                   |             |             |       |
|           |            |              |                     |                         |                       |                   |             |             |       |

Spectr. T  
 Focus...  
 Spectr. T  
 Exp. Mtr.



Spectr. Temp.  $32^{\circ}F$ 

Dome Temp./Hum. ....

Transparency Conditions ..... 192

Focus  $80R$ 

Spectr. Temp. ....

Dome Temp./Hum. ....

| Comparison Type/Filter Exp | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt                | Slit | Emulsion | P.H.       | Program | Remarks               | Quality                |
|----------------------------|-----------|--------|-----------|-----|-------|-----------------------------|------|----------|------------|---------|-----------------------|------------------------|
| F 10                       |           |        |           |     | G65   | G43/.49                     |      | IIaF     | B          |         | Written 4 in beam     | 5 fuzzy center no blue |
| " 20-20                    |           |        |           |     | v     | "                           |      | "        | "          |         | "                     | "                      |
| " 20-20                    |           |        |           |     | v     | "                           |      | "        | "          |         | Written 8 before slit | "                      |
| " 19                       |           |        |           |     | "     | "                           |      | "        | "          |         | "                     | sharp                  |
|                            |           |        |           |     |       | HST 10 <sup>m</sup> 690     |      |          |            |         |                       |                        |
|                            |           |        |           |     |       | IIa0 6 1/2 <sup>m</sup> 680 |      |          | 20 190 new |         |                       |                        |
|                            |           |        |           |     |       | IIaJ 5 <sup>m</sup> 680     |      |          | 21 177 old |         |                       |                        |
|                            |           |        |           |     |       | IIaF 5 <sup>m</sup> 680     |      |          | 18 257     |         |                       |                        |
|                            |           |        |           |     |       | 098 5 <sup>m</sup> 680      |      |          | .20        |         |                       |                        |
|                            |           |        |           |     |       |                             |      |          | 37 194     |         |                       |                        |





Spectr. Temp. ....

Dome Temp./Hum. <sup>9</sup>  
42°F / 97%

Transparency Conditions ..... 184.

Focus .....

Spectr. Temp. ....

Dome Temp./Hum. ....

| Comparison<br>Type/Filter | Exp. | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp. | Inst. | Grating/<br>Tilt | Slit | Emulsion              | P.H. | Program | Remarks | Quality |
|---------------------------|------|-----------|--------|--------------|-----|-------|------------------|------|-----------------------|------|---------|---------|---------|
|                           |      |           |        |              |     |       |                  |      | I <sub>125</sub> -e   |      |         |         | strong  |
|                           |      |           |        |              |     |       |                  |      | III <sub>125</sub> -e |      |         | #3.     |         |
|                           |      |           |        |              |     |       |                  |      | III <sub>125</sub> -e |      |         | #4      | good    |
|                           |      |           |        |              |     |       |                  |      | I <sub>125</sub> -e   |      |         |         |         |
|                           |      |           |        |              |     |       |                  |      | III <sub>125</sub> -e |      |         |         | strong  |
|                           |      |           |        |              |     |       |                  |      | I <sub>125</sub> -e   |      |         |         |         |
|                           |      |           |        |              |     |       |                  |      |                       |      |         |         |         |
|                           |      |           |        |              |     |       |                  |      |                       |      |         |         |         |
|                           |      |           |        |              |     |       |                  |      |                       |      |         |         |         |
|                           |      |           |        |              |     |       |                  |      |                       |      |         |         |         |
|                           |      |           |        |              |     |       |                  |      |                       |      |         |         |         |
|                           |      |           |        |              |     |       |                  |      |                       |      |         |         |         |
|                           |      |           |        |              |     |       |                  |      |                       |      |         |         |         |
|                           |      |           |        |              |     |       |                  |      |                       |      |         |         |         |
|                           |      |           |        |              |     |       |                  |      |                       |      |         |         |         |
|                           |      |           |        |              |     |       |                  |      |                       |      |         |         |         |
|                           |      |           |        |              |     |       |                  |      |                       |      |         |         |         |
|                           |      |           |        |              |     |       |                  |      |                       |      |         |         |         |
|                           |      |           |        |              |     |       |                  |      |                       |      |         |         |         |
|                           |      |           |        |              |     |       |                  |      |                       |      |         |         |         |
|                           |      |           |        |              |     |       |                  |      |                       |      |         |         |         |

5<sup>m</sup> Dig 68°F

185

Emulsion Batches:

Date NOV 17/18. THUR/FRI. Observers *Bwt-Ri*

| 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.  |
|-----------|---------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| 42093     | HD 21142            | 03 19.7      | +12 09              | 23 00                   | 00 26                 | 00 33 W           | +12 27'     | FE ARC<br>ND 1.1          | 14-28 |
| 4209371   | expt cal for plate  | 42013        |                     |                         | 15 min @ 1500         | D4<br>3500        | D3<br>4500  | D2<br>4810                |       |
| 4209372   | strip cal for plate | 42053        |                     |                         | 90 sec                |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |
|           |                     |              |                     |                         |                       |                   |             |                           |       |

Spectr. T  
Focus ...  
Spectr. T  
Exp. Mtr.

400/56





187

Date NOV 19/20, 1977 Sat/Sun Observers Za-ki

127 Emulsion Batches:  
J.Fe. 00095-21107.  
J.Fe.

| 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.       |
| 42094     | HD 19356 (B Per)             | 03 <sup>h</sup> 01 <sup>m</sup> 40 <sup>s</sup> | +40° 34'            | 01 01                   | 01 35                 | 2 07W             | +40° 57'    | Fe arc<br>UV filter | 9-9-9      |
| 42095     | "                            | "   | "                   | 01 47                   | 02 23                 | 2 54W             | "           |                     | 9-9-9      |
| 42095T1   | spot cal for plates 42094-95 |   |                     |                         |                       | 15 min 7.8V       | D7<br>51W   | D2<br>Hd            | P3<br>5450 |
|           |                              |   |                     | 02 25                   |                       |                   |             | Fe arc<br>no filter | 5          |

Spectr. T.

Focus...

Spectr. T.

Exp. Mtr.

49/203

40/200

49/



Spectr. Temp.  $38^{\circ}F$  ..... Dome Temp./Hum.  $1^{\circ}C$  98% ..... Transparency Conditions ..... 188

Focus  $70R$  .....

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

| Comparison Type/Filter Exp | Exp. Mtr.      | Seeing | Ptg. Mag. | Sp. | Inst.              | Grating/Tilt | Slit   | Emulsion          | P.H.         | Program | Remarks               | Quality |
|----------------------------|----------------|--------|-----------|-----|--------------------|--------------|--------|-------------------|--------------|---------|-----------------------|---------|
| ears 9.9                   | 40/203         | 2-3"   | 2.2v      | B8V | G16 R              | G16/700      | 9/9    | Ilaf-c            | A            | Slip-Ed | UVFILTER IN           | fine.   |
| 9.9                        | 40/208         | "      | "         | "   | "                  | "            | "      | "                 | B            | "       | BROKEN 2 PIECES       | fine    |
| 2 P3 450                   |                |        |           |     |                    |              |        | Ilaf-E            |              |         |                       | broken  |
| ears 5                     | <del>40/</del> |        |           |     |                    |              |        | <del>Ilaf-E</del> | <del>A</del> |         | <del>clouded in</del> |         |
|                            |                |        |           |     | 5 <sup>m</sup> D19 | 68°F         | 26 269 |                   |              |         |                       |         |

189

Date *Mar. Univ. Nov. 21-22 1977* Observers *B&T-R1-Cy*

Emulsion Batches:

*J1a0.F* .....

| 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.       |
|------------------|----------------------|--------------------------------|-------------------------------|-------------------------|-----------------------|-----------------------------------|-------------|---------------------------|------------|
| 42096            | HD 217695            | 22 <sup>h</sup> 57.4           | +47° 24'                      | 17:27                   | 20:09                 | 00 <sup>h</sup> 54 <sup>m</sup> W | +47° 55'    | Fe APC<br>N.O. 1.10       | 14-14-14   |
| 4209671          | spot cal for plates  | 42096-98                       |                               |                         |                       | 15 min @ 15V <sub>1/2</sub>       | D4<br>3900  | D3<br>4300                | D2<br>4210 |
| 42097            | HD 17330             | 02 <sup>h</sup> 41.8           | +29° 17'                      | 20:16                   | 22:23                 | 00 <sup>h</sup> 36 <sup>m</sup> E | +29° 38'    | Fe APC<br>N.O. 1.10       | 14-14-14   |
| 4209711          | strip cal for plates | 42096-98                       |                               |                         |                       | 90 sec                            |             |                           |            |
| 42098            | HD 21142             | 03 <sup>h</sup> 19.7           | +12° 09'                      | 20:31                   | 02:19                 | 02 <sup>h</sup> 42 <sup>m</sup> W | +12° 29'    | Fe APC<br>N.O. 1.10       | 14-14-14   |
| <del>42099</del> | <del>HD 47256</del>  | <del>06<sup>h</sup> 32.6</del> | <del>12<sup>h</sup> 53'</del> | <del>02:36</del>        |                       |                                   |             | "                         | 14         |

Spectr. T

Focus ...

Spectr. T

Exp. Mtr.

40/150

40/151

40/111



Spectr. Temp. ... 4.6°F

Dome Temp./Hum. ... 6°C / 69%

Transparency Conditions ... Cirrus 190

Focus ... 60R

Spectr. Temp. ... 35°F

Dome Temp./Hum. ... 0°

| Comparison<br>Type/Filter | Exp.   | Exp. Mtr.          | Seeing        | Ptg.<br>Mag.    | Sp.           | Inst.          | Grating/<br>Tilt     | Slit         | Emulsion           | P.H. | Program          | Remarks                | Quality |
|---------------------------|--------|--------------------|---------------|-----------------|---------------|----------------|----------------------|--------------|--------------------|------|------------------|------------------------|---------|
| Fe AR<br>ND 140           | 14-140 | 100/150            | 5"            | 7.50            | A0            | G-12           | G <sup>12</sup> /490 | 13/5         | II <sub>0</sub> -E | A    | Ap-MR            |                        | fine    |
| Fe AR<br>ND 110           | 11-110 | 100/151            |               | 7.17            | B9            | G-12           | G <sup>12</sup> /490 | 13/5         | II <sub>0</sub> -E | B    | Ap-MR            |                        | fine    |
| Fe AR<br>ND 110           | 14-110 | 100/142            | 5"-10"        | 7.60            | A0            | G-12           | G <sup>12</sup> /490 | 13/5         | II <sub>0</sub> -E | A    | Am-MR            | CLOUD                  | fine    |
|                           | 14     | <del>100/142</del> | <del>1"</del> | <del>7.26</del> | <del>A7</del> | <del>G12</del> | <del>"</del>         | <del>"</del> | <del>"</del>       |      | <del>Am-MR</del> | <del>MUCH CLOUD.</del> |         |
|                           |        |                    |               |                 |               | 6 1/2"         | D19                  | 68°F         | 20                 | 172  |                  |                        |         |

191

+G, Group ~ 20 persons look at the moon ~ 1 hr.

Emulsion Batches:

H&E 20077-22117  
H&E 10126-17117

Date 22/23 Nov. 1977. TV-W. Observers ZD-Pi

| 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.         |
| 42099     | HD 14633                       | 02 16.7                        | +41 02                        | 00:13                   | 01:42                 | 3 <sup>h</sup> 10 <sup>m</sup> W | +41 26      | Feare<br>N.D. 1.1           | 14-14-1      |
| 4209991   | opt cal for plates 42099-102   |                                |                               |                         | 15 min @ 152Vatts     |                                  | D4<br>3900  | D3<br>4300                  | D2<br>4810   |
| 4209992   | strip cal for plates 42099-102 |                                |                               |                         | 90 sec                |                                  |             |                             |              |
| 42100     | HD 33328 (λ Eri)               | 05 4.4                         | -8 53                         | 01:46                   | 02:34                 | 1 <sup>h</sup> 15 <sup>m</sup> W | -8 41       | Feare<br>no filter          | 7-7-         |
| 4210091   | opt cal for plates 42100-101   |                                |                               |                         | 15 min @ 152Vatts     |                                  | D4<br>4100  | D4<br>4300                  | D4<br>4810   |
| 42101     | HD 37468 (σ Orias)             | 05 33.7                        | -2 39                         | 02:40                   | 03:09                 | 1 23 W                           | -2 31       | Feare<br>no filter          | 7-7-7        |
| 4210111   | strip cal for plates 42100-101 |                                |                               |                         | 180 sec               |                                  |             |                             |              |
| 42102     | HD 34364 = AR Aur              | 05 11.8                        | +33 39                        | 03:15                   | 03:58                 | 2 32 W                           | +33 50      | Feare<br>N.D. 1.1           | 14-14-1      |
|           | <del>HD 86590</del>            | <del>09<sup>h</sup> 54.5</del> | <del>+25<sup>o</sup> 02</del> | <del>04:06</del>        |                       |                                  |             | <del>Feare<br/>NORICK</del> | <del>4</del> |



Spectr. Temp.  $38^{\circ}\text{F}$  ..... Dome Temp./Hum.  $41^{\circ}\text{C}/90\%$  Transparency Conditions *good* ..... 192

Focus  $70\text{R}$  .....

Spectr. Temp.  $35^{\circ}\text{F}$  ..... Dome Temp./Hum.  $-1^{\circ}\text{C}/91\%$

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.   | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program    | Remarks | Quality  |
|-----------|--------|-----------|-------|-------|--------------|------|----------|------|------------|---------|----------|
| 400/150   | 2-3    | 7.26      | 08V   | G12   | G12/490      | 13/5 | IIa0-E   | A    | Sp Bin-Bln |         | fine     |
|           |        |           |       |       |              |      | IIa0E    |      |            |         |          |
|           |        |           |       |       |              |      | IIa0-E   |      |            |         |          |
| 200/252   | 2-3    | 4.07      | B2V   | G12   | G12/490      | 13/5 | IIIaJ-E  | B    | Sp Bin-Bln | clouds  | v sl wk  |
|           |        |           |       |       |              |      | IIIaJ-E  |      |            |         |          |
| 200/251   | 2-3    | 3.51      | 09.5V | G12   | G12/490      | 13/5 | IIIaJ-E  | A    | Sp Bin-Bln |         | fine     |
|           |        |           |       |       |              |      | IIIaJ-E  |      |            |         | fine     |
| 100/151   | 2-3    | 5.42      | Ap    | G12   | G12/490      | 13/5 | IIa0-E   | B    | Ec1-Bi-Bln |         | fine     |
| 200/      |        | 7.91      | 08.5  | G-16  | G16/700      | 13/3 | 058-02-E | A    | Sp Bin-Bln | clouds  | v sl str |

III 0J 5<sup>m</sup> 12 240  
 II 00 T<sup>m</sup> 20 183





Spectr. Temp. 38°F.....

Dome Temp./Hum. 35°F./87%..

Transparency Conditions... Clear by 19:30 9457g... 194

Focus..... 70-R.....

Spectr. Temp. ....

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

| Comparison<br>Type/Filter     | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.   | Inst.                   | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program | Remarks   | Quality                    |
|-------------------------------|-----------|--------|--------------|-------|-------------------------|------------------|------|----------|------|---------|---|----------------------------|
| e Arc<br>10/10<br>15-15-      | 200/170   | 2-3    | V=<br>3.75   | G8II  | G12B                    | G12/0.49B        | 9/15 | IIa0-e   | A    | H&K Bin | cloud - cloud   |                            |
| 0<br>10 Arc<br>10/10<br>5-5-5 | 200/83    |        | V=<br>3.75   | G8III | G16R                    | G16/0.7B         | 9/15 | 09802e   | B    | H&K Bin | cloud (Grating win. Jemmel Config)<br>Freed when going to -.25B | VSI STR                    |
| Fe Arc<br>10/10<br>80-20      | 200/150   |        | V=<br>3.75   | G8II  | G8B                     | G16/-.25B        | 9/15 | IIa0-e   | A    | H&K Bin |   | fine                       |
| Fe Arc<br>10/10<br>20-20      | 200/180   | 2-3    | V=<br>4.06   | K10P  | "                       | "                | "    | "        | B    | "       |   |                            |
| Fe Arc<br>10/10<br>5-5-5      | 200/65    | "      | "            | "     | G16R                    | G16/0.7B         | 9/15 | 09802e   | A    | "       | cloud   | Compare with 42104 VSI STR |
| Fe Arc<br>10/10<br>10-10      | 200/115   | 2      | V<br>4.06    | K10P  | G8B                     | G16/-.25B        | 9/15 | IIa0-e   | A    | "       | cloudy times  |                            |
|                               |           |        |              |       | 098 5 <sup>m</sup>      | D19              | 68°F | 31 210   |      |         |   |                            |
|                               |           |        |              |       | IIa0 6 1/2 <sup>m</sup> |                  |      | 19 194   |      |         |   |                            |
|                               |           |        |              |       | IIa0P 5 <sup>m</sup>    | D19              |      | 12 211   |      |         |   |                            |





Spectr. Temp. ... 27°F

Dome Temp./Hum. 28°F/80%

Transparency Conditions ... Some cloud

196

Focus ... 83R → +40R

Spectr. Temp. ....

Dome Temp./Hum. ....

| Comparison Type/Filter Exp | Exp. Mir. | Seeing | Ptg. Mag. | Sp.  | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program      | Remarks  | Quality |
|----------------------------|-----------|--------|-----------|------|-------|--------------|------|----------|------|--------------|--|---------|
| None                       | 200/116   | 3"     | 5.1       | 09.5 | G24   | G16B/0.385   | 18/9 | 04402    | A    | Cyg X-1 Std. | Slight cloud Focus +40R. Old Wratten #4 in +U V. | vd str  |
| None                       | 200/1     |        | 5.1       | 09.5 | G24   | G16B/0.385   | 18/9 | 044-02   | B    | Cyg X-1 Std  | <del>main cloud</del>                            |         |
|                            |           |        |           |      |       | 5" D17       | 67°F | 22,222   |      |              |  |         |

197

Tues-Wed

Date 29-30 Nov 1977 Observers B. u. T. n

Emulsion Batches: Il. a. e. 20077-28117

| 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           |
|-----------|---------------------------------|-----------|------------------|----------------------|--------------------|----------------|-----------------|--------------------------|---------------|
| 42110     | <sup>7 And</sup> HD 222107      | 23 32.7   | +45 55           | 17 18                | 18 01              | 01 12E         | +46 24          | Fe Arc ND 110            | 15-157s       |
| 42110T    | Spot cal <sub>h</sub> for 42110 |           |                  | 15 min               | @ 15V              | D4 3900        | D3 4300 D2 4810 | Fe Arc ND 110            | 15            |
|           |                                 |           |                  | <del>18 12</del>     |                    |                | <del>+</del>    | <del>Fe Arc ND 110</del> | <del>15</del> |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |
|           |                                 |           |                  |                      |                    |                |                 |                          |               |

Spectr. T  
Focus...  
Spectr. T  
Exp. Mtr.

200/117

400/



2817

Spectr. Temp. ... 32°F

Dome Temp./Hum. 30°F/72%

Transparency Conditions Hazy - Cirrus 198

Focus ... 80R down from previous 40R

Spectr. Temp. ....

Dome Temp./Hum. 30°F/90%

| Companson<br>Type/Filter Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp. | Inst. | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|------------------------------|-----------|--------|--------------|-----|-------|------------------|------|----------|------|---------|---------|---------|
| FAZ<br>D112 15-17<br>2       | 200/173   | 1.2'   | V-<br>3.75   | G80 | G12   | G12/498          | 9/5  | IIaD-e   | A    | H&K Bin |         | fine    |
| FAZ<br>D112<br>15-17         | 200/      |        |              |     |       |                  |      |          |      |         | CLOUD   |         |
|                              |           |        |              |     |       | 6 1/2" Dig       | 68°F | 17, 178  |      |         |         |         |





Spectr. Temp. ... 37°F

Dome Temp./Hum. 34°F / 78%

Transparency Conditions ... Clear for 1/2 hr 200

Focus ... 80-R

Spectr. Temp. ....

Dome Temp./Hum. ....

Comparison  
Type/Filter Exp.  
Fe 4re  
MO 1/10 20-20

| Exp. Mtr.            | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program    | Remarks                 | Quality |
|----------------------|--------|-----------|-----|-------|--------------|------|----------|------|------------|-------------------------|---------|
| 200/60               | 3"     | v= 375    | G8  | G8B   | G16/-25B     | 9/5  | Iloda    | A    | H K Bin-Ly | cloud - snow*           |         |
| → (for Dec 9/5 also) |        |           |     |       |              |      |          |      |            | *                       |         |
|                      |        |           |     |       |              |      |          |      |            | * Push both             |         |
|                      |        |           |     |       |              |      |          |      |            | 6 1/2" Dig 68°F 20, 180 |         |

29

Emulsion Batches:

III. Fe 23117-24117.

III. Fe 01126-17117.

Date

Dec 5 1/7

Observers

Z. T. / K. K. - T. Y.

| 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.    |
|-----------|----------------------------|---|---------------------|-------------------------|------------------------|--------------------|--------------------------------------|---------------------------|---------|
| 42112     | HD 19356 (B <sub>1</sub> ) | 03 <sup>h</sup> 01 <sup>m</sup> 48 <sup>s</sup> | +40° 34'            | 18:32                   | 19:05                  | 3 27 E             | +40 57.5                             | Fe Arc<br>UV/100          | 9-10-8  |
| 42113     | "                          | "   | "                   | 19:06                   | 19:40                  | 2 52 E             | +40 57.2                             | "                         | 11-1-1  |
| 42114     | "                          | "   | "                   | 19 41                   | 20:27                  | 2 05 E             | "                                    | "                         | 12-12-6 |
| 42115     | "                          | "   | "                   | 23 39                   | 00 13                  | 1 40 W             | +40 58.5                             | "                         | 12-12-6 |
| 42114T    | Spot Calc for 42112-15     |   |                     | 15 min @                | 8V <sup>D4</sup> 5100  |                    | <sup>D2</sup> H 2 <sup>D3</sup> 5450 |                           |         |
| 42116     | HD 33328 <sup>δ Eri</sup>  | 05 04.4   | -8 53               | 00 22                   | 01 21                  | 0 48 W             | -8 41                                | Fe Arc<br>None            | 8-7-7   |
| 42116T    | Spot Calc for 42116-18. 1  |   |                     | 15 min @                | 15V <sup>D4</sup> 4100 | <sup>D4</sup> 4300 | <sup>D4</sup> 4810                   |                           |         |
| 42117     | HD 47105                   | 6 31.9  | +16 29              | 01 27                   | 01 41                  | 0 22 E             | +16 32                               | Fe Arc<br>None            | 8-9-8   |
| 42118     | HD 76644                   | 8 52.4  | +48 26              | 01 50                   | 02 00                  | 0 22 E             | "                                    | "                         | 8-16    |

Spectr. T.

Focus...

Spectr. F.

Exp. Mr.

40/1953

40/230

40/27

40/250

200/200

40/90

200/36





203

SUN/MON

Date Dec. 4/5 77..... Observers hy - Tn.....

Emulsion Batches:

Ilford... 20077-2817  
 09802e 30097-2717  
 Ilford... 01126-1717

| 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.     |
|-----------|---------------------------|---------------------------------------|-----------------------------|-------------------------|---------------------------|-------------------|-------------|---------------------------|----------|
| 42119     | HD222107 $\lambda$ And    | 23 <del>32.7</del>                    | +45 55<br><del>+46 20</del> | 17 16                   | 17 53                     | 01 05E            | +46 23      | Fe Arc<br>ND 110          | 20-20-20 |
| 42119T    | Strip Calib for           | 42119, 23-24,                         |                             |                         | 90sec                     | also usable for # | 42111       |                           |          |
| 42120     | HD222107 ( $\lambda$ And) | 23 <del>32.7</del><br><del>36.4</del> | +45 55<br><del>+46 20</del> | 17 57                   | 18:17                     | 00 42E            | +46 23      | Fe Arc<br>None            | 5-5-3    |
| 42120T    | Spot Calib for            | 42120 - 22, 25-26                     |                             | 15 min @                | 15V D3<br>7V D1<br>H2     | 7V D2<br>5450     |             |                           |          |
| 42121     | HD209975 (19 Cep)         | 22 02.1                               | +61 48                      | 18:30                   | 18:52                     | 01 24W            | +62 12      | Fe Arc<br>None            | 4-4-4    |
| 42122     | "                         | "                                     | "                           | 18:56                   | 19:26                     | 01 57W            | "           | Fe Arc<br>UV              | 6-6-6    |
| 42123     | HD4582 ( $\zeta$ And)     | 00 42.0                               | +23° 43'                    | 19:38                   | 20:36                     | 00 26W            | +24 12.1    | Fe Arc<br>ND 110          | 20-20-20 |
| 42124     | HD218356 ( $\sigma$ Peg)  | 23 02.2                               | +24° 56'                    | 20:42                   | 21:33                     | 03 04W            | +25 25      | "                         | 18-18-8  |
| 42125     | HD22468 (HR1099)          | 03 31.6                               | +0° 16'                     | 22 08                   | 23:05                     | 00 06W            | +00 35.1    | Fe Arc<br>None            | 4-3-4    |
| 42126     | HD33328 ( $\lambda$ Eri)  | 05 04.4                               | -8° 53'                     | 23 09                   | 23:37                     | 00 53E            | -08 44      | Fe Arc<br>UV              | 4-4-4    |
| 42127     | "                         | "                                     | "                           | 23 40                   | 01:20                     | 00 50W            | "           | Fe Arc<br>None            | 6-6-6    |
| 42127T    | Spot Calib for            | 42127-29                              |                             | 15 min @                | 15V <sup>D4</sup><br>4100 | D4<br>4300        | D4<br>4810  |                           |          |
| 42127T2   | Strip Calib for           | 42127-29                              |                             |                         | 1:30 secs                 |                   |             |                           |          |
| 42128     | HD37468 ( $\alpha$ Ori A) | 05 33.7                               | -02 39                      | 01:22                   | 01:46                     | 00 45W            | -02 32      | Fe Arc<br>None            | 7-7-7    |
| 42129     | HD33328 ( $\lambda$ Eri)  | 05 04.4                               | -08 53                      | 01:49                   | 02 53                     | 2 22W             | -08 44      | "                         | 7-13     |



Spectr. Temp. 30°F

Dome Temp./Hum. 25°F / 65%

Transparency Conditions Excellent 204

Focus 80-R

Spectr. Temp. ....

Dome Temp./Hum. ....

| Companson<br>Type/Filter Exp. | Exp. Mtr.             | Seeing | Ptg.<br>Mag.   | Sp.     | Inst.                | Grating/<br>Tilt | Slit   | Emulsion | P.H. | Program     | Remarks                         | Quality |
|-------------------------------|-----------------------|--------|----------------|---------|----------------------|------------------|--------|----------|------|-------------|---------------------------------|---------|
| 2011                          | 200/145               | 3"     | V-<br>3.75     | G8B     | G8B                  | G16R/-25B        | 9/1.5  | II40-e   | A    | H&K Bin-Ly  |                                 | fine    |
|                               | ie developed together |        |                |         |                      |                  |        |          |      |             |                                 |         |
| 2011                          | 200/78                | 3"     | V-<br>3.75     | G8B     | G16R                 | G16R/.7B         | 9/1.5  | 09802e   | B    | "           |                                 | fine    |
|                               |                       |        |                |         |                      |                  |        | "        |      |             |                                 |         |
| 2011                          | 200/105               | 3'     | 5.1            | 09.5    | G16B                 | G24R/.38B        | 18/8   | 098-02e  | A    | CYX-1 SD    | old WRITTEN 4                   | fine    |
| 2011                          | 200/48                | "      | "              | "       | "                    | "                | "      | "        | B    | "           | WRITTEN 8 AHEAD OF SLIT<br>& Fe | v sl sd |
| 2011                          | 200/180               | 2-3    | V-<br>4.06     | K1117   | G8B                  | G8B/-25B         | 9/1.5  | II60-e   | A    | H&K Bin-Ly  |                                 |         |
| 2011                          | 200/130               | 2-3    | 6.14           | K016p   | G8B                  | G8B/-25B         | 13/1.3 | II60-e   | B    | H&K * - Ly  |                                 |         |
| 2011                          | 200/68                | "      | 6.68           | G0V     | G16R                 | G16/0.7B         | 13/1.5 | 098-02e  | A    | RSCdn - FBI |                                 | fine    |
| 2011                          | 200/105               | 2"     | 4.07           | B2IV    | "                    | "                | 13/1.5 | 098-02e  | B    | SB - Bln    | UV filter                       | fine    |
| 2011                          | 200/400               | 2-3"   | "              | "       | G12B                 | G12/0.49B        | 13/1.7 | III4J-e  | A    | "           | clear than<br>Census the clear  | v sl wk |
| 2011                          | 200/240               | 2-3"   | 3.51           | 09.5V   | G12B                 | G12/0.49B        | 13/1.5 | III0J-e  | B    | SB - Bln    |                                 | fine    |
| 2011                          | 200/87                | 3-5"   | 4.07           | B2IV    | G12B                 | G12/0.49B        | 13/1.5 | III0J-e  | A    | SB - Bln    | cloudy thick haze               | wk      |
|                               |                       | 098    | 5 <sup>m</sup> | 23, 220 | II JT 5 <sup>m</sup> | 1A 240           |        |          |      |             |                                 |         |

205

Wed films

Date Dec 7/8 1977

Observers

Rm-Ri / Hk-Ri

Emulsion Batches:

TJ2-E 20077-0412.7

098-02E 30097-0912.7

TJ2-E 10126-1911.7

| 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.     |
|-----------|------------------------------------|--------------------------------------|---------------------|-------------------------|-----------------------|---------------------|-------------|---------------------------|----------|
| 42130     | HD 220994                          | 23 <sup>h</sup> 23.0                 | +69° 49'            | 19:57                   | 20:35                 | 01 <sup>h</sup> 59W | +70° 14'    | Fe Arc<br>NO FILTER       | 7-7      |
| 42131     | HD 3712                            | 00 <sup>h</sup> 39.8 <sup>34.8</sup> | 55° 59'             | 20:42                   | 20:47                 | 00 57W              | +56 25      | Fe Arc<br>NO FILTER       | 7-7-7    |
| 42132     | HD 31910                           | 04 <sup>h</sup> 54.5                 | +60° 18'            | 20:53                   | 21:06                 | 03 06E              | +60 26      | "                         | 7-7-7    |
| 42133     | HD 22468                           | 03 <sup>h</sup> 31.6                 | +0° 16'             | 21:41                   | 22:51                 | 03 05W              | +00 33      | Fe Arc                    | 4-4-4    |
| 421331    | strip cal for plates 42130-32      |                                      |                     |                         | 90 sec                |                     |             |                           |          |
| 42134     | HD 33328                           | 05 <sup>h</sup> 04.4                 | -8° 53'             | 22:58                   | 00:11                 | 00 06E              | -08° 44'    | Fe Arc<br>NO FILTER       | 7-7-7    |
| 421341    | strip cal for plates 42134-37, 40. |                                      |                     |                         | 180 sec               |                     |             |                           |          |
| 42135     | HD 37468 (50.1 AB)                 | 05 <sup>h</sup> 33.7                 | +02° 39'            | 00:18                   | 00:47                 | 00 00               | -02° 32'    | Fe Arc<br>NO FILTER       | 7-7-7    |
| 42136     | HD 47105                           | 06 31.9                              | +16 29              | 00:52                   | 01:03                 | ?                   |             | "                         | 7-7-7    |
| 42137     | HD 76644                           | 08 52.4                              | +48 26              | 01:09                   | 01:25                 | 02 41 E             |             | "                         | 7-7-7    |
| 42138     | F5° 7668                           | 07 22                                | +5 15               | 02:09                   | 04 31                 | 02 00 W             |             | Fe Arc<br>NO FILTER       | 10-10-10 |
| 421381    | spot cal for plates 42133, 38      |                                      |                     |                         | 15 min                | 150 D3<br>4810      | 70 D1       | NO FILTER                 | 7-7-7    |
| 421382    | spot cal for plates 42134-38       |                                      |                     |                         | 15 min @ 152 D3       | D4<br>4100          | D4<br>4301  | NO FILTER                 | 7-7-7    |
| 42139     | HD 124752                          | 14 10.3                              | +68 03              | 04:50                   | 06:05                 | 03 14 E             |             | Fe Arc<br>NO FILTER       | 10-10-10 |
| 421391    | spot cal for plates 42130-32       |                                      |                     |                         | 15 min @ 152 D3       | D1<br>3900          | D3<br>4300  | NO FILTER                 | 7-7-7    |
| 42140     | HD 121370                          | 13 49.9                              | +18° 54'            | 06:21                   | ?                     | ?                   | +18°        | Fe Arc<br>NO FILTER       | 7        |



Spectr. Temp. ... 22°F ..... Dome Temp./Hum. ... -09°C 87% Transparency Conditions ..... 208  
 Focus ..... 1.0 R .....  
 Spectr. Temp. .... Dome Temp./Hum. ... -12°C 98%  
 III 21 5m 14244  
 new developer 098 J D17 65P  
 II 00 6 1/2"

| Comparison<br>pe/Filter Exp. | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.    | Inst. | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program    | Remarks  | Quality            |
|------------------------------|-----------|--------|--------------|--------|-------|------------------|------|----------|------|------------|--|--------------------|
| APC 7-7-77                   | 400/158   |        | 5.50         | AG III | G146  | G166/.38         | 13/5 | IIa0e    | A    | Evans      | UVF. chi Focus 40B                                   | fine               |
| APC 7-7-77                   | 40/14     |        | 3.34         | KO II  | G166  | G166/.38         | 13/5 | IIa0E    | B    | SN Vel     | "  | fine               |
| APC 7-7-77                   | 40/12     |        | 4.2          | GO Ib  | G166  | G166/.38         | 13/5 | IIa0E    | A    | Cyphac     | "  | fine               |
| APC 7-7-77                   | 400/126   |        | 6.68         | GO II  | G166  | G166/.7          | 13/5 | 098-02   | B    | RSC Vn-Fgm | Focus 100R   | fine<br>comp slstr |
| APC 7-7-77                   | 200/402   |        | 4.07         | BZ IV  | G12   | G12/.49          | 13/7 | IIIa-J   | A    | SB Blr     |  | fine               |
| APC 7-7-77                   | 200/240   |        | 3.51         | 09.52  | G-12  | G12/.49          | 13/5 | IIIa-J-E | B    | S.B. Blr   |  | fine               |
| APC 7-7-77                   | 40/86     |        | 1.93         | A0 II  | G-12  | G12/.49          | 9/7  | IIIaJ-e  | A    | Asu Sp KIK |  | fine               |
| APC 7-7-77                   | 40/80     |        | 2.           | A5     | G-12  | G12/.49          | 13/5 | IIIaJ-e  | B    | "          |  | fine               |
| APC 7-7-77                   | 500/8     |        | 9.90         | M4     | G-65  | G43/480          | 13/3 | 098-02   | A    | "          | slit at 8! slit = closed<br>was on comp. now in slit | no good            |
| APC 7-7-77                   |           |        |              |        |       |                  |      | 098-02   |      |            | IIa0 6 1/2 20,174                                    |                    |
| APC 7-7-77                   |           |        |              |        |       |                  |      | IIIaJ-E  |      |            | 098 5" D17 65P                                       |                    |
| APC 7-7-77                   | 500/18    |        | 8.80         | K0     | G 65  | G43/480          | 13/3 | 098-02   | B    | u.M. q:KK  |  | guiding<br>slstr   |
| APC 7-7-77                   | 40/140    |        | 2.8          | G8     | G-12  | G12/.49          | 14/5 | IIIaJ-E  | A    | Asu Sp H1  | my 9/5 1/100   | slstr              |

207

Date Dec 9/10 1977 Fc/Kd Observers Fgi-Ra

Emulsion Batches:

098-02E 30097-07127

098-02E\* 30097-07127

ITB J-E 10126-08127

| 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.          |
|-----------|----------------------------|----------------------|---------------------|-------------------------|-----------------------|------------------------|------------------|---------------------------|---------------|
| 42141     | HD 22468                   | 3 <sup>h</sup> 31.6  | +0° 16'             | 21:40                   | 22:45                 | 00 <sup>h</sup> 07 W   | +0° 35.6         | Fe ARC<br>NO FILTER       | 4-4-4         |
| 42142     | HD 22468                   | 3 <sup>h</sup> 31.6  | +0° 16'             | 22:46                   | 23:46                 | 01 <sup>h</sup> 09 W   | +0° 34.4         | "                         | 4-4-4         |
| 4214371   | optical for plate 42141-42 |                      |                     |                         |                       | 15 min @               | 15003<br>4810    | 7V D1<br>HD               | 7002<br>5450  |
| 42143     | HD 33328                   | 5 <sup>h</sup> 04.4  | -8° 53'             | 23:56                   | 01:09                 | 00 <sup>h</sup> 59 W   | -8° 43'          | Fe ARC<br>NO FILTER       | 7-7-7         |
| 4214371   | optical for plate 42143-45 |                      |                     |                         |                       | 15 min @ 15003<br>4810 | D4<br>D4<br>4300 | D4<br>4810                |               |
| 42144     | HD 22468                   | 3 <sup>h</sup> 31.6  | +0° 16'             | 01:15                   | 02:16                 | 03:39 W                | +0° 35'          | Fe ARC<br>NO FILTER       | 4-4-4         |
| 4214471   | optical for plate 42144    |                      |                     |                         |                       | 15 min @               | 15003<br>4810    | 7V D1<br>HD               | 7V D2<br>5450 |
| 42145     | HD 37 <del>479</del> 468   | 05 <sup>h</sup> 33.7 | -20 39'             | 02:24                   | 02:54                 | 2 <sup>h</sup> 15 W    | -2° 33'          | Fe ARC<br>NO FILTER       | 7-7-7         |
| 42146     | HD 41593                   | 06 <sup>h</sup> 01   | +15° 34'            | 03:02                   | 03:33                 | 2 <sup>h</sup> 27 W    | +15              | Fe ARC<br>NO FILTER       | 4-8           |

Spectr. T

Focus. J

Spectr. I

Exp. Mtr.

400/125

400/125

200/308

400/125

20/241

400/59



Spectr. Temp. 24°F

Dome Temp./Hum. -9°C/95%

Transparency Conditions CLEAR + cold 209

Focus 100R

Spectr. Temp. 150°F

Dome Temp./Hum. -14°C/95%

| Comparison<br>Type/Filter Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.   | Inst. | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program     | Remarks  | Quality           |
|-------------------------------|-----------|--------|--------------|-------|-------|------------------|------|----------|------|-------------|----------|-------------------|
| 4-4-4                         | 400/125   | 3-5    | 6.68         | G0V   | G16   | G16B/.7B         | 13/5 | 098-02E  | A    | RSCV/Fgi    |          | Comp. str<br>fine |
| 4-4-4                         | 400/124   | "      | "            | "     | "     | "                | "    | "        | B    | "           |          | v sl str          |
| 7-2-2                         | 200/398   |        | 4.07         | B2IV  | G12   | G12/.49B         | 13/7 | ITET-E   | A    | Sp Bn Blm   | λ Eri    |                   |
| 4-7-4                         | 400/125   |        | 6.68         | G0V   | C-16  | G16R/.7B         | 13/5 | 098-02E* | B    | RSCV/Fgi    |          | fine              |
| 7-2-2                         | 200/241   |        | 3.51         | G9.5E | G-12  | G12/.49B         | 13/5 | ITET-E   | A    | Sp B.-Bl    | σ Ori AB |                   |
| 4-8                           | 800/59    | 3-4    | 8.04         | 2A0   | G-16  | G16R/.7B         | 18/5 | 098-02B  | B    | RS CV/Fgi   |          | wk                |
|                               |           |        |              |       |       | 098 5m           |      |          | 22   | 214; 21 213 |          |                   |
|                               |           |        |              |       |       | ITET 5m          |      | D19 68°F |      | 13 250      |          |                   |

209

Emulsion Batches:

F.L.O.-E. 20077-04127

T.H.J.-E. 10126-08127

Date Sat Sun Dec 10-11 1977 Observers Ly-Ri

| 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.     |
|-----------|-------------------------------|-----------------------|---------------------|-------------------------|-----------------------|-------------------|------------------|---------------------------|----------|
| 42147     | HD 222107 (λ AND)             | 23 <sup>h</sup> 32.7  | +45° 55'            | 18.06                   | 20 03                 | +01 26W           | +46° 24'         | Fe Arc<br>ND=110          | 20-20    |
| 42147A    | optical for plate 42147-48,   |                       | 54-55.              |                         |                       | 15mi @ 15Volts    | D4 D3<br>35W 48W | D2<br>4810                |          |
| 42147B    | strip cal for plate 42147-48, |                       | 54-55.              |                         |                       | 90deg             |                  |                           |          |
| 42148     | HD 10260                      | 01 <sup>h</sup> 35.15 | +60° 32'            | 20 13                   | 21 36                 | 00 55W            | +60° 55'         | Fe Arc<br>ND-110          | 14-14-14 |
| 42149     | HD 33328 (λ Cen)              | 05 04.4               | -08 53              | 21 44                   | 22 50                 | 01 16E            | -08 43           | Fe Arc<br>NO FILTER       | 7-7-7    |
| 42149A    | optical for plate 42149-      |                       |                     |                         |                       | 5mi @ 15Volts     | D4 D4<br>41W 48W | D4<br>4810                |          |
| 42150     | HD 33328 (λ Cen)              | 05 04.4               | -08 53              | 22:55                   | 00 10                 | 00 03W            |                  | Fe Arc<br>NO FILTER       | 777      |
| 42151     | HD 37468 (σ Ori)              | 05 <sup>h</sup> 33.7  | -02° 39'            | 00.19                   | 01 00                 | 00 16W            | -02 23           | Fe Arc<br>No Filter       | 7-7-7    |
| 42151A    | strip cal for plate 42149-53. |                       |                     |                         |                       | 180deg            |                  |                           |          |
| 42151B    | strip cal for plate 42149-53. |                       |                     |                         |                       | 90deg             |                  |                           |          |
| 42152     | HD 33328 (λ Cen)              | 05 04.4               | -08 53              | 01 02                   | 02 04                 | 01 52W            | -08 31           | Fe Arc<br>NO FILTER       | 7-7-7    |
| 42153     | "                             | "                     | "                   | 02 05                   | 03 02                 | 02 50W            | "                | "                         | 7-6-6    |
| 42154     | HD 27192 (λ Cass)             | 04 12.6               | +50° 41'            | 03 17                   | 03 43                 | *04 20W           | *151 04          | Fe Arc<br>ND=110          | 14-14-14 |
| 42155     | HD 34364 (λ Aur)              | 05 11.8               | +33 39              | 03 50                   | 04 37                 | *04 16W           | *+33 54          | "                         | 14-14-14 |
| 42155A    | optical                       |                       |                     |                         |                       | 15volts 4800 D4   | 5mi              | Omni                      | Omni     |



Spectr. Temp. .... 15°F - 6°F <sup>- changed for 42155</sup>  
 Dome Temp./Hum. - 14°C 69%  
 Focus ..... 9.0B - 8.0B  
 Spectr. Temp. .... Dome Temp./Hum. ....

Transparency Conditions . . . *grindy at first* . . . 210  
*cleared fast*

| Comparison<br>pe/Filter Exp.         | Exp. Mtr. | Seeing | Ptg.<br>Mag.  | Sp.              | Inst. | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program       | Remarks   | Quality             |
|--------------------------------------|-----------|--------|---------------|------------------|-------|------------------|------|----------|------|---------------|---|---------------------|
| E REC<br>D=1.0<br>20-20<br>22<br>4.0 | 400/310   | 8-10   | 3.75          | <del>9.2IV</del> | G8B   | G12<br>/ .25B    | 9/5  | IIaD-E   | A    | Hek Br - Ly   |   |                     |
|                                      |           |        |               |                  |       |                  |      | IIaD-E   |      |               |   |                     |
|                                      |           |        |               |                  |       |                  |      | IIaD-E   |      |               |   |                     |
| E REC<br>D=1.0<br>14-14              | 400/121   | 4-5    | 5.58          | B8               | G-12  | G-12<br>/ .49B   | 13/5 | IIaD-E   | B    | Sp Bin - Ly   |   | mottled             |
| E REC<br>D=1.0<br>7-7<br>24<br>4.0   | 200/283   | 3-4    | 4.07          | B2IV             | "     | "                | 13/5 | IIIaJ-E  | A    | Sp Bin - Bln  | TV finally looks like<br>it's going to work<br>right! |                     |
| E REC<br>D=1.0<br>7-7                | 200/282   | 3-4    | 4.07          | B2IV             | G-12  | G-12<br>/ .49B   | 13/5 | "        | B    | Sp Bin - Bln  |   |                     |
| E REC<br>D=1.0<br>7-7                | 200/260   | 3-4    | 3.51          | 09.5U            | "     | "                | "    | "        | A    | Sp Bin - Bln  |   |                     |
|                                      |           |        |               |                  |       |                  |      | IIIaJ-E  |      |               |   |                     |
|                                      |           |        |               |                  |       |                  |      | IIIaJ-E  |      |               | TV popped out.  |                     |
| E REC<br>D=1.0<br>7-7                | 200/260   | 3-4    | 4.07          | B2IV             | G12   | G-12<br>/ .49B   | 13/5 | IIIaJ-E  | B    | Sp Bin - Bln  |   |                     |
| "                                    | 200/206   | "      | "             | "                | "     | "                | "    | "        | A    | "             |   |                     |
| E REC<br>D=1.0<br>14-14              | 400/142   | "      | 5.50          | B2IV             | G12   | G12<br>/ .49B    | 13/5 | IIIaD-E  | B    | Sp Bin - Linc | 11:04<br>0624   | 11.5 - 7 min<br>out |
| "                                    | 400/140   | "      | 5.82-<br>6.49 | Ap               | "     | "                | "    | "        | A    | Sp Bin - Bln  | concocture shipping<br>spect. focus changed<br>cloud  |                     |
|                                      |           |        |               |                  |       |                  |      | IIIaJ-E  |      |               |   |                     |







213

## Emulsion Batches:

III-O-E 20077-0412.7  
 III-O-E\* 20077-1112.7  
 III-O-E 10126-0812.7

Date Dec. 11-12, 1977 Sun-Mon Observers Ly-Ri

| 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.                                |
|------------------|--|--------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------------------------------------|
| 42156            | HD 222107 (λ AND)                      | 23° 32.7           | +45° 55'            | 17:20                   | 17:52                 | 00 40E            | +46 24      | Fe ARC<br>N.D. 1.10       | 2020                                |
| 42157            | HD 218356 (σ REG)                      | 23 02.2            | +24 56              | 17:58                   | 18 53                 | 00 51W            | +25 25      | "                         | E-1670                              |
| 42157T1          | spot cal for plates 42156-60           |                    |                     |                         | 15 min @ 15 Volts     |                   | D4<br>3900  | D3<br>4300                | D2<br>4810                          |
| 42157T2          | strip cal for plates 42156-60          |                    |                     |                         |                       | 90 sec            |             |                           |                                     |
| 42158            | HD 4502 (S And.)                       | 0° 42.0            | +23° 43'            | 19:03                   | 19 47                 | 00 05W            | +24° 13'    | Fe ARC<br>N.D. 1.10       | 2020                                |
| 42159            | HD 33328 (λ Cr1)                       | 05 04.4            | -08 53'             | 19:58                   | 21 44                 | 02 18E            | -08 40      | Fe ARC<br>NO FILTER       | 7-7                                 |
| 42159T1          | spot cal for plate 42159               |                    |                     |                         | 15 min @ 15 Volts     | D4<br>4100        | D4<br>4300  | D4<br>4810                |                                     |
| 42160            | HD 10260                               | 01 35 15           | +60 32              | 21 52                   | 22.48                 | 02° 13W           | +61 00      | Fe ARC<br>ND 1.1          | 2016                                |
| 42161            | HD 27192                               | 04° 12.6           | +50° 41'            | 22:55                   | 23:23                 | 00 09W            | +56° 54'    | Fe ARC<br>ND 1.1          | 14-14                               |
| <del>42162</del> | <del>HD 34354 (AR Arc)</del>           | <del>05 11 8</del> | <del>+33 37'</del>  | <del>23.29</del>        |                       |                   |             |                           |                                     |
| 42162T1          | strip cal for plate 42159              |                    |                     |                         | 180 sec               |                   |             |                           |                                     |
| 42162T2          | strip cal for plate 42161              |                    |                     |                         | 90 sec                |                   |             |                           |                                     |
| 42162T3          | spot cal for plate 42161               |                    |                     |                         | 15 min @ 15 Volts     |                   | D4<br>3900  |                           |                                     |
| 42162T4          | spot test IV-N, untreated              |                    |                     |                         |                       |                   |             |                           | ① D1 5V 10 <sup>m</sup> , no filter |
| 42162T5          | Spot test IV-N, H <sub>2</sub> O sens. |                    |                     |                         |                       |                   |             |                           | ② D1 5V 10 <sup>m</sup> , no filter |



Spectr. Temp. 14°F

Dome Temp./Hum. -12°C/60%

Transparency Conditions hazy - light cirrus in SW. 214

Focus 908

Spectr. Temp. 10°F

Dome Temp./Hum. -15°C

| Comparison Type/Filter Exp | Exp. Mtr.       | Seeing | Ptg. Mag. | Sp.    | Inst. | Grating/Tilt | Slit | Emulsion            | P.H. | Program                 | Remarks   | Quality |
|----------------------------|-----------------|--------|-----------|--------|-------|--------------|------|---------------------|------|-------------------------|---|---------|
| Fe ARC<br>ND 11<br>202     | 200/151         | 2-3    | 3.75      | G8 III | G8B   | G16R/-25B    | 9/5  | IIaD-E              | A    | 40K Bin-Ly              |   | fine    |
| Fe ARC<br>ND 11<br>202     | 200/131         | 2-3    | 6.14      | KQ I/p | "     | "            | 13/3 | "                   | B    | "                       |   | fine    |
| Fe ARC<br>ND 11<br>202     |                 |        | Broken    |        |       |              |      | IIaD-E              |      |                         | BROKEN pieces                                   |         |
| Fe ARC<br>ND 11<br>202     | 200/150         | 2-3    | 4.06      | H II p | G8B   | G16R/-25B    | 9/5  | IIaD-E              | A    | Net Bin-Ly              |   | fine    |
| Fe ARC<br>ND 11<br>202     | 200/250         | 2-3    | 4.07      | B2 IV  | G-12  | G-12/49D     | 13/5 | IIIaD-E             | B    | Sp Bin - Bln            | cirrus  |         |
| Fe ARC<br>ND 11<br>202     | 200/240         | "      | 5.56      | B8     | G-12  | G-12/49D     | 13/5 | IIaD-E              | A    | Sp Bin - Ly             |   |         |
| Fe ARC<br>ND 11<br>202     | 200/281         | 2-3    | 5.50      | B2 IV  | "     | "            | 13/5 | IIaD-E*             | B    | Sp Bin - Bln            |   |         |
| Fe ARC<br>ND 11<br>202     | <del>200/</del> | "      | 5.82V     | Ap     | "     | "            | "    | <del>IIaD-E</del>   | A    | <del>Ed Bin - Bln</del> | CLOUD.  |         |
|                            |                 |        |           |        |       |              |      | IIIaD-E             |      |                         |   |         |
|                            |                 |        |           |        |       |              |      | IIaD-E*             |      |                         |   |         |
|                            |                 |        |           |        |       |              |      | IIaD-E*             |      |                         |   |         |
|                            |                 |        |           |        |       |              |      | IV-N                |      |                         |   |         |
|                            |                 |        |           |        |       |              |      | IV-N <sub>H2O</sub> |      |                         |   |         |
|                            |                 |        |           |        |       |              |      |                     |      |                         | 3" water 20°C, then evacuated 16h, room air 14h |         |

Too weak, try D2 7V, not filter

IIaD 6 1/2 }  
 IIIaD 5" } D19 68013 219  
 IV-N 4" }  
 186  
 .20 ; .20 1.74  
 .14 dia, 100µm

215

## Emulsion Batches:

...IIaD-e 20077-11127

...IIaJ-e 10126-12127

Date Dec. 16-17 Fri-Sat. Observers Ly-Tk.....

| 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.     |
|-----------|---------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|----------|
| 42163     | HD 10260                  | 01 35.2      | +60 32'             | 23 43                   | 00:45                 | 4 30 W            | +61 00      | Fe Arc<br>ND 110          | 14-14    |
| 42163T    | Spot Calc for             | 42163        | 69-71               | 15min @ 15V             | D4<br>3900            | D3<br>4300        | D2<br>4810  |                           |          |
| 42164     | HD 47105                  | 06 31.9      | +16 29'             | 00 52                   | 01:12                 | 00 00 W           | +16 29      | Fe Arc<br>None            | 7-5-7    |
| 42165     | "                         | "            | "                   | 01 13                   | 01:24                 | 00 11 W           | "           | "                         | 7-7-7    |
| 42166     | "                         | "            | "                   | 01 25                   | 01 28                 | 00 15 W           | "           | "                         | 7-6-6    |
| 42166T    | Spot Calc for             | 42164-68     |                     | 15min @ 15V             | D4<br>4810            | D4<br>4300        | D4<br>4100  |                           |          |
| 42167     | HD 33328 <sup>2 Eri</sup> | 05 04.4      | -8 53'              | 01 32                   | 02 28                 | 02 44 W           | -08 42      | Fe Arc<br>None            | 5-5-5    |
| 42167T1   | Strip Calc for            | 42164-68     |                     |                         | 90sec                 |                   |             |                           |          |
| 42167T2   | "                         | "            |                     |                         | 180sec                |                   |             |                           |          |
| 42167T3   | "                         | "            |                     |                         | 360sec                |                   |             |                           |          |
| 42168     | HD 37468 (600 AB)         | 05 33.7      | -2 39'              | 02 31                   | 02 59                 | 02 46 W           | -02 31      | Fe Arc<br>None            | 5-5-5    |
| 42169     | HD 62044 (6 Gem)          | 07 37.0      | +29 07'             | 03 05                   | 03 55                 | 01 37 W           | +29 00      | Fe Arc<br>ND 110          | 20-20-20 |
| 42170     | HD 88021/2                | 10 03.8      | +20 44'             | 04 03                   | 05 58                 | 01 14 W           | +20 30      | Fe Arc<br>ND-11           | 14-14-14 |
| 42170T    | Strip Calc for            | 42163        | 69-71               |                         |                       | 90 sec?           |             | "                         |          |
| 42171     | HD 131511                 | 14 58        | +19 33              | 06 04                   | 06 49                 | 02 39 E           | +19 18      | Fe Arc<br>ND 11           | 14-14    |



Spectr. Temp. 34°F

Dome Temp./Hum. 32°F / 99%

Transparency Conditions ... poor at first (cloud haze) better as night progressed. 216

Focus 80-R

Spectr. Temp. 33

Dome Temp./Hum. 29 / 97%

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.    | Inst. | Grating/Tilt | Slit   | Emulsion | P.H. | Program       | Remarks       | Quality        |
|-----------|--------|-----------|--------|-------|--------------|--------|----------|------|---------------|---------------|----------------|
| 400/100   | 2-3    | 5.56      | B.8    | G12   | G12/0.498    | 13/1.5 | IIaD-e   | A    | Sp Bin - Ly   |               | sl wk          |
| 40/111    | 2-3    | 1.93      | AOTV   | G12   | G12/0.498    | 9/1.5  | IIaJ-e   | B    | STD *         |               | vst str        |
| 40/64     | "      | "         | "      | "     | "            | "      | "        | A    | "             |               | fine           |
| 40/27     | "      | "         | "      | "     | "            | "      | "        | B    | "             |               | sl wk          |
| 200/280   | 3-4    | 4.07      | B 2IV  | G12   | G12/1.498    | 13/1.5 | III A    | A    | 5B B/ly       |               | sl wk          |
| 900/254   | 3-4    | 3.51      | 09.5II | G12   | G12/1.498    | 13/1.5 | III Se   | B    | Sp Bin - Poln |               | vst wk         |
| 200/150   | 2      | 5.4       | KIII   | G16   | G88/-258     | 9/1.5  | IIaDe    | A    | H+K Bin - Ly  |               | at 11.4K, fine |
| 400/200   | 2-3    | 7.2       | gG5+AL | G12   | G12/1.498    | 13/1.5 | IIaDe    | B    | VIB - Bin.    |               | fine           |
| 500/104   | 3-4    | 6.84      | DK1    | G12   | G12/1.498    | 13/1.3 | "        | A    | H+K Bin - Ly  |               | fine           |
|           |        |           |        |       |              |        |          |      |               | see next page |                |





Spectr. Temp. 32°F

Dome Temp./Hum. 27°F / 80%

Transparency Conditions ... Poor ... &amp; Gusty ... 219

Focus ... 8.0R

Spectr. Temp. ....

Dome Temp./Hum. ....

| Exp. Mtr.       | Seeing       | Ptg. Mag.       | Sp.           | Inst.        | Grating/Tilt | Slit         | Emulsion     | P.H.         | Program      | Remarks                                | Quality |
|-----------------|--------------|-----------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--|---------|
| 400/115         | 4-6"         | 5.56            | B8            | G12B         | G12/0.49B    | 13/5         | IIaD-e       | A            | SB Ly        | Some cloud                             | fine    |
| 200/44          | 4"           | 5.09<br>+ 6.2   | A0            | G12B         | G12/0.49B    | 13/5         | IIaD-e       | B            | Waterloo     | cloud some s/contamin from bright star | guiding |
| <del>200/</del> | <del>"</del> | <del>3.28</del> | <del>K0</del> | <del>"</del> | <del>"</del> | <del>"</del> | <del>"</del> | <del>A</del> | <del>"</del> | <del>cloud</del>                       |         |
|                 |              |                 |               |              |              |              | IIa0 6 1/2"  | D19          | 68°P         | 20 175                                 | 20 174  |
|                 |              |                 |               |              |              |              | IIIaJ 5"     |              |              | 10 212                                 |         |





Spectr. Temp. 33°F

Dome Temp./Hum. 34°F / 72%

Transparency Conditions .. Getting cloudy at sundown <sup>220</sup>

Focus ... 80-R

Spectr. Temp. 32°F

Dome Temp./Hum. 33 / 92%

| Exp. Mtr.         | Seeing | Ptg. Mag.    | Sp.       | Inst. | Grating/Tilt | Slit   | Emulsion          | P.H. | Program           | Remarks                                     | Quality |
|-------------------|--------|--------------|-----------|-------|--------------|--------|-------------------|------|-------------------|---|---------|
| 200/160*          | 1.2"   | 3.28         | K0        | G12B  | G12/0.49     | 13/5   | Il0-e             | A    | C1 Vis Bin        | * approx* Exp meter c'dd cloud HU was off   |         |
| 200/43            | 1"     | 5.08+<br>6.2 | A0        | G12B  | G12/0.49     | 13/35* | Il0-e             | B    | C1 Vis Bin        | * slit shortened to avoid 'A' cutshort      |         |
| 400/310           | 1.2"   | 4.6          | K3 III    | "     | "            | 13/5   | "                 | A    | Wd Vis Bin        | cloud                                       |         |
| 200/117           | 2"     | 4.6          | F7 V      | "     | "            | "      | "                 | B    | "                 | some cloud                                  |         |
| 400/200           | 2"     | 5.6          | F0 Ia     | "     | "            | "      | "                 | A    | "                 | thin cloud                                  |         |
| 200/70            | 2.3"   | 4.7?         | A5        | "     | "            | "      | "                 | B    | C1 Vis Bin (Both) | * close triple which too faint) is B        |         |
| 400/290           | "      | 7.0          | G2 III    | "     | "            | "      | "                 | A    | wd Vis Bin        | clear up here                               |         |
| 400/170           | 3"     | 6.57         | F0        | "     | "            | "      | "                 | B    | C1 Vis Bin        | now clear down here cloud again             |         |
| 200/120           | 2.3    | 5.7?         | G2 II-III | "     | "            | "      | "                 | A    | wd Vis Bin        | this cloud seems brighter (Dirk broken off) |         |
| 200/84            | 2"     | 4.5          | A2 V      | "     | "            | "      | Il0*              | B    | Vis Bin           | scattered                                   |         |
| Developed 6.5 min |        |              |           |       |              |        | D19 @ 69°F 22 191 |      |                   |   |         |





4:27

Spectr. Temp.  $18^{\circ}F$

Dome Temp./Hum.  $+13^{\circ}F/H=80\%$

Transparency Conditions *cloudy & gusty* 220

Focus  $100-R$

Spectr. Temp. ....

Dome Temp./Hum. ....

Comparison  
type/Filter Exp  
p Arc  
p 1/10 21-43

| Exp. Mtr. | Seeing | Ptg. Mag.    | Sp.    | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program     | Remarks                  | Quality                              |
|-----------|--------|--------------|--------|-------|--------------|------|----------|------|-------------|--------------------------|--------------------------------------|
| 200/60    | 3-4    | $V=$<br>3.75 | 68 III | G 88  | G16/649B     | 9/5  | IIaD-e   | A    | H.K. Bin-Ly | TV poor                  | ultimately no counts<br>after 120115 |
|           |        | D=           | 28     | 68°F  | 6 1/2 mi     | D19  |          |      |             |                          |                                      |
|           |        |              |        |       |              |      |          |      |             | Same Yalis photo of Moon |                                      |

223 Two Wad

Emulsion Batches:

HoD-e 20077-24127  
 O.P.C. 30097-23127  
 III.a.d.e. 10126-12127

Date Dec 27-28/77 Observers Ly-Th

| 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.     |
|-----------|---|-----------|------------------|----------------------|--------------------|----------------|-------------|------------------------|----------|
| 42185     | HD222107 (λ And)                        | 23 32.7   | +45 55           | 17:26                | 18:14              | 00 44 W        | +46 26      | Fe Arc ND=1.1          | 20-20-2  |
| 42185T    | Spot Col/6 for 42185-87, 90, 92, 15 min |           |                  | 15V 3900             | 4300               | 4810           |             |                        |          |
| 42186     | HD 218356                               | 23 02.2   | +24 56           | 18:24                | 19 28              | 02 29 W        | +25 29      | Fe Arc ND 1.10         | 20-20-   |
| 42187     | HD 4502                                 | 00 42.0   | +23 43           | 19 31                | 20 44              | 02 06 W        | +24 17      | "                      | 20-20-20 |
| 42188     | HD22468                                 | 03 31.6   | 00 16            | 20 52                | 22 01              | 00 33 W        | +00 39      | Fe Arc NO FILTER       | 4-3-3    |
| 42188T    | Spot Col/6 for 42188-89                 |           |                  | 15 min @             |                    | 4810           |             |                        |          |
| 42189     | HD33328 (λ Eri)                         | 05 04.4   | -08 53           | 22 05                | 22 33              | 00 27 E        | -8 39       | Fe Arc ND=1.1          | 3-3-     |
| 42190     | HD62044 (α Gem)                         | 07 37.0   | +29 07'          | 22 42                | 23 26              | 02 07 E        | +29 03      | Fe Arc ND=1.1          | 20-20-20 |
| 42190T    | Strip Col/6 for 42185-87, 90, 92, 94-95 |           |                  | 90 sec               |                    |                |             |                        |          |
| 42191     | HD33328 (λ Eri)                         | 05 04.4   | -08 53           | 23 53                | 00 45              | 01 45 W        | -8 37       | Fe Arc ND=1.1          | 7-5-5    |
| 42191T    | Spot Col/6 for 42191                    |           |                  | 15 min @ 15V         |                    | 4810           |             |                        |          |
| 42192     | HD26676                                 | 04 08.1   | +09 58           | 00 50                | 02 00              | 03 56 W        | +10 17      | Fe Arc ND 1.10         | 14-14-14 |
| 42193     | HD37468 (α Ara)                         | 05 33.7   | -02 39           | 02 04                | 02 30              | 03 01 W        | -02 27      | Fe Arc ND=1.1          | 5-5-5    |
| 42194     | HD 88021/2                              | 10 03.8   | +20 49           | 02 35                | 05 10              | 01 11 W        | +20 33      | Fe Arc ND 1.10         | 14-14-14 |
| 42195     | HD131511                                | 14 48.9   | +19 33           | 05 16                | 07 04              | 01 39 E        | +19 22      | Fe Arc ND 1.10         | 14-14-   |



Spectr. Temp.  $20^{\circ}\text{F}$ Dome Temp./Hum.  $41.9^{\circ}\text{F} / 77\%$ Transparency Conditions *Excellent*  $\rightarrow$  *Semi cloud* <sup>234</sup>  
*later*Focus  $100\text{R}$ Spectr. Temp.  $11^{\circ}\text{F}$ Dome Temp./Hum.  $46^{\circ}\text{F} / 92\%$ 

| Exp. Mtr. | Seeing | Ptg. Mag.  | Sp.   | Inst.  | Grating/Tilt            | Slit   | Emulsion | P.H. | Program    | Remarks               | Quality  |
|-----------|--------|------------|-------|--------|-------------------------|--------|----------|------|------------|-----------------------|----------|
| 200/140   | 4"     | $V = 3.75$ | G8B   | G8B    | G16 / -25B              | 9/5    | IIaD-e   | A    | H&K Bin-Ly |                       | fine     |
|           |        |            |       | Dec 28 | $6\frac{1}{2}\text{mm}$ | @ 68°F | D19      |      |            |                       |          |
| 200/130   | 3'     | 6.14       | K016  | G8B    | G16 / -25B              | 13/3   | IIaD-e   | B    | H&K Bin-Ly |                       | vs lwk   |
| 200/182   | 3"     | 5.4        | K10p  | "      | "                       | 9/5    | "        | A    | "          | some cloud            | fine     |
| 200/65    | 3"     | 6.68       | G04   | G16    | G16 / +7B               | 13/5   | 098-02E  | B    | RSCM-FBI   |                       |          |
|           |        |            |       | Dec 28 | 5mm                     | @ 67°F | D19      |      | "          |                       |          |
| 200/110   | 3      | 4.07       | B2IV  | G16    | G16 / 7B                | 13/5   | 098-02E  | A    | SB Bin     | UV over slit          |          |
| 400/241   | 3      | 5.6        | K11   | G8B    | G16 / -25B              | 9/5    | IIaD-e   | B    | H&K Bin-Ly | uv out - cloud - snow | sl. weak |
|           |        |            |       | Dec 28 | $6\frac{1}{2}\text{mm}$ | @ 68°F |          |      | "          |                       |          |
| 200/300   | 3-5"   | 4.07       | B2IV  | G12    | G12 / 0.498             | 13/5   | IIaD-e   | B    | SBin Bin   | closed for snow       |          |
|           |        |            |       | Dec 28 | 5mm                     | @ 67°F | D19      |      | "          |                       |          |
| 200/60    | 3-4    | 6.25       | B8    | G12    | G12 / 0.498             | 13/5   | IIaD-e   | A    | SpBin-Ly   | TV fading & gone      |          |
| 200/242   | 2      | 3.51       | 09.58 | "      | "                       | "      | IIaD-e   | B    | SpBin-Bin  | TV slowly reappearing |          |
| 400/202   | 2      | 7.20       | G5A2  | "      | "                       | "      | IIaD-e   | A    | VB-Bin     | TV ok? high curies    |          |
| 400/213   | 2      | 6.84       | DK1   | "      | "                       | "      | IIaD-e   | B    | SpBin-Ly   |                       |          |





Spectr. Temp.  $17^{\circ}\text{F}$ Dome Temp./Hum.  $17^{\circ}\text{F}/96\%$ Transparency Conditions *PATCHY* 226Focus  $100\text{R}$ Spectr. Temp.  $19^{\circ}\text{F}$ Dome Temp./Hum.  $11^{\circ}\text{F}/96\%$ 

| Comparison<br>Type/Filter Exp. | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.  | Inst. | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program               | Remarks | Quality |
|--------------------------------|-----------|--------|--------------|------|-------|------------------|------|----------|------|-----------------------|---------|---------|
| 7-7-74<br>7-7-74               | 400/125   | 2-3    | 7.1          | G0   | G16R  | G16R/.7B         | 13/5 | 098-02-c | B    | RS CVn/F <sub>2</sub> |         |         |
| 7-7-74<br>7-7-74               | Dec 29    | 5mm    | @68°F        | D-19 |       |                  |      | 098-02E  |      |                       |         |         |
| 7-7-74<br>7-7-74               | 400/125   | 2-3    | 7.55         | K0   | G16 R | G16R/.7B         | 13/5 | "        | A    | RSCUN/F <sub>2</sub>  |         |         |
| 7-7-74                         | 400/125   |        | 5.33         | F2D  | "     | "                | "    | "        | B    | "                     |         |         |
| 7-7-74                         | 400/125   |        | 5.76         | WF6  | "     | "                | "    | "        | A    | "                     |         |         |

1977

227

Date 30.31 Fri Sat Observers Ly-Ri

Emulsion Batches:

HD-B... 20077-24127  
 Th J-E... 10126-12127  
 Th O-E... 20077-30127

| 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   |
|-----------|-----------------------------|----------------------|----------------------|-------------------------|-----------------------------|---------------------|----------------------------|---------------------------|-------|
| 42200     | HD62044                     | 7 37.0               | +29 07               | 21.50                   | 22:40                       | 02 40 E             | +29 01                     | Fe Acc<br>ND=1.1          | 20-2  |
| 4220091   | dup cal for plate 42200     |                      |                      |                         | 15min @ 150 <sup>0</sup> lt |                     | D4 D8 D2<br>3900 4300 4810 |                           |       |
| 42201     | HD79469                     | 9 09.2               | +02 44               | 22:52                   | 23 27                       | 03 25 E             | +02 32                     | Fe Acc<br>ND=1.1          | 18-18 |
| 42202     | HD26676                     | 4 08.1               | +09 58               | 23 33                   | 00 <sup>4</sup> 26          | 04 <sup>4</sup> 11W | +10 15                     | Fe Acc<br>ND=1.1          | 1414  |
| 42203     | HD33328 (Aeri)              | 5 04.4               | -08 53               | 00 34                   | 01 37                       | 02 50W              | -08 35                     | Fe Acc<br>No Filter       | 6-6   |
| 4220391   | dup cal for plate 42203-4   |                      |                      |                         | 15min @ 150 <sup>0</sup> lt |                     | D4 D4 D4<br>4100 4310 4810 |                           |       |
| 42204     | HD37468 (JOELAB)            | 5 33.7               | -02 39               | 01 42                   | 02 11                       | 02 54W              | -02 29                     | Fe Acc<br>No Filter       | 6-6   |
| 42205     | HD34364 (AKA)               | 5 11.8               | +33 39'              | 02 14                   | 02 49                       | 03 53W              | +33 50                     | Fe Acc<br>ND=1.1          | 1414  |
| 42206     | HD 96003                    | 10 <sup>h</sup> 59.3 | +13 <sup>o</sup> 12' | 02:58                   | 05 56                       | 01 14W              | +12 <sup>o</sup> 52        | "                         | 18-18 |
| 4220691   | dup cal for plate 42203, 04 |                      |                      |                         | 180sec                      |                     |                            |                           |       |
| 4220692   | " " "                       | 42200-02, 05         |                      |                         | 90sec                       |                     |                            |                           |       |
| 4220693   | " " "                       | 42206                |                      |                         | 90sec                       |                     |                            |                           |       |



Spectr. Temp. ... 27°F

Dome Temp./Hum. ... -05°C / 100%

Transparency Conditions ... yech! patchy

228

Focus ... 9012

Spectr. Temp. ....

Dome Temp./Hum. ... -10°C / 95%

then pretty good then  
Duck Soup

| Comparison Type/Filter | Exp  | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.   | Inst.                                  | Grating/Tilt | Slit | Emulsion | P.H. | Program     | Remarks                  | Quality |
|------------------------|------|-----------|--------|-----------|-------|--|--------------|------|----------|------|-------------|--------------------------|---------|
| Fe Acc<br>ND=11        | 20-2 | 400 / 200 | 3-4    | ~5.4      | KITL  | G8                                     | G16 / -0.25B | 9/5  | IIaD-c   | A    | HOK Bin-Ly  |                          |         |
|                        |      |           |        |           |       |  |              |      | IIaD-E   |      |             |                          |         |
| Fe Acc<br>ND=11        | 11-3 | 400 / 136 | 3-4    | 3.82      | B9.5F | G12                                    | G12 / 0.49B  | 9/5  | IIaD-c   | B    | Sp Bin-Bln  |                          |         |
| Fe Acc<br>ND=11        | 4-4  | 300 / 260 | "      | 6.25      | B8    | "                                      | "            | 13/5 | IIaD-c   | A    | Sp Bin-Ly   |                          |         |
| Fe Acc<br>ND=11        | 6-6  | 400 / 300 | "      | 4.07      | B2IV  | "                                      | "            | "    | IIaJ-c   | B    | Sp Bin-Bln  |                          |         |
|                        |      |           |        |           |       |  |              |      | IIaJ-c   |      |             |                          |         |
| Fe Acc<br>ND=11        | 1-3  | 200 / 243 | "      | 3.51      | 09.5F | G12                                    | G12 / 0.49B  | 13/5 | IIaD-c   | A    | Sp Bin-Bln  |                          |         |
| Fe Acc<br>ND=11        | 14-0 | 400 / 140 | "      | 5.82-6.49 | Ap    | "                                      | "            | "    | IIaD-c   | B    | Ecl Bin-Bln |                          |         |
|                        | 8-8  | 800 / 300 | 3-10   | 6.75      | Ap    | "                                      | "            | 9/5  | IIaD-E*  | A    | Ap-HR       | Large crescent around in |         |
|                        |      |           |        |           |       |  |              |      | IIaJ-E   |      |             |                          |         |
|                        |      |           |        |           |       |  |              |      | IIaD-E   |      |             |                          |         |
|                        |      |           |        |           |       |  |              |      | IIaD-E*  |      |             |                          |         |
|                        |      |           |        |           | IIaD  | 6 <sup>1</sup> / <sub>2</sub> " @ 68°F |              |      |          |      |             |                          |         |
|                        |      |           |        |           | IIaJ  | 5 <sup>1</sup> / <sub>2</sub> " @ 68°F |              |      |          |      |             |                          |         |





Spectr. Temp. ... 16° F .....

Dome Temp./Hum. ... -11° C .....

Transparency Conditions ..... 230

Focus ..... 100 R .....

Spectr. Temp. ....

Dome Temp./Hum. ... -13° C .....

| Companson<br>Type/Filter | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.     | Inst.           | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|--------------------------|-----------|--------|--------------|---------|-----------------|------------------|------|----------|------|---------|---------|---------|
|                          | 800/300   |        | 6.75         | A       | G12             | G12 / 490        | 91.5 | IIa OE   | A    | A MR    |         |         |
|                          |           |        | Jc 3         | 6.5 mag | @ 68° F (20° C) | D-19             |      | IIa OE   |      |         |         |         |





Spectr. Temp. ... 18°F .....

Dome Temp./Hum. ... -10°C ... 70%

Transparency Conditions ..... 232

Focus ..... 10DR .....

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

| Com<br>Type/Filter | Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp. | Inst.   | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|--------------------|-----|-----------|--------|--------------|-----|---------|------------------|------|----------|------|---------|---------|---------|
| Fe 4.0             | B2  | 400/150   |        | 7.45         | Ap  | G-12    | G.12/490         | 13/5 | DADE     | A    | Ap-MR   |         |         |
|                    | B2  | 800/120   | 3-4    | 7.17         | B9  | "       | "                | "    | "        | B    | "       | clouds  |         |
|                    |     |           |        |              |     |         |                  |      | DADE     |      |         |         |         |
|                    |     |           |        |              |     |         |                  |      | DADE     |      |         |         |         |
|                    |     | 4228-09T2 |        | Jan 9/78     |     | 6.5 min | @68°F            | D19  |          |      |         |         |         |





31127

Spectr. Temp.  $13^{\circ}\text{F}$

Dome Temp./Hum.  $10^{\circ}\text{F}/88\text{H}$

Transparency Conditions *clear with snow* 234

Focus  $90\text{-B}$

Spectr. Temp. ....

Dome Temp./Hum.  $+5^{\circ}\text{F}/$ .....

| Comparison Type/Filter Exp. | Exp. Mtr.  | Seeing | Ptg. Mag. | Sp.   | Inst. | Grating/Tilt | Slit               | Emulsion          | P.H. | Program   | Remarks   | Quality |
|-----------------------------|--|--------|-----------|-------|-------|--------------|--------------------|-------------------|------|-----------|---|---------|
| Fe Air                      | 40/76  | 6"     | 19        | A0 IV | G12B  | G12/0.498    | 9/5                | III 2J            | A    | Asm-Sp/KK | snow at end   | fine    |
| None                        | Temp + $13^{\circ}\text{F}$                                |        |           |       | G12B  | G12/1.998    | 9                  | IV 0              | B    | set 90-B  | center to blue  |         |
| Fe Air                      | 40/200   | 3"     | 19        | A0 IV | G24R  | "            | 13/5               | IV-N <sub>H</sub> | C    | Asm-Sp/KK | W 8 before slit plate soaked 20 <sup>m</sup> H <sub>2</sub> O/Arthand ambient | wk      |
|                             |  |        |           |       |       | III 5        | 5 <sup>m</sup> D19 | 65°F              | 12   | 244       |   |         |
|                             |  |        |           |       |       | IV-N         | 6 <sup>m</sup> D19 | 60°F              |      |           |   |         |
|                             | IV-N shows interference fringes from filter at 24Å spacing |        |           |       |       |              |                    |                   |      |           |   |         |





Spectr. Temp.  $20^{\circ}\text{F}$ Dome Temp./Hum.  $17^{\circ}\text{F} / \text{H} = 80\%$ Transparency Conditions ... Very Good by 22<sup>h</sup> 236  
getting more hazy —Focus  $90\text{-B}$ 

Spectr. Temp. ....

Dome Temp./Hum.  $10^{\circ}\text{F} / 98\%$ 

| Comparison Type/Filter Exp.                  | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.            | Inst. | Grating/Tilt          | Slit | Emulsion | P.H. | Program           | Remarks    | Quality        |
|--|-----------|--------|-----------|----------------|-------|-----------------------|------|----------|------|-------------------|------------|----------------|
| Fe <sup>4</sup> rc<br>NO. 1<br>15-5-58<br>02 | 400/150   | 3"     | 7.16      | B <sub>4</sub> | G12   | G <sup>12</sup> /1.19 | 13/5 | II 0.0E  | A    | A <sub>2</sub> MR |            | fine strong Hg |
| Fe <sup>4</sup> rc<br>NO. 1<br>14-8-58       | 400/138   | 3"     | 6.75      | A <sub>p</sub> | G12B  | G12/1.49B             | 9/5  | II 0.0E  | B    | A <sub>p</sub> MR | haze       |                |
| "<br>14-30                                   | 400/51?   | 3"     | 6.79      | A <sub>0</sub> | G12B  | "                     | "    | "        | A    | A <sub>m</sub> MR | thick haze | sl. w/ uneven  |
|  |           |        |           |                |       | $6\frac{1}{2}^m$ D19  | 68°F | 20       | 174  |                   |            |                |

237

Emulsion Batches:

Date Jan 13/19 Wed Observers Rm - Ri / HK - Ri

| 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.        |
|--------------------|----------------------------------|----------------------|---------------------|-------------------------|-----------------------|---------------------|-------------|---------------------------|-------------|
| 42215              | HD 22468                         | 3 <sup>h</sup> 31.6  | 0° 16'              | 17:53                   | 19:04                 | 00 57E              | +00° 35'    | Fearc                     | 4-11        |
| 42215 <sup>1</sup> | spical for plates                | 42215                |                     |                         | 15min                 | 15V 03<br>4810      | 7V D1<br>42 |                           |             |
| 42216              | HD 30282 = Au Per                | 04 <sup>h</sup> 41.1 | +36° 32.6           | 19:14                   | 20:14                 | 1:00E               | +36° 44'    | Fearc<br>ND 1.10          | 10-20       |
| 42217              | HD 45412 <sup>(?)</sup> = RT Aur | 06 <sup>h</sup> 22.1 | +30° 33.3           | 23:14                   | 00 <sup>h</sup> 17    | 1 <sup>h</sup> 25W  | +30 33      | Fearc<br>ND 1.10          | 14-14<br>14 |
| 42217 <sup>1</sup> | spical for plates                | 42216-               |                     |                         | 15min @ 15V           | 04<br>3900          | 03<br>4300  | 02<br>4010                |             |
| 42218              | MOON                             |                      |                     | 00:31                   | 01:17                 | 04 <sup>h</sup> 45W | +16° 20'    | Fearc<br>WR8              | 30 30-30    |
| 42217 <sup>1</sup> | strip out for plates 42216-      |                      |                     |                         | 90 sec                |                     |             |                           |             |



Spectr. Temp. ... 20°F ..... Dome Temp./Hum. ... -0.8°C ... 53% Transparency Conditions ... cirrus clouds ..... 238

Focus ..... 90 B .....

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

| Comparison<br>Type/Filter Exp. | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.        | Inst. | Grating/<br>Tilt | Slit  | Emulsion | P.H. | Program    | Remarks  | Quality |
|--------------------------------|-----------|--------|--------------|------------|-------|------------------|-------|----------|------|------------|--|---------|
| Feol 9-1                       | 400/125   |        | 668          | G01        | G16   | G16/.76          | 13/.5 | 098-02E  | A    | RS CVn/Fgi |  |         |
|                                |           |        |              |            |       |                  |       | 098-02E  |      |            |  |         |
| Feol 10-6                      | 800/53    |        | 7.9 -<br>8.8 | F6 -<br>G1 | G12   | G12/.996         | 20/3  | IIa0 E   | B    | Ceph/Evar  | cloud  | too wk  |
| Feol 19-10                     | 400/218   |        | 5.3 -<br>6.5 | F1 -<br>G0 | G12   | G12/.996         | 13/.5 | IIa0E    | A    | Ceph/Evar  | cloud  |         |
|                                |           |        |              |            |       |                  |       | IIa0E    |      |            |  |         |
| Feol 20-3                      | 40/20     |        |              |            | G-24  | G12/.7758        | 9/9   | IV-U-H   | C    |            | WR8, hyperid water + methanol<br>ambient, 30m exp. wet | TOO wk! |
|                                |           |        |              |            |       |                  |       | IIa0E    |      |            |  |         |
|                                |           |        |              |            |       | IIa0 6 1/2"      |       | 21 124   |      |            |  |         |
|                                |           |        |              |            |       | 098 5"           |       |          |      |            |  |         |

239

Emulsion Batches:

IIIa J.E. 10126... 3127..

Date ~~Sept~~ Sun Jan 21-22 1978 Observers KK-Ri/ Fgi-Ri.....

| 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.       |
| 42219               | HD 215182                          | 22 38.3              | +29 42              | 19:00                   | 19 <sup>h</sup> 32    | 04 <sup>m</sup> 37W | +30°10'     | Wr 8<br>Fe Arc      | 10-10-     |
| 42220               | HD 48915 (α CMa)                   | 6 40.8               | -16 35              | 19 45                   | 20:03                 | 02 <sup>m</sup> 54E | -16°36'     | "                   | 20-20-     |
| 42221               | HD 47105 (β Gem)                   | 6 31.9               | +16°29'             | 20 24'                  | 20:35                 | 02 <sup>m</sup> 14E | +16°28'     | Fe Arc<br>NO FILTER | 7-7-       |
| 42222               | HD 76644                           | 8 52.4               | +48 26              | 20:40                   | 21:15                 | 03 55E              |             | "                   | 7-7-       |
| 42222 <sup>71</sup> | optical for plates 42221-22, 24-26 |                      |                     |                         | 15min @ 152volts      |                     | D4<br>4100  | D4<br>4300          | D4<br>4810 |
| 42223               | HD 61421                           | 7 34.1               | +5 29               | 21:28                   | 22:02                 |                     |             | Wr 8<br>Fe Arc      | 20-20-     |
| 42224               | HD 56986                           | 7 14.1               | +22 10              | 23:20                   | 23:42                 | 0 11 W              |             | Fe Arc<br>no filter | 7-7-       |
| 42224 <sup>71</sup> | dup cal for plates 42221-22, 24-26 |                      |                     |                         |                       | 150 Arc             |             |                     |            |
| 42225               | HD 99028                           | 11 18.7              | +11°5'              | 23:46                   | 0:27                  | 3 08E               | +10 43      | Fe Arc<br>no filter | 7-7-       |
| 42226               | HD 37468 (α Ori)                   | 05 <sup>m</sup> 33.7 | -2° 29'             | 00:34                   | 1:08                  | 3 10 W              | -2 33.3     | Fe Arc<br>no filter | 7-7-7      |
| 42227               | HD 106677                          | 12 <sup>m</sup> 11.0 | +73° 07'            | 03:27                   | 04:26                 | 0 01 W              | +72° 43'    | Fe Arc<br>NO FILTER | 4-4-4      |
| 42227 <sup>71</sup> | optical for plates 42227-42233     |                      |                     | 15min                   |                       | D315U<br>4810       | 0170<br>Hd  | D27U<br>5450        |            |
| 42228               | 118216                             | 13 <sup>m</sup> 30.2 | +37° 42'            | 04:35                   | 04:54                 | 0 52E               | +37° 20'    | Fe Arc<br>NO FILTER | 4-4-       |
| 42229               | 118216                             | "                    | "                   | 04:54                   | 05:16                 | 0 30E               | "           | "                   | 4-4-4      |
| 42230               | "                                  | "                    | "                   | 05:16                   | 05:38                 | 0 07E               | "           | "                   | 4-4        |



Spectr. Temp. ... 20.0 F .....

Dome Temp./Hum. -10.0°C 90%

Transparency Conditions Cirrus, haze ..... 240

Focus ..... 90B .....

Spectr. Temp. ....

Dome Temp./Hum. ....

Page 1 of 2

| Comparison Type/Filter Exp. | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.       | Inst.                  | Grating/Tilt | Slit           | Emulsion | P.H. | Program               | Remarks                               | Quality           |
|-----------------------------|-----------|--------|-----------|-----------|------------------------|--------------|----------------|----------|------|-----------------------|---------------------------------------|-------------------|
| W 8 Fe Arc 10-11            | 80/80     | 2.5"   | 3.8       | G8 II + F | G-24                   | G-12/.49B    | 13/.5          | HSI      | A    | Asm-Sp ICK            | in III J exp box<br>W 8 in front slit | vsl wk smudges    |
| " 20-21                     | 40/110    | 4"     | -1.5      | AIV       | "                      | G-2/.975     | "              | IV-Nh    | B    | Asm-Sp KK             | "                                     | vsl wk            |
| Fe Arc W 8 Fe Arc 7-7-7     | 40/72     |        | 1.9       | A0 II     | G-12                   | G-12/.49B    | 9/.5           | IIIa J-E | A    | Asm-Sp KK             | very close to moon                    | fine!             |
| " 7-7-7                     | 40/82     |        | 3.3       | A5        | "                      | "            | 13/.5          | "        | B    | Asm-Sp KK             |                                       | fine              |
| W 8 Fe Arc 20-21            | 40/100    | 3"     | 0.7       | F5 IV     | G-24                   | G-12/.75B    | 9/.5           | IV-Nh    | C    | Asm-Sp KK             | clouds follow                         | sl wk comp wk     |
| Fe Arc W 8 Fe Arc 7-7-7     | 40/100    |        | 3.9       | F0 IV     | G-12                   | G-12/.49     | 13/.5          | IIIa J-E | A    | Asm-Sp ICK            |                                       | fine<br>dbl lines |
| W 8 Fe Arc 7-7-7            | 40/80     | 2"     | 4.5       | F2 IV     | G-12                   | G-12/.49     | 13/.5          | IIIa J-E | B    | Asm-Sp KK             |                                       | fine              |
| Fe Arc W 8 Fe Arc 7-7-7     | 40/50     |        | 3.51      | O9.5 I    | G-12                   | G-12/.49     | 13/.5          | IIIa J-E | A    | Sp Bin Blk            | clouds                                | vsl wk            |
| Fe Arc W 8 Fe Arc 7-7-7     | 800/252   |        | 7.55      | A0        | G-16                   | G-16/.700    | 13/.5          | 098-02-E | B    | RS CU <sub>n</sub> Mg |                                       | fine<br>dbl lines |
| W 8 Fe Arc 7-7-7            | 400/125   |        | 5.3       | F2 II     | G-16R                  | G-16/.73     | 13/.5          | 098-02-E | A    | "                     |                                       | fine              |
| " 4-4-4                     | 400/125   |        | "         | "         | "                      | "            | "              | "        | B    | "                     |                                       | fine              |
| " 4-4-4                     | 400/125   |        | "         | "         | "                      | "            | "              | "        | A    | "                     |                                       | fine              |
|                             |           |        |           | III J5    | 5 <sup>m</sup> J2, 2A4 | 098          | 5 <sup>m</sup> | 26 195   | IV N | 5 <sup>m</sup>        | HSI 8 <sup>m</sup>                    | D19 68°F          |





Spectr. Temp. ....

Dome Temp./Hum. ....

Transparency Conditions ..... 242

Focus ..... 90B

Spectr. Temp. ....

Dome Temp./Hum. -15°C 100%

| Comparison Type/Filter Exp. | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion    | P.H. | Program                             | Remarks | Quality              |
|-----------------------------|-----------|--------|-----------|-----|-------|--------------|------|-------------|------|-------------------------------------|---------|----------------------|
| FAEC No Filter 4-4          | 400/125   |        | 5.3       | DF6 | G-16  | 616/7B       | 13/5 | 098-02F     | B    | PSCU <sub>n</sub> -F <sub>9</sub> i |         | v sl wk              |
| " 4-4                       | 400/125   |        | 5.76      | DF6 | G-16  | 616/7B       | 13/5 | 098-02F     | A    | "                                   |         | v sl wk<br>dbl lines |
| " 4-4                       | 400/102   |        | "         | "   | "     | "            | "    | "           | B    | "                                   | clouds  | sl wk<br>dbl lines   |
|                             |           |        |           |     |       |              |      |             |      |                                     | DAWN    |                      |
|                             |           |        |           |     |       | 098          |      | 5" D19 68°F |      |                                     |         |                      |







245

TOUR 1<sup>N</sup> M<sup>n</sup>'s group

Emulsion Batches:

D.E.O.F. 20027-27127....

Date JAN 23/24 MON/TUES/78 Observers Burt - Ri.....

| 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     |
|-----------|--------------------------------|--------------|---------------------|-------------------------|------------------------------|-------------------|--------------------|---------------------------|---------|
| 42235     | HD 26571                       | 04 07.0      | +22 09              | 21 06                   | 22 25                        | 02 09W            | +22 25             | F2 ARC<br>N.D. 110        | 141414  |
| 42236     | HD 51418                       | 06 52.2      | +42 26              | 22 30                   | 00 06                        | 01 03W            | +42 23             | "                         | 141414  |
| 42236T1   | spot cal for plates            | 42235-       |                     |                         | 15 min @ 15V <sub>alts</sub> |                   | 04 03<br>3900 4300 | D2<br>4810                |         |
| 42236T2   | strip cal for plates           | 42235-       |                     |                         | 90 sec                       |                   |                    |                           |         |
| 42237     | HD 37468 (50 <sub>ri</sub> AB) | 05 33.7      | -02 39'             | 00 10                   | 01 03                        | 03 21W            | -02 30'            | FE ARC<br>NO FILTER       | 7-7-7   |
| 42238     | HD 96003                       | 10 59.3      | +13 12              | 01 07                   | 04 10                        | 01 02W            | +12 52             | F2 ARC<br>N.D. 110        | 14-14-1 |
| 42238T1   | spot cal for plates            | 42237        |                     |                         | 15 min @ 15V <sub>alts</sub> |                   | 04 04<br>4100 4300 | D4<br>4810                |         |
| 42238T2   | strip cal for plates           | 42237        |                     |                         | 180 sec                      |                   |                    |                           |         |



Spectr. Temp.  $20^{\circ}\text{F}$  ..... Dome Temp./Hum.  $-08^{\circ}\text{F}$   $83\%$  Transparency Conditions  $\text{HAZY}$  .....  $246$   
 Focus  $90\text{B}$  .....  $\text{WINDY}$   
 Spectr. Temp. .... Dome Temp./Hum. ....

| Comparison Type/Filter Exp | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.   | Inst. | Grating/Tilt | Slit  | Emulsion | P.H. | Program    | Remarks | Quality        |
|----------------------------|-----------|--------|-----------|-------|-------|--------------|-------|----------|------|------------|---------|----------------|
| Fe ABC<br>40/141           | 40/141    | 2-3    | 6.11      | B8    | G-12  | 012/480      | 9/5   | IIA0-E   | A    | Ap-MR      |         |                |
| 40/140                     | 40/140    |        | 6.61      | A0    | G-12  | 012/49       | -     | -        | B    | Ap-MR      |         | fine           |
|                            |           |        |           |       |       |              |       | IIA0-E   |      |            |         |                |
| 40/55                      | 40/55     |        | 3-51      | 09.5V | G 12  | G12/49       | 13/5  | IIA.5 E  | A    | Sp Bin Blm |         | fine           |
| 40/102                     | 40/102    |        | 6.75      | Ap    | "     | "            | 9.5   | IIA0-E   | B    | Ap-MR      | V. HAZY | v sl wk str lq |
|                            |           |        |           |       |       |              |       | IIA.5-E  |      |            |         |                |
|                            |           |        |           |       |       | III 20       | 5m    | D19      | 68°F | 12 245     |         |                |
|                            |           |        |           |       |       | II 20        | 6'12" |          |      | 22 183     |         |                |

247

Sat-Sun

Emulsion Batches:

Date Jan. 28-29/78. Observers K.K.-Tn./Dln.-Tn.....

D.A.C. 01126-22018

D.A.C. 20077-30127

| 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.     |
|-----------|-----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|----------|
| 42239     | HD 37468 <sup>~Ori AB</sup> | 05 33.7      | -2 39               | 23 28                   | 00 17                 | 02 54 W           | -2 29       | Fe Arc<br>None            | 7-77     |
| 42239T    | Spot Coln for 42239         |              |                     | 15 min @                | 15V                   | D4<br>4100        | D4<br>4300  | D4<br>4810                |          |
| 42240     | HD 47105                    | 06 31.9      | +16° 29'            | 00 23                   | 00 36                 | 02 15 W           | +16° 31     | Fe Arc<br>None            | 11-7-77  |
| 42241     | HD 88021/2                  | 10 03.8      | +20 49              | 00 42                   | 02 58                 | 01 05 W           | +20 34      | Fe Arc<br>ND10            | 14-14-77 |
| 42241T    | Spot Coln for 42241         |              | 15 min @            | 14V                     | D4<br>3900            | D3<br>4300        | D2<br>4810  |                           |          |
| 42241T    | Strip Coln for 41           |              |                     |                         |                       | 90 sec            |             |                           |          |









Spectr. Temp. ... 15° F .....

Dome Temp./Hum. ... 71.3° F / 90%

Transparency Conditions ... Slight cloud ... 256  
6070

Focus ... 90-B - For G12

Spectr. Temp. ... 12° F .....

Dome Temp./Hum. ... 44° F / 92%

Fair Aurora at 3<sup>h</sup>  
getting better by 4:30

| Comparison Type/Filter Exp | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.    | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program   | Remarks                                | Quality                 |
|----------------------------|-----------|--------|-----------|--------|-------|--------------|------|----------|------|-----------|--|-------------------------|
| Fe Ar<br>No Filter<br>4/4  | 400/58    | >10"   | 6.68      | G0V    | G16   | G16R/.78     | 13/5 | 098-02c  | A    | RSCV/Fi   | reversed - (Cap came down before end!) | ok uneven (dispersion?) |
| Fe Ar<br>No Filter<br>5-5  | 400/11    | 6"     | 6.67      | d63    | G24R  | G16-24/.38B  | 13/5 | 098-02c  | B    | Asn-Sp KK | Focus FAR V filter before slit Cloudy  | ok                      |
| Fe Ar<br>No Filter<br>4/4  | 400/23    | 6"     | 3.27      | G0     | G12   | G12/49B      | 13/7 | II100e   | A    | "         | "                                      | fine                    |
| "                          | 400/180   | 3-6"   | 6.9       | G8V    | G12   | "            | 13/5 | II100e   | B    | "         | "                                      | fine                    |
| Fe Ar<br>No Filter<br>5/4  | 400/205   | 4"     | 6.29      | dK1    | G12   | G12/49B      | 13/5 | II100e   | A    | "         | "                                      | fine<br>fingerprint     |
| "                          | 400/25    |        | 1.29      | K2 III | G12   | G12/49B      | 13/5 | "        | B    | Std Vel   | "                                      | fine                    |
|                            |           |        |           |        | II10  | 6 1/2"       | D19  | 68° F    | 23   | 188       |  |                         |
|                            |           |        |           |        | 098   | 5"           | D19  | 68° F    | 35   | 235       |  |                         |
|                            |           |        |           |        | IV-N  | "            | "    | "        |      |           |  |                         |











30018

Spectr. Temp.  $20^{\circ}\text{F}$ .....

Dome Temp./Hum.  $+15^{\circ}\text{F}/.9876$

Transparency Conditions ... *Clearing & cold* .....  $2500$

Focus .....  $90\text{-B}$ .....

Spectr. Temp. ~~75~~.....

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

Comparison  
Type/Filter Exp  
R Ar  
No W 14-14-2

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst. | Grating/Tilt | Slit               | Emulsion | P.H. | Program | Remarks                | Quality          |
|-----------|--------|-----------|------|-------|--------------|--------------------|----------|------|---------|------------------------|------------------|
| 400/108   | 4-7    | 6.45      | 68II | G12   | G12/0.4AB    | 13/5               | Ilac     | A    | KK      | some strange slow wave | vsl Lk<br>unseen |
|           |        |           |      |       | Ilao         | 6 <sup>m</sup> D19 | 68°F     | 19   | 170     |                        |                  |

255

## Emulsion Batches:

...II. a. e. 2009.7-30018

...098.02e. 3009.7-02028

...III. a. e. 2901.8-01126

Date Feb 3/4 1978 Observers Ly-Tn.  
F21-Sur

| 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.    |
|-----------|----------------------------------|-----------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|---------|
| 42250     | HD10260                          | 01 35.2               | +60 32              | 18:12                   | 19:26                 | 02 23W            | +61 02      | Fe Arc<br>ND=11           | W-15-1  |
| 42250T    | Spot Cals                        | for 42250, 52, 54-56. |                     |                         | 15 min @ 15V          | D4<br>3900        | D3<br>4300  | D2<br>4210                |         |
| 42251     | HD22468                          | 03 31.6               | +00 16              | 19 42                   | 21 21                 | 02 23W            | +00 39      | Fe Arc<br>None            | 5-5-8   |
| 42251T    | Spot Cals for 42251.             |                       |                     |                         | 15 min @ 15V          | D3<br>4810        | D2<br>5950  | D2<br>7V                  |         |
| 42252     | HD26676                          | 04 08.1               | +09 58              | 21 29                   | 22 44                 | 03 09W            | +10 17      | Fe Arc<br>ND=11           | 14-13-  |
| 42253     | HD37468 (6000AB)                 | 05 33.7               | -02 39              | 22 47                   | 23 44                 | 02 45W            | -02 28      | Fe Arc<br>NO FILTER       | 7-7-7   |
| 42253T    | Spot Cals for 42253, 57.         |                       |                     | 15 min @ 15V            | D4<br>4100            | D4<br>D4          | D4          |                           |         |
| 42254     | HD62044 (6600)                   | 07 37                 | +29 07 1900         | 23 52                   | 01 05                 | 02 02W            | +29 04      | Fe Arc<br>ND=10           | 20-20.  |
| 42255     | HD72208                          | 07 41.8               | +28 56              | 01 12                   | 02 57                 | 03 04W            | +10 01      | Fe Arc<br>ND 1:10         | Fe 7-7- |
| 42255T    | Strip Cals for 42253, 57.        |                       |                     |                         | 180 sec               |                   |             |                           |         |
| 42256     | HD131511                         | 14 48.9               | +19 33              | 03 08                   | 04 55                 | 01 10E            | +19 22      | Fe Arc<br>ND 1:10         | 14-14-  |
| 42256T    | Strip Cals for 42250, 52, 54-56. |                       |                     |                         | 90 sec                |                   |             |                           |         |
| 42257     | HD139892                         | 15 35.6               | +36 58'             | 04 58                   | 06 55                 | 00 05E            | +36 50      | Fe Arc<br>ND FILTER       | 7-7-    |



Spectr. Temp. 18°F

Dome Temp./Hum. 10°F / 63%

Transparency Conditions good 256

Focus 903 - 80-8

Spectr. Temp. +3°F

Dome Temp./Hum. -3°F / 90%

then use crystals

| Comparison Type/Filter Exp | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.   | Inst. | Grating/Tilt | Slit   | Emulsion | P.H. | Program           | Remarks                            | Quality                                  |
|----------------------------|-----------|--------|-----------|-------|-------|--------------|--------|----------|------|-------------------|------------------------------------|--|
| Fe Dec<br>NO: 1<br>11-15-8 | 400/90    | 6-8    | 5.52      | B8    | G12   | G12/0.493    | 13/5   | IIaD-e   | A    | SpBin-Ly          | bad seeing & TV                    | fine                                     |
| Fe Dec<br>NO: 1<br>5-5-8   | 200/55    | 4"     | 6.7       | G0V   | G16R  | G16/17B      | 13/5   | 098e-02  | B    | RSCU <sub>n</sub> | broken 2 pieces                    | fine                                     |
| Fe Dec<br>NO: 1<br>11-15-8 | 400/138   | 4-6    | 6.25      | T38   | G12   | G12/0.493    | 13/5   | IIaD-e   | A    | SpBin-Ly          | TV camera covered.<br>focus to 808 | fine<br>gr. tilt?<br>vst wkt<br>gr tilt? |
| Fe Dec<br>NO: 1<br>7-2-8   | 200/340   | "      | 3.51      | 09.5V | "     | "            | "      | IIIaJ-e  | B    | SpBin-Bln         | "                                  | "  |
| Fe Dec<br>NO: 1<br>10-10-8 | 200/55    | 3-5    | 25.4      | K1/II | G8    | G16/-25      | 9/5    | IIaD-e   | A    | HoKBin-Ly         |                                    | fine                                     |
| Fe Dec<br>NO: 1<br>10-10-8 | 400/122   | 4-6    | 6.53      | 110   | "     | "            | 13/5   | IIaD-e   | B    | SpBin-Ly          | longer time to 115                 | fine                                     |
| Fe Dec<br>NO: 1<br>10-10-8 | 40/180    | 2-4    | 6.84      | dK1   | G12   | G12/0.493    | 13/5   | IIaD-e   | A    | Asm Sp-KK         |                                    | fine<br>H. shows                         |
| Fe Dec<br>NO: 1<br>7-7-8   | 200/324   | 2-4    | 4.83      | BIV   | G12   | G12/0.493    | 3/5    | IIIaJ-e  | B    | SpBin Bln/Ly      |                                    | fine<br>(bl lines)                       |
|                            |           |        |           |       |       | II 00        | 56     |          |      | 18 161            |                                    |  |
|                            |           |        |           |       |       | III 25       |        | D19 68°F |      | 13 246            |                                    |  |
|                            |           |        |           |       |       | 098          | 3 1/2" |          |      | 17 149            |                                    |  |

257 Sat - Sun

Date Feb. 4-5/78 Observers Jh. Bar. BK.....

Emulsion Batches:

D.A.S. - E. 29018 - 01126

A.O. - E. 20097 - 02028

| 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.     |
|-----------|----------------|-----------------------------------|--|-------------------------|-----------------------|-------------------|-------------|---------------------------|----------|
| 42258     | HD 24760       | 03 51.1                           | +39 43   | 18 12                   | 18 32                 | 0 40E             | +40 04      | FeArc<br>none             | 9-11-12  |
| 42259     | HD 222107      | 23 32.7                           | +45 55   | 18 37                   | 19 08                 | 4 13W             | +46 29      | FeArc<br>ND110            | 20-20-21 |
| 42259T    | Spot Calc for  | 42259                             | -63.   |                         | 15" @ 15mm            | D4<br>3900        | D3<br>4300  | D2<br>481D                |          |
| 42260     | HD 3627        | 0 34.0                            | +30 19   | 19 11                   | 19 40                 | 3 45 W            | +30 51      | FeArc<br>ND110            | 20-20-21 |
| 42261     | HD 32092       | 4 55.6                            | +26 32   | 19 46                   | 21 08                 | 0 49 W            | +26 45      | "                         | 14-14-1  |
| 42262     | HD 71663       | 8 23.5                            | -2 11  | 21 12                   | 22 26                 | 1 20 E            | -2 20       | "                         | 14-14-1  |
| 42263     | HD 71153       | 8 10.7                            | +24 52   | 22 32                   | 23 50                 | 0 07 W            | +24 44      | "                         | 11-13-1  |
| 42263T    | Strip Calc for | 42259-63                          |  |                         | 90 sec                |                   |             |                           |          |
| 42263T2   | Spot calc      | High Speed Infrared film          | 15" @ 7" D2  | Hx                      | D1                    | Wr 25             |             |                           |          |
| T3        | " "            | N-N plate, soaked 2 <sup>hr</sup> | H <sub>2</sub> O + Methanol                              | -7°C                    | 15" @ 7"              | D3                | Wr 25       | exp with                  |          |
| T4        | " "            | N-N plate, soaked 2 <sup>hr</sup> | H <sub>2</sub> O + Methanol + AgNO <sub>3</sub> (1:5000) | -7°C                    | 15" @ 7"              | D3                | Wr 25       |                           |          |



Spectr. Temp.  $+11.0^{\circ}\text{F}$ .....

Dome Temp./Hum.  $+7.7^{\circ}\text{F}/.627$

Transparency Conditions *Fine*..... *5/ haze* <sup>258</sup>

Focus *80-B*.....

Spectr. Temp. ....

Dome Temp./Hum. */*.....

*Cloud by 0<sup>h</sup>*

| Comparison<br>Type/Filter<br>Exp             | Exp. Mtr.         | Seeing | Ptg.<br>Mag. | Sp.  | Inst. | Grating/<br>Tilt              | Slit   | Emulsion | P.H. | Program           | Remarks        | Quality |
|--|-------------------|--------|--------------|------|-------|-------------------------------|--------|----------|------|-------------------|----------------|---------|
| FeAr<br>10.0<br>FeAr<br>ND 110<br>02<br>1810 | 91-1<br>40/120    | 2-3    | 2.71         | BosE | G8B   | G16/25-                       | 9/7    | IIc0-e   | A    | SB T <sub>n</sub> |                | fine    |
| FeAr<br>ND 110<br>02<br>1810                 | 20-2-2<br>200/133 | "      | $v=$<br>3.75 | G8B  | "     | "                             | 9/5    | IIc0-e   | B    | HEK Bin Ly        |                | fine    |
| FeAr<br>ND 110                               | 20-2-2<br>200/180 | 2"     | 4.6          | K3M  | G8B   | G16/25 <sup>red</sup> -       | 9/5    | IIc0-e   | A    | Net Prog          |                | fine    |
| "  | 1-2<br>200/150    | 2-3"   | 7.28         | G5   | G12B  | G12/490                       | 13/5   | "        | B    | "                 |                | fine    |
| "  | 1-1-1<br>200/150  | "      | 6.57         | F0   | "     | "                             | "      | "        | A    | "                 |                | fine    |
| "  | 1-5-5<br>200/101  | 2"     | 8.2          | G    | "     | "                             | 18/5   | "        | B    | "                 | Secondary mag. | st. wh  |
|  |                   |        |              |      |       |                               |        | "        |      |                   |                |         |
|  | Des 9"            | 65°F   |              |      |       | IIc0                          | 6" DI) | 68°F     | 19   | 168               |                |         |
|  | 5"                | 65°F   |              |      |       | III                           |        |          |      |                   |                |         |
| 3 Wr 25                                      |                   |        |              |      |       | all recent IIc0 rather grainy |        |          |      |                   |                |         |







261

Date *Thurs/Fri*  
*Feb. 9-10/78.*Observers *Lne-Ri-Bar/KK-Ri*

Emulsion Batches:

*Feb. E. 20077-04028..*  
*098.02E. 30097-02078.*  
*Mar. 0106-29018....*

| 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.     |
|-----------|--|----------------------|---------------------|-------------------------|-----------------------|---------------------|-------------|------------------------------|----------|
| 42271     | HD 10260                                   | 01 35.15             | +60 32              | 18:16                   | 19:01                 | 2 <sup>h</sup> 22W  | +61° 01     | Fe NR<br>ND 1.10             | 14-14    |
| 42272     | HD 27192                                   | 04 <sup>h</sup> 12.6 | +50° 41'            | 19:07                   | 19:21                 | 0 <sup>h</sup> 04W  | +50° 57     | "                            | 14-14    |
| 42273     | HD 22468                                   | 3 <sup>h</sup> 31.6  | 0° 16               | 19:30                   | 20:17                 | 01 <sup>h</sup> 43W | +00° 38     | Fe NR<br>ref. 1.10           | 9-4.5    |
| 42273T1   | apical for plates 42271, 72, 75-78, 80-83. |                      |                     | 15mm @ 15V alt          |                       | 3800                | 4300        | D4<br>D2<br>4810             |          |
| 42273T2   | apical for plate 42273.                    |                      |                     | 15mm                    |                       | 1500                | 4810        | 7U D3<br>4L<br>7U D2<br>5450 |          |
| 42274     | HD 37468 (O-01; AB)                        | 05 <sup>h</sup> 33.7 | -02° 39'            | 20:23                   | 20:49                 | 06 <sup>h</sup> 13W | -02° 29     | Fe NR<br>ND 1.10             | 7-77     |
| 42275     | HD 27192                                   | 04 <sup>h</sup> 12.6 | +56° 41'            | 20:53                   | 21:08                 | 01 <sup>h</sup> 51W | +50° 58'    | Fe NR<br>ND 1.10             | 14-14.14 |
| 42276     | HD 26676                                   | 04 08.06             | +9° 58              | 21:15                   | 21:57                 | 02 <sup>h</sup> 46W | +10° 16     | "                            | 14-14.14 |
| 42276T1   | apical for plate 42274, 79                 |                      |                     | 15mm @ 15V alt          |                       | 4100                | 4300        | D4<br>D4<br>4810             |          |
| 42277     | HD 34364 (NR NR)                           | 05 <sup>h</sup> 11.8 | +33° 39'            | 22:00                   | 22:29                 | 02 <sup>h</sup> 14W | +33° 50     | Fe NR<br>ND 1.10             | 14-14.14 |
| 42278     | HD 86021/2                                 | 10 <sup>h</sup> 03.8 | +20° 49'            | 22:34                   | 00:56                 | 00 <sup>h</sup> 09E | +20° 33     | "                            | 14-14.14 |
| 42279     | HD 47405                                   | 06 31.9              | +16° 29'            | 01:00                   | 01:15                 | 03 <sup>h</sup> 41W | +16 33      | "                            | 7-77     |
| 42280     | HD 103095                                  | 11 47.2              | +38 26              | 01:20                   | 02:43                 | 00 <sup>h</sup> 05E | +37 59      | "                            | 14-14.14 |
| 42281     | HD 121370                                  | 13 49.7              | +18° 54'            | 02:46                   | 02:55                 | 01 <sup>h</sup> 55E | +18° 39     | "                            | 14-14.14 |



Spectr. Temp. ... 20°F

Dome Temp./Hum. - 07°C 55%

Transparency Conditions ... *excellent* 262

Focus ... 90 B

Spectr. Temp. ....

Dome Temp./Hum. ....

| Companion Type/Filter Exp | Exp. Mtr. | Seeing | Ptg. Mag.     | Sp.   | Inst. | Grating/Tilt                      | Slit | Emulsion | P.H. | Program    | Remarks             | Quality             |
|---------------------------|-----------|--------|---------------|-------|-------|-----------------------------------|------|----------|------|------------|---------------------|---------------------|
| Fe ARC<br>ND 110          | 400/90    | 2-3    | 5.58          | B8    | G12   | G <sup>12</sup> / <sub>.49B</sub> | 13/5 | II00-E   | A    | Sp Bir-Ly  | cloud               |                     |
| "                         | 400/155   | 2-3    | 5.50          | B8II  | "     | "                                 | 13/5 | II00-E   | B    | Sp Bir-Ly  |                     |                     |
| 02<br>4910                |           |        |               |       |       |                                   |      | II00-E   |      |            |                     |                     |
| Fe ARC<br>ND 110          | 400/141   |        | 6.68          | G0II  | G16R  | G <sup>16</sup> / <sub>.7B</sub>  | 13/5 | 098-02E  | A    | RSCUn/Fge  |                     | fine                |
| 70 D2<br>5450             |           |        |               |       |       |                                   |      | II00-E   |      |            |                     |                     |
|                           |           |        |               |       |       |                                   |      | 098-02E  |      |            |                     |                     |
| Fe<br>ND 110              | 300/346   | 2-3    | 3.51          | 09.5I | G-12  | G <sup>12</sup> / <sub>.49B</sub> | 13/5 | II00-E   | B    | Sp Bir-Blu |                     | fine<br>sl str      |
| 7-12<br>ND 110            | 100/140   |        | 5.50          | B8II  | "     | "                                 | "    | II00-E   | A    | Sp Bir-Lac |                     |                     |
| "                         | 100/140   |        | 6.21          | B8    | "     | "                                 | "    | "        | B    | S.B. Ly    |                     | fine                |
| 04<br>4910                |           |        |               |       |       |                                   |      | II00-E   |      |            |                     |                     |
| Fe ARC<br>ND 110          | 100/140   |        | 5.82-<br>6.49 | II    | G-12  | G <sup>12</sup> / <sub>.49B</sub> | 13/5 | II00-E   | A    | Fe/Bi-Blu  |                     | fine                |
| "                         | 100/250   |        | 7.20          | G5-12 | G-12  | G <sup>12</sup> / <sub>.49B</sub> | 13/5 | II00-E   | B    | UB-Blu     | curves cloud around | ch                  |
| "                         | 100/70    |        | 1.9           | A0TU  |       |                                   | 9/5  | II00-E   | A    |            |                     | fine, but scratches |
| "                         | 100/180   |        | 7.20          | B8II  |       |                                   | 13/5 | II00-E   | B    |            |                     |                     |
| "                         | 200/103   |        | 3.27          | f0    |       |                                   | 9/7  | II00-E   | A    |            |                     |                     |





Spectr. Temp. .... Dome Temp./Hum. .... Transparency Conditions ..... 264

Focus ..... 90B

Spectr. Temp. .... 180F

Dome Temp./Hum. .... -10°C. 91%

| Comparison Type/Filter | Exp. | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst. | Grating/Tilt | Slit | Emulsion   | P.H. | Program   | Remarks                           | Quality |
|------------------------|------|-----------|--------|-----------|------|-------|--------------|------|--|------|-----------|-----------------------------------|---------|
| Fein                   | 1-10 | 400/170   | 2.4    | 7.0       | G8V  | G12   | G12/.49B     | 13/5 | II30c  | B    | Asm-Sp KK | clouds n + off                    | fine    |
| Fein                   | 1-10 | 400/180   | 2"     | 6.84      | DK1  | G12   | G12/.49B     | 13/5 | II30c  | A    | Asm-Sp KK |                                   | fine    |
| Fein                   | 1-10 | 400/260   | 2"     | 2.21      | AOV  | G24I  | G12/.49B     | 13/5 | H5I  | B    | Asm-Sp KK | clouds again v filter before slit | fine    |
| Fein                   | 1-10 | 400/110   |        | 1.29      | h22p | G24J  | G12/.6B      | 13/5 | H5I  | A    | Std Vel   | v filter - in front of slit       | strong  |
|                        |      |           |        |           |      |       |              |      | II30 6 <sup>m</sup> 22 173 all II30's have peeling emulsion (defective coating?) |      |           |                                   |         |
|                        |      |           |        |           |      |       |              |      | H5I 11 <sup>m</sup> D19 60F 20 171   |      |           |                                   |         |
|                        |      |           |        |           |      |       |              |      | 098 4 <sup>m</sup> 26 175  |      |           |                                   |         |
|                        |      |           |        |           |      |       |              |      | III3J 6 <sup>m</sup> 15 254  |      |           |                                   |         |











Spectr. Temp.  $24^{\circ}\text{F}$ Dome Temp./Hum.  $-09^{\circ}\text{C}$   $72\%$ Transparency Conditions *good* 268Focus *OR*

Spectr. Temp. ....

Dome Temp./Hum.  $-16^{\circ}\text{C}$   $80\%$ *the seeing was out of this world*

| Comparison<br>Type/Filter | Exp  | Exp. Mtr. | Seeing      | Ptg.<br>Mag. | Sp.            | Inst. | Grating/<br>Tilt     | Slit              | Emulsion           | P.H. | Program     | Remarks | Quality           |
|---------------------------|------|-----------|-------------|--------------|----------------|-------|----------------------|-------------------|--------------------|------|-------------|---------|-------------------|
| Fe Arc                    | 14-1 | 400/150   | 8-10        | 6.61         | A0             | G-12  | G <sup>12</sup> /490 | 9/5               | II <sub>0</sub> -E | A    | Ap-MR       |         | fine              |
| W.D. 110                  |      |           |             |              |                |       |                      |                   | II <sub>0</sub> -E |      |             |         |                   |
| D2                        |      |           |             |              |                |       |                      |                   | II <sub>0</sub> -E |      |             |         |                   |
| 120                       |      |           |             |              |                |       |                      |                   |                    |      |             |         |                   |
| Fe Arc                    | 14-1 | 400/150   | THE<br>PITS | 6.75         | A <sub>p</sub> | G-12  | G <sup>12</sup> /490 | 9/5               | II <sub>0</sub> -E | B    | Ap-MR       |         | ok<br>not audited |
| W.D. 110                  |      |           |             |              |                |       |                      |                   |                    |      |             |         |                   |
| "                         | 14-1 | 400/140   | "           | 5.3          | c B1           | G-12  | "                    | 13/5              | "                  | A    | B-TYPE STB. |         | fine              |
|                           |      |           |             |              |                |       | 6 <sup>m</sup> D19   | G <sup>12</sup> F | 22                 | 178  |             |         |                   |

269

Tues Wed

Date Feb 14-15 1978 Observers B. J. Ri

Emulsion Batches:

Trac E 20077-10028  
Trac EX 20077-14028

| 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.            |
|-----------|-------------------------------|----------------------|----------------------|-------------------------|-----------------------|---------------------|-------------|---------------------------|-----------------|
| 42290     | HD 26571                      | 04 <sup>h</sup> 7.0  | +22° 09'             | 18 21                   | 19:10                 | 00 <sup>h</sup> 20W | +22° 27'    | Fe ARC<br>ND 110          | 14-14-14        |
| 42290T1   | spot cal for plates 42290-93  |                      |                      |                         | 15 min @ 1500         | D4<br>3900          | D3<br>4300  | D2<br>4810                |                 |
| 42290T2   | strip cal for plates 42290-93 |                      |                      |                         | 90 sec                |                     |             |                           |                 |
| 42291     | HD 34547                      | 05 <sup>h</sup> 13.2 | +13° 29'             | 19 13                   | 21:16                 | 01 <sup>h</sup> 20W | +13° 36'    | Fe ARC<br>ND 110          | 14-14-14        |
| 42292     | HD 47256                      | 06 32.6              | +27 53               | 21 20                   | 00:00                 | 02 44W              | +27° 57'    | Fe ARC<br>ND 110          | 14-14-14        |
| 42293     | HD 96003                      | 10 <sup>h</sup> 59.3 | +13° 12'             | 00 04                   | 02:05                 | 00:24 W             | +12° 52'    | Fe ARC<br>ND 110          | 14-14-14        |
| 42294     | HD 138406                     | 15 26.8              | +62 05               | 02 12                   | 04 06                 | 01 58 E             | +61° 51'    | "                         | 14-14-14        |
| 42295     | HD 137182                     | 15 19.5              | +10 54               | 04 12                   | 06 08                 | 00 08 W             | +10 42'     | "                         | 14-14-14        |
| 42295T1   | spot cal for plates 42294-96  |                      |                      |                         | 15 min @ 1500         | D4<br>3900          | D3<br>4300  | D2<br>4810                |                 |
| 42295T2   | strip cal for plates 42294-96 |                      |                      |                         | 90 sec                |                     |             |                           |                 |
| 42296     | HD 148857                     | 16 25.9              | +2 12                | 06 11                   | 06:25                 | 00 <sup>h</sup> 43E | +02° 10'    | Fe ARC<br>ND 110          | 14-14-14        |
| 42296F    | old G12 III J                 | 30 <sup>s</sup> in   | 30 <sup>s</sup> on J | F = .96 B               | Sp T. = 16° F         |                     |             | Fe arc<br>no filter       | 30, 30          |
| 42297     | SKY                           | HA = 0               | -15°                 | 14:33                   | 14:46                 | 2 70W               |             | Fe arc<br>no filter       | 30 <sup>s</sup> |
| 42298     | SKY                           | "                    | "                    | 14:52                   | 15:03                 | 2 57W               |             | "                         | "               |
| 42298F    | new G12                       | 21 55.9              | -12 35               | F = .96 B               | Sp T. = 16° F         |                     |             |                           |                 |



Spectr. Temp.  $16^{\circ}\text{F}$ .....Dome Temp./Hum.  $-10^{\circ}\text{C}$ .....58%Transparency Conditions  $\text{GOOD} \rightarrow \text{V. HAZY} \rightarrow \text{GOOD}$ 

Focus.....903.....

270

Spectr. Temp.  $12^{\circ}\text{F}$ .....Dome Temp./Hum.  $-15^{\circ}\text{C}$ .....85%

| Comparison<br>Type/Filter Exp                               | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.  | Inst.      | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program        | Remarks                        | Quality           |
|---|-----------|--------|--------------|------|------------|------------------|------|----------|------|----------------|--------------------------------|-------------------|
| Fe REC<br>ND 1.10<br>52<br>4810                             | 400/140   | 2-3    | 6.11         | B8   | G-12       | G-12/<br>.4908   | 9/5  | IIa0-E   | A    | Ap-MR          |                                | Fine              |
|   |           |        |              |      |            |                  |      | IIa0-E   |      |                |                                |                   |
|   |           |        |              |      |            |                  |      | IIa0-E   |      |                |                                |                   |
| Fe REC<br>ND 1.10<br>Fe REC<br>ND 1.10<br>Fe REC<br>ND 1.10 | 400/140   | 2-3    | 7.5          | B9   | G-12       | G-12/<br>.498    | 13/5 | IIa0-E   | B    | Ap-MR          |                                | Fine              |
|   | 100/140   |        | 7.26         | A3   | "          | "                | "    | "        | A    | Am MR          | V. HAZY plate no. 93           | Fine              |
|   | 40/140    | 3-4    | 6.75         | A2   | "          | "                | 9/5  | "        | B    | Ap-MR          | BROKEN 2 PIECES<br>plate no 92 | Fine              |
|   | 100/140   |        | 6.79         | A0   | "          | "                | "    | IIa0-E*  | A    | Am MR          | BROKEN 2 PIECES                | Fine              |
|   | 100/140   | 3-4    | 7.19         | A0   | "          | "                | 13/5 | "        | B    | Am MR          | BROKEN<br>2 PIECES             | Fine              |
|   |           |        |              |      |            |                  |      | "        |      |                |                                |                   |
|   |           |        |              |      |            |                  |      | "        |      |                |                                |                   |
| Fe REC<br>ND 1.10<br>Fe REC<br>ND 1.10<br>Fe REC<br>ND 1.10 | 00/73     |        | 3.86         | A1 V | G12        | G12/<br>.498     | 9/5  | "        | A    | Blu Bright Bin | BROKEN 2 PIECES                | Fine              |
|   |           |        |              |      |            |                  | 9    | III J    | B    |                |                                |                   |
|   | 40/400    |        |              |      | G12        | G12/.498         | 9/9  | III J    | B    |                | ND 1.10 in front of slit       | wh                |
|   | 40/300    |        |              |      | New<br>G12 | NG12/.498        | 9/9  | III J    | B    |                | "                              | } already<br>used |
|   |           |        |              |      | New<br>G12 | "                | 9/9  | "        |      |                |                                |                   |





Spectr. Temp. ....

Dome Temp./Hum. ....

Transparency Conditions ..... 272

Focus ..... 96 B

Spectr. Temp. .... 20° F

Dome Temp./Hum. ....

| Comparison<br>Type/Filter | Exp   | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp. | Inst.      | Grating/<br>Tilt | Slit               | Emulsion | P.H. | Program | Remarks                                   | Quality |
|---------------------------|-------|-----------|--------|--------------|-----|------------|------------------|--------------------|----------|------|---------|---|---------|
| W8                        | 60    | 20/100    |        |              |     | G130       | G43/.413         | 9/9                | IV-N     | A    | test    | v filter in front of slit<br>unsensitized |         |
| W8                        | 30-35 |           |        |              |     | G12        | G12/.493         | 9                  | III05    | B    |         |   |         |
| W8                        | 30-35 |           |        |              |     | new<br>G12 | . new<br>G12/.63 | 9                  | III05    | B    |         |   |         |
|                           |       |           |        |              |     |            | II00             | 6 <sup>m</sup> D1) | 65° F    |      | 16 161  |   |         |
|                           |       |           |        |              |     |            |                  |                    |          |      | 16 156  |   |         |

273

Wed - Thurs

Date Feb. 15 - 16, 1978 Observers R. M. T. ....

Emulsion Batches:

..09802E.30097 - 02028

..D.0.E.2.0.077 - 14028

| 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 X | Declination       | Comparison<br>Type/Filter     | Exp.          |
|------------------|--------------------------|----------------------|---------------------|-------------------------|-----------------------|---------------------|-------------------|-------------------------------|---------------|
| 42300            | HD 22468                 | 3 <sup>h</sup> 31.6  | 0° 16               | 18:27                   | 19:29                 | 0 <sup>h</sup> 19 W | 00° 39.4          | Fe Arc<br>ND 1-10             | 4-4           |
| 42301            | HD 45412 = RT Aur        | 6 <sup>h</sup> 22.1  | 30° 33.3            | 19:41                   | 20:26                 | 0 <sup>h</sup> 35 E | +30 38            | Fe Arc<br>ND 1-10             | 14-4-         |
| 42301T           | Spot Cal'n for 42300     |                      |                     | 15 min @                | 15 V D3<br>4810       | 7 V D1<br>Hd        | 7 V D<br>5450     |                               |               |
| 42301F           | Focus Test               | G12 "Old"            |                     |                         |                       |                     |                   | None                          | 5/5           |
| 42302            | HD 45412                 | 6 <sup>h</sup> 22.1  | 30° 33.3            | 20:33                   | 21:14                 | 0 <sup>h</sup> 13 W | +30 38            | Fe Arc<br>ND 1-10             | 12-127        |
| 42302F           | Focus Test               | G12 "New"            |                     |                         |                       |                     |                   |                               | 5/5           |
| 42303            | HD 62509 - β Gem         | 07 <sup>h</sup> 39.2 | +27° 16             | 21:21                   | 21:23                 | 0 <sup>h</sup> 55 E | +28° 15           | Fe Arc<br>ND 1-10             | 18-1          |
| <del>42304</del> | <del>HD 46595</del>      | <del>06 29.2</del>   | <del>+15 25</del>   | <del>21:33</del>        |                       | <del>W</del>        | <del>+15 29</del> | <del>Fe Arc<br/>ND 1-10</del> | <del>14</del> |
| 42303T           | Spot Cal'n for 42301 → 3 |                      |                     | 15 min @                | D4<br>15 V 3900       | D3<br>9300          | D2<br>4810        |                               |               |
| 42303F           | Focus Test               | G12 "Old"            |                     |                         |                       |                     |                   | None                          | 5/5           |



Spectr. Temp. 20°F ..... Dome Temp./Hum. 20°F.../80% Transparency Conditions ... thin cloud ..... 274

Focus 96-B .....

Spectr. Temp. 20°F ..... Dome Temp./Hum. 16°F.../85%

| Comparison<br>Type/Filter Exp | Exp. Mtr. | Seeing      | Ptg.<br>Mag. | Sp.     | Inst.   | Grating/<br>Tilt | Slit     | Emulsion | P.H.       | Program     | Remarks      | Quality                     |
|-------------------------------|-----------|-------------|--------------|---------|---------|------------------|----------|----------|------------|-------------|--------------|-----------------------------|
| 100/14                        | 1-2       | 6.8         | G01          | G16R    | G16/7B  | 13/5             | 09802e   | A        | RS         | Ch/Fgi      |              | sl. str                     |
| 100/183                       | 1"        | 5.3-<br>6.5 | F1-G0        | G12     | G12/496 | 13/5             | IIA0E    | B.       | Ceph/Evans |             |              | fine -                      |
| 100/136                       | 1-2       | 5.3-<br>6.5 | F1-G0        | G12 new | G12/.65 | 13/5             | IIA0-E   | A        | Ceph/Evans | New Grating |              | center<br>v. sl. to<br>blue |
| 100/16                        | 2         | 2.15        | K0           | "       | "       | 13/5             | IIA0e    | A        | Std Vel    |             |              | center<br>sl. no blue       |
| 100/14                        | 1-2       | 2.8         | F6-<br>G5    | G12 old | G12/496 | 13/5             | IIA0-E   | B        | Ceph/Evans | cloud       |              | sl. str                     |
| 100/57                        | 1-2       | 2.8         | F6-<br>G5    | G12 old | G12/496 | 13               | IIA0     | B        | 20°F set   | 96B         |              | center<br>sl. blue          |
|                               |           |             |              |         |         |                  |          |          |            | Strip       | Ceph no work |                             |
|                               |           |             |              | II 20   | 5 1/2"  |                  |          |          | 18         | 181         |              |                             |
|                               |           |             |              | 098     | 4"      |                  | D19 68°F |          | 26         | 166         |              |                             |

275

Fri-Sat  
Date Feb. 17/18/78... Observers Fgi-Tn / Bla-Tn...

Emulsion Batches:

098-02E 30097 - 02028

II-0-E 20077 - 14028

| 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 | Exposure |
|--|------------------------|---------------------|---------------------|-------------------------|-----------------------|--------------------|--------------------|---------------------------|----------|
| 42304  | HD 22468               | 3 <sup>h</sup> 31.6 | +0° 16              | 18:30                   | 19:56                 | 01:52 W            | +0° 42.1           | Fe Arc<br>NO FILTER       | 4-4-     |
| 42305  | HD 22468               | 3 <sup>h</sup> 31.6 | +0° 16              | 19:57                   | 21:43                 | 03:39 W            | +0° 42.1           | Fe Arc<br>NO FILTER       | 4-4-     |
| 42305T   | Spot Calc for 42304-06 |                     |                     |                         | 15 min @              | D3 15V<br>4810     | D12V D2<br>Hd 5450 | 7U                        |          |
| 42306  | HD 65626               | 7 <sup>h</sup> 54.5 | +57° 33             | 21:49                   | 23:35                 | 01:05 W            | +57° 29            | Fe Arc<br>NO FILTER       | 4-4-4    |
| 42307  | HD 88021/2             | 10 03.8             | +20 49              | 23 44                   | 01.59                 | 01.24 W            | +20 35             | Fe Arc<br>NO FILTER       | 1344     |
| 42307T   | Spot Calc for 42307    |                     |                     |                         | 15 min @ 15V          | D4 D3<br>3900 9300 | D2<br>4810         |                           |          |
| 42307T   | Strip Calc for 42307   |                     |                     |                         | 90 sec                |                    |                    |                           |          |
| arc electrodes erroneously replaced with stainless steel |                        |                     |                     |                         |                       |                    |                    |                           |          |











279

Date Feb 19/20 78/SUN-MON Observers Fgi-Tn/Blu-Tn

Emulsion Batches:

0.98-0.2E 30097 - 18028

11e.0-E 20077 - 15028

11a.1-E 01106 - 10028

| 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   |
|-----------|-----------------------------------|------------------------------------|---------------------|-------------------------|-----------------------|--------------------------------|-------------|---------------------------|-------|
| 42315     | HD 22468                          | 03 <sup>h</sup> 31.6               | +0° 16'             | 18:32                   | 20:22                 | 02:27 W                        | +0° 39'     | Fe Arc<br>NO FILTER       | 4-4   |
| 42315T    | Spot Colln for 42315-17           |                                    |                     | 15 min @                |                       | 15V D3 7V D1<br>4810 Hx 5450   |             |                           |       |
| 42316     | HD 65626                          | 07 <sup>h</sup> 54.5               | +57° 33'            | 20:27                   | 22:07                 | 00:13 E                        | +57 27.9    | Fe Arc<br>NO FILTER       | 4-4   |
| 42317     | HD 65626                          | 07 <sup>h</sup> 54.5               | +57° 33'            | 22:07                   | 00:38                 | 02:18 W                        | +57 27.9    | Fe Arc<br>NO FILTER       | 4-4   |
| 42318     | HD 112028                         | 12 <sup>h</sup> 48.3               | +83° 58'            | 00:48                   | 01:29                 | 01 46 E                        | +83° 39'    | Fe Arc<br>ND 1.10         | 13-13 |
| 42318T    | Spot Colln for 42318, 21, 23-25.  |                                    |                     | 15 min @                |                       | D4 D3 D2<br>15V 3900 4300 4810 |             |                           |       |
| 42319     | HD 106677                         | 12 <sup>h</sup> 11 <sup>m</sup> .0 | +73° 07'            | 01:34                   | 02 47                 | 00 12 W                        | +72° 48'    | Fe Arc<br>No Filter       | 4-4   |
| 42320     | HD 118216                         | 13 <sup>h</sup> 30 <sup>m</sup> .3 | +37° 42'            | 02:55                   | 03 29                 | 00 23 E                        | +37 25      | Fe Arc<br>No Filter       | 4-4   |
| 42321     | HD 124897                         | 14 <sup>h</sup> 11 <sup>m</sup> .1 | +19° 42'            | 03:36                   | 03 37                 | 00 56 E                        |             | Fe Arc<br>ND 1.10         | 20-   |
| 42322     | HD 139892                         | 15 35.6                            | +36 58              | 03 43                   | 04 45                 | 01 12 E                        | +36 51      | Fe Arc<br>None            | 6-6   |
| 42322T    | SPOT Colln for 42322              |                                    |                     | 15 min @ 15V            |                       | D4 D4 D4<br>4100 4300 4810     |             |                           |       |
| 42323     | HD 151676                         | 16 43 42                           | -15 30              | 04 50                   | 05 30                 | 01 36 E                        | -15° 29'    | Fe Arc<br>ND 1.10         | 13-13 |
| 42324     | HD 151676                         | 16 43 42                           | -15 30              | 05 31                   | 06 04                 | 01 02 E                        | -15° 29'    | Fe Arc<br>ND 1.10         | 13-13 |
| 42325     | HD 151676                         | 16 43 42                           | -15 30              | 06 05                   | 06 33                 | 00 33 E                        | -15° 29'    | Fe Arc<br>ND 1.10         | 13-13 |
| 42325T    | Strip Colln for 42318, 21, 23-25. |                                    |                     | 90 sec                  |                       |                                |             |                           |       |
| 42325F    | Focus                             |                                    |                     |                         |                       |                                |             | None                      | 4-4   |



Spectr. Temp.  $+180^{\circ}\text{F}$ Dome Temp./Hum.  $18^{\circ}\text{F}/64\%$ Transparency Conditions  $SI$  Hazy - cloud

280

Focus  $888$ 

Reset ST on Console - 1 min

Spectr. Temp.  $+$ Dome Temp./Hum.  $+7^{\circ}\text{F}/92\%$ 

This is correct as far as H/L circle

| Companion<br>Type/Filter Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.   | Inst.     | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program      | Remarks            | Quality                                    |
|------------------------------|-----------|--------|--------------|-------|-----------|------------------|------|----------|------|--------------|--------------------|--|
| Fe Arc<br>NO Filter<br>4-5   | 100/140   | 1"     | 6.68         | G0V   | G16R      | G16R/.7B         | 13/5 | 098-02-c | A    | RS CVn/Fgi   | thick cloud        | vsl str                                    |
| Fe Arc<br>NO Filter          | 100/139   | 1"     | 7.1          | G0    | G16R      | G16R/.7B         | 13/5 | 098-02-c | B    | RS CVn/Fgi   | hazy               | fine<br>dbl lines                          |
| Fe Arc<br>NO Filter<br>4-5   | 100/140   | 1-2"   | 7.1          | G0    | G16R      | G16R/.7B         | 13/5 | 098-02-c | A    | RS CVn/Fgi   | clouds             | vsl wk                                     |
| Fe Arc<br>NO Filter<br>4-5   | 100/86    | 3"     | 5.2          | A0    | G12 (new) | G12/.65B         | 13/5 | IIa0-c   | B    | Shell-Blu    | New G12            | $\alpha$ 12 51.5                           |
| Fe Arc<br>NO Filter<br>4-5   | 400/140   | 1-2    | 7.55         | K0    | G16 Red   | G16/.7B          | 13/5 | 098-02E  | A    | RS CVn/Fgi   |                    | fine<br>dbl lines                          |
| Fe Arc<br>NO Filter<br>4-5   | 40/13     | "      | 5.33         | F2II  | G16R      | G16/.7B          | 13/5 | 098-02E  | B    | RS CVn/Fgi   | Ft. Red comparison | fine                                       |
| Fe Arc<br>NO Filter<br>4-5   | 40/18     |        | 1.29         | K000p | G12 new   | G12/.65B         | 13/5 | IIa0E    | A    | Std. Vel.    |                    | vsl str                                    |
| Fe Arc<br>NO Filter<br>4-5   | 200/200   |        | 4.95         | B7Y   | G12 new   | G12/.65B         | 13/5 | IIIaJ-E  | B    | SP Blu/Ly    | 13 broken 2 pcs,   | vsl str<br>comp strong<br>heavy W/overlay  |
| Fe Arc<br>NO Filter<br>13    | 400/85    | 1-2"   | 6.19         | A3    | G12       | G12/.65B         | 17/5 | IIa0E    | A    | Ecl. Bin-Blu |                    | fine<br>comp str                           |
| Fe Arc<br>NO Filter<br>4-5   | 400/83    | 2"     | 6.19         | A3    | G12       | G12/.65B         | 17/5 | IIa0E    | B    | Ecl. Bin-Blu |                    | fine<br>comp str                           |
| Fe Arc<br>NO Filter<br>4-5   | 100/85    | 1-2"   | 6.19         | A3    | G12       | G12/.65B         | 17/5 | IIa0E    | A    | Ecl. Bin-Blu |                    | fine<br>comp str                           |
|                              |           |        |              |       |           |                  |      | IIa0-E   |      |              |                    | IIa0 6 <sup>m</sup> 20 168                 |
|                              |           |        |              |       |           |                  |      | IIa0-E   |      |              |                    | 098 4 <sup>m</sup> 23 169                  |
|                              |           |        |              |       |           |                  |      | IIa0-E   |      |              |                    | IIIaJ 6 <sup>m</sup> 15 252                |
|                              |           |        |              |       | G17 N     | G17/.65B         |      | IIa0     | B    | set 888      | Temp ?             | center ST rod in blue<br>to SI blue in red |

281

Date Feb. 21-22. Tues-Wed Observers Fg. Tr. But.....

Emulsion Batches:

.098-02E. 20097-18028

.Hal-e. 20077-20028

| 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    |
|-----------|-------------------------|--------------|---------------------|-------------------------|-----------------------|--------------------|---------------|---------------------------|--------|
| 42326     | HD 22468                | 03 31.6      | +0° 16              | 18 35                   | 20 00                 | 2 14 W             | +0 30         | Fe Arc<br>None            | 4-4-4  |
| 42327     | HD 22468                | 03 31.6      | +0° 16              | 20 01                   | 22 02                 | 4 16 W             | +0° 30        | Fe Arc<br>NO FILTER       | 4-4-4  |
| 42327T1   | Spot Calc for 42326-27  |              |                     | 15 min @                | 15V D3<br>4810        | 7V D1<br>H2        | 7V D2<br>4550 |                           |        |
| 42327T2   | Strip Calc for 42326-27 |              |                     | 90 sec                  |                       |                    |               |                           |        |
| 42327F    | Focus Test              |              |                     |                         |                       |                    |               |                           | 6/5    |
| 42328     | HD 51418                | 06 52.2      | +12 26              | 22 17                   | 23 59                 | 2 50 W             | +12 25        | Fe Arc<br>ND 1-10         | 11-10  |
| 42328T    | Spot Calc for 42328-30  |              | 30                  | 15 min @                | 15V                   | D4 D3<br>3900 4300 | D2<br>4810    |                           |        |
| 42329     | HD 96003                | 10 59.3      | +13 12              | 00 05                   | 02 31                 | 01 17 W            | +12 49        | Fe Arc<br>ND 1-10         | 11-8-8 |
| 42329T    | Strip Calc for 42328-30 |              |                     |                         |                       | 90 sec             |               |                           |        |
| 42330     | HD 138406               | 15 26.8      | +62° 05'            | 02 38                   | 05 33                 | 00 05 E            | +61 51        | FE ARC<br>ND 1.1          | 9-9-9  |



Spectr. Temp. 20°F

Dome Temp./Hum. 46°F/.69%

Transparency Conditions. some thin cloud - 282

Focus 88B

Spectr. Temp. +11°F

Dome Temp./Hum. 47°F/.88%

tilt on new G-12 should go to .70 good T<sub>2</sub>

| Comparison Type/Filter Exp.     | Exp. Mtr. | Seeing          | Ptg. Mag. | Sp.            | Inst.   | Grating/Tilt     | Slit | Emulsion             | P.H. | Program                           | Remarks    | Quality |
|---------------------------------|-----------|-----------------|-----------|----------------|---------|------------------|------|----------------------|------|-----------------------------------|------------|---------|
| Fe Arc<br>None<br>Fe Arc<br>ND1 | 100/125   | 2-3'            | 6.68      | G0V            | G16 Red | G16/1.7B         | 13/5 | 098-02E              | A    | RSCV <sub>2</sub> /F <sub>2</sub> | Reversed   |         |
|                                 | 100/131   | 3               | 6.68      | G0V            | "       | "                | "    | "                    | B    | "                                 |            |         |
|                                 |           |                 |           |                |         |                  |      | "                    |      |                                   |            |         |
|                                 |           |                 |           |                |         |                  |      | "                    |      |                                   |            |         |
|                                 | 6/5       | 1 min - out out |           |                | G16 Red | G16/1.7B         |      | "                    | B    | set 88B                           | Temp       |         |
| Fe Arc<br>ND1                   | 100/105   | 3-4             | 6.61      | A0             | G12     | G12/1.7B         | 9/5  | II <sub>20</sub> O-E | B    | A <sub>p</sub> MR                 |            | Fine    |
|                                 |           |                 |           |                |         |                  |      | "                    |      |                                   |            |         |
| Fe Arc<br>ND1                   | 100/110   | 3-4-8           | 6.75      | A <sub>p</sub> | G12     | G12/1.7B         | 9/5  | II <sub>20</sub> O-E | A    | A <sub>p</sub> MR                 |            | vs/4t   |
|                                 |           |                 |           |                |         |                  |      | II <sub>20</sub> O-E |      |                                   |            |         |
| Fe Arc<br>ND1                   | 100/93    | 8-10            | 6.79      | A0             | G12     | G12/1.7B         | 9/5  | "                    | B    | A <sub>m</sub> MR                 | thin cloud | slw     |
|                                 |           |                 |           |                |         |                  |      |                      |      |                                   |            |         |
|                                 |           |                 |           |                |         | 098-02           |      |                      |      |                                   |            | 23 183  |
|                                 |           |                 |           |                |         | II <sub>20</sub> |      |                      |      |                                   |            | 19 196  |

283

\*UaO-E\* 20077-22028  
Waj-E 01106-10028

Emulsion Batches:

.098-02E 30097-18028 no 4x5  
.098-02E\* 20097-22028  
UaO-e... 20077-20028

Date Feb 22-23 Wed-Thur Observers Rm-Tu/Br-Tu.....

| 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.  |
|-----------|----------------|---|---------------------|-------------------------|-----------------------|----------------------------------|-----------------------|---------------------------|-------|
| 42331     | HD22968        | 3 <sup>h</sup> 31.6                             | 0° 16'              | 18:35                   | 19 16                 | 01 33W                           | +00 <sup>h</sup> 28.1 | Fe Arc<br>None            | 4-4-4 |
| 42332     | "              | "   | "                   | 19 18                   | 20:39                 | 02 <sup>h</sup> 47W              | "                     | "                         | 7-7-7 |
| 42333     | "              | "   | "                   | 20 30                   | 21:39                 | 03 56W                           | +00 29                | "                         | 6-6-6 |
| 42333T1   | Spot Calc for  | 42332-33  |                     | 15 min @                |                       | 15V D3<br>4810                   | 8VD1<br>Hx            | 8VD2<br>5450              |       |
| 42333T2   | Strip Calc for | 42332-33  |                     |                         | 120sec                |                                  |                       |                           |       |
| 42333T3   | Strip Calc for | 42331   |                     |                         | 90sec                 |                                  |                       |                           |       |
| 42334     | HD8444T        | 9 <sup>h</sup> 40.2                             | +24° 14'            | 23:35                   | 23:43                 | 00 <sup>h</sup> 9 <sup>m</sup> E | +23° 59.9             | Fe Arc<br>ND 1.10         | 9-9-9 |
| 42335     | HD 88021/2     | 10 03.8   | +20 49              | 23:45                   | 02:00                 | 01 46W                           | +20 33                | Fe Arc<br>ND 1.10         | 7-8-  |
| 42335T    | Spot Calc for  | 42334-36  |                     | -                       | 15 min @              | D4<br>15V 3900                   | D3<br>4300            | D2<br>4810                |       |
| 42336     | HD114846       | 13 <sup>h</sup> 08 <sup>m</sup> 06 <sup>s</sup> | -18° 18'            | 02 06                   | 04 28                 | 01 09W                           | -18° 36'              | Fe Arc<br>ND 1.10         | 7-7-  |
| 42337     | HD 124897      | 14 11.1   | +19 42              | 04 33                   | 04 37                 | 0 16W                            | +19 26                | "                         | 14-11 |
| 42338     | HD 139892      | 15 35.6   | +36 58              | 04 44                   | 05 21                 | 0 23 E                           | +36 48                | Fe Arc<br>None            | 3-3-3 |
| 42338T    | Spot Calc for  | 42338-39  |                     | 15 min @                | 15V                   | D4<br>4100                       | D4<br>4300            | D4<br>4810                |       |
| 42339     | HD 141513      | 15 44.4   | -3 07               | 05 28                   | 06:09                 | 00 15W                           | -3 14                 | Fe Arc<br>None            | 7-8   |
| 42340     | HD 124897      | 14 11.1   | +19 42              | 06 14                   | 06 17                 | 01 55W                           | +19 27                | Fe Arc<br>ND 1.10         | 25-2  |



Spectr. Temp. +20°F

Dome Temp./Hum. 20°F/75%

Transparency Conditions Fine occasional cloud 294

Focus 88B

Spectr. Temp. +13°F

Dome Temp./Hum. +7°F/95%

\*\* All Fe Arcs contaminated

| Comparison Type/Filter Exp | Exp. Mtr. | Seeing           | Ptg. Mag. | Sp.        | Inst.  | Grating/Tilt | Slit | Emulsion | P.H. | Program                | Remarks                            | Quality              |
|----------------------------|-----------|------------------|-----------|------------|--------|--------------|------|----------|------|------------------------|------------------------------------|----------------------|
| Fe 27 22028 200            | 400/110   | 1-2              | 6.68      | G0V        | G16R   | G16/7B       | 13/5 | 098-02E  | A+B  | RS CV <sub>n</sub> /Fe | **                                 |                      |
| " 7-7-7                    | 400/170   | 2"               | "         | "          | "      | "            | 13/5 | 098-02E* | A    | "                      | **<br>Can Pass                     | vslstr               |
| " 6-6-6                    | 400/111   | 2"               | "         | "          | "      | "            | 13/5 | 098-02E* | B    | "                      | "                                  | fine                 |
|                            |           |                  |           |            |        |              |      | 098-02E* |      |                        | "                                  |                      |
|                            |           |                  |           |            |        |              |      | 098-02E* |      |                        | "                                  |                      |
|                            |           |                  |           |            |        |              |      | 098-02E  |      |                        | **<br>some cloud                   |                      |
| Fe 27 22028 200            | 200/63    | 2                | 3.1       | G0.1       | G12new | G12/17       | 9/5  | IIa0E    | A    | Ceph-Evans             |                                    | Fine                 |
| Fe 27 22028 200            | 400/130   | 1-2              | 7.2       | G65<br>+A2 | "      | "            | 13/5 | "        | B    | VB Bl <sub>n</sub>     | some haze - seeing going           | Fine                 |
|                            |           |                  |           |            |        |              |      | "        |      |                        | "                                  |                      |
| Fe 27 22028 200            | 400/110   | PITS<br>VARIABLE | 6.27      | A0         | G12new | G12/17       | 13/5 | IIa-0E   | A    | SB-Bl <sub>n</sub>     | South of pair<br>Brt comp 7" apart | Fe Arc bad<br>vsl wk |
| " 7-7-7                    | 400/28    | OK               | 1.29      | K          | "      | "            | 9/9  | IIa0-E*  | B    | Std Vel                |                                    | Fine                 |
| Fe 27 22028 200            | 200/135   | 2"               | 4.95      | B7V        | "      | "            | 13/5 | IIIaJ-E  | A    | SB Bl <sub>n</sub> /Ly | SE comp                            | fine                 |
|                            |           |                  |           |            |        |              |      | "        |      |                        |                                    |                      |
| Fe 27 22028 200            | 400/230   | 3"               | 3.50      | A0V        | G8     | G16/25       | 9/5  | "        | B    | SB Bl <sub>n</sub>     |                                    | Fine                 |
| Fe 27 22028 200            | 400/40    | "                | 1.29      | K          | "      | "            | 9/9  | IIa0-E*  | A    | Std Vel                |                                    | Fine                 |

|       |       |        |
|-------|-------|--------|
| IIa0  | 5 1/2 | 18-186 |
| IIIaJ | 5 1/2 | 15-251 |
| 098   | 3 1/2 | 22-228 |
| 098*  | 5 1/2 | 22-228 |

285

## Emulsion Batches:

098-02E 30097 - 22028

IIIaF-E 23117 - 23028

Date Feb 25-26 Sat-Sun 1978 Observers Tm-Bla-Fgl.....

| 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.    |
|---------------------|----------------------|----------------------|---------------------|-------------------------|-----------------------|--------------------|---------------|---------------------------|---------|
| 42341               | HD 22468             | 03 31.6              | +0 16               | 20 20                   | 22 02                 | 04 33 W            | +00 33        | Fe Arc<br>None            | 4-4-4   |
| 42341T              | Spot Calc for 42341  |                      |                     | 15 min                  | @ 4810                | 15V D3 7V D1<br>Hd | 7V D2<br>5450 |                           |         |
| 42342               | HD 19356 (β Per)     | 03 <sup>h</sup> 01.7 | +40° 34             | 22 12                   | 23 02                 | 06 01 W            |               | Fe Arc<br>UV filter       | 11-V-11 |
| 42342T1             | Spot Calc for 42342  |                      |                     | 15 min @ 7V             | D4<br>5100            | D2<br>Ma           | D3<br>5450    |                           |         |
| 42342T2             | Strip Calc for 42341 |                      |                     |                         | 90 sec                |                    |               |                           |         |
| 42340A <sup>x</sup> | HD 22484             | 03 31.8              | +0 05               | 20 08                   | 20 18                 | 2 49 W             |               | Fe Arc<br>None            | 4       |
| note <sup>x</sup>   |                      |                      |                     |                         |                       |                    |               |                           |         |
|                     |                      |                      |                     |                         |                       |                    |               |                           |         |
|                     |                      |                      |                     |                         |                       |                    |               |                           |         |
|                     |                      |                      |                     |                         |                       |                    |               |                           |         |
|                     |                      |                      |                     |                         |                       |                    |               |                           |         |
|                     |                      |                      |                     |                         |                       |                    |               |                           |         |
|                     |                      |                      |                     |                         |                       |                    |               |                           |         |
|                     |                      |                      |                     |                         |                       |                    |               |                           |         |
|                     |                      |                      |                     |                         |                       |                    |               |                           |         |
|                     |                      |                      |                     |                         |                       |                    |               |                           |         |
|                     |                      |                      |                     |                         |                       |                    |               |                           |         |
|                     |                      |                      |                     |                         |                       |                    |               |                           |         |
|                     |                      |                      |                     |                         |                       |                    |               |                           |         |
|                     |                      |                      |                     |                         |                       |                    |               |                           |         |
|                     |                      |                      |                     |                         |                       |                    |               |                           |         |
|                     |                      |                      |                     |                         |                       |                    |               |                           |         |

return to (correct) iron electrodes in arc



Spectr. Temp.  $22^{\circ}\text{F}$ .....Dome Temp./Hum  $72^{\circ}\text{F}/80\%$ .....Transparency Conditions  $\dots$  *sl. hazy - some cloud*..... 7/26Focus  $88-B$ .....Spectr. Temp.  $21^{\circ}\text{F}$ .....Dome Temp./Hum  $72^{\circ}\text{F}/85\%$ .....

| Comparison<br>Type/Filter Exp. | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp. | Inst. | Grating/<br>Tilt      | Slit        | Emulsion                            | P.H. | Program           | Remarks                             | Quality                  |
|--------------------------------|-----------|--------|--------------|-----|-------|-----------------------|-------------|-------------------------------------|------|-------------------|-------------------------------------|--------------------------|
| Fe K $\alpha$<br>None 4-4-7    | 400/92    | 4"     | 6.68         | G0V | G16R  | G16/7B                | 13/5        | 098-02E                             | A    | PSCU $\alpha$ Fgi | Reverse/unstable                    | fine                     |
| Fe K $\alpha$<br>W.K.M.        | 10/ ?     |        | 2.2V         | B8V | G16R  | G16/7B                | 9/9         | III $\alpha$ F-E<br>W-F-E<br>09802E | B    | ZL-Algol          | UV filter above slit                | sl wh<br>comp wh<br>good |
| Fe K $\alpha$<br>None          |           |        | 4.9          | F8V | G16R  | G16/7B                | 13/5        | 09802E                              | B    | Mistake           | Taken before 42341<br>saved any way | ok                       |
|                                |           |        |              |     |       | III $\alpha$ F<br>098 | 4" D19 69°F |                                     |      |                   |                                     |                          |

287

Emulsion Batches:

098-02 E 30097-22028

II 00-E 20077-20028

Date Feb 26-27 Sun-Mon Observers Cne-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.  |
|-----------|-------------------------|----------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| 42343     | HD 22468                | 3 <sup>h</sup> 31.6  | 0° 16'              | 18 40                   | 19 42                 | 2:09 W            | +00 29      | Fe arc<br>None            | 4-4   |
| 42343T1   | Spot Calc for 42343     |                      |                     |                         | 15 min @              | 15V D3<br>4810    | 7V D1<br>Hd | 7V D2<br>5450             |       |
| 42343T2   | Strip Calc for 42343    |                      |                     |                         | 90 sec                |                   |             |                           |       |
| 42344     | HD 27192                | 04 <sup>h</sup> 12.6 | +50° 41'            | 23:32                   | 00 12                 | 6 03 W            | +50 53      | Fe arc<br>ND 110          | 8-8-8 |
| 42345     | HD 112028               | 12 48.3              | +83 58              | 00 21                   | 01 08                 | 1 33 E            | +83 31      | Fe Arc<br>ND 110          | 8-8-8 |
| 42345T1   | Spot Calc for 42344-46  |                      |                     |                         | 15 min @              | D4<br>15V 3900    | D3<br>4300  | D2<br>4810                |       |
| 42345T2   | Strip Calc for 42344-46 |                      |                     |                         | 90 sec                |                   |             |                           |       |
| 42346     | HD 88021/2              | 10 03.8              | +20° 49'            | 01 14                   | 03 44                 | 3 48 W            | +20 27      | Fe Arc<br>ND 110          | 8-9-8 |



Spectr. Temp. +26°F ..... Dome Temp./Hum. 120°F / 66%

Transparency Conditions *Excellent (not too long)* ..... 288

Focus ..... 0 *changed from 88B*

Spectr. Temp. +16°F ..... Dome Temp./Hum. 99°F / 97%

Comparison  
Type/Filter Exp

Fe on  
D2  
545D

Fe on  
A 110

Fe on  
D2  
420

Fe on  
A 110

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.        | Inst. | Grating/Tilt | Slit | Emulsion           | P.H. | Program   | Remarks  | Quality                           |
|-----------|--------|-----------|------------|-------|--------------|------|--------------------|------|-----------|--|-----------------------------------|
| 400/51    | 3"-5"  | 6.68      | G0U        | G16R  | G16/1.7B     | 13/5 | 098-02E            | 4    | RSCUn-Fgi | much cloud & snow                                | fine                              |
|           |        |           |            |       |              |      | "                  |      |           |  |                                   |
|           |        |           |            |       |              |      | "                  |      |           |  |                                   |
| 100/100   | 3"     | 5.50      | B2 IV      | G12   | G12/1.7      | 13/5 | IIa-0E             | A    | SB2-Lne   |  | fine                              |
| 40/102    |        | 5.2       | B3         | G12   | G12/1.7      | 13/5 | IIa-0E             | B    | Shell-Bln | Consol. RA 12 51.6 +26<br>more cloud s/snow<br>R | vsl str                           |
|           |        |           |            |       |              |      |                    |      |           |  |                                   |
| 200/78    | 3'-4'  | 7.20      | g65+<br>A2 | G12   | G12/1.7      | 13/5 | IIa-0E             | A    | VB-Bln    | RA 10 0800 OK<br>cloud Much cloud                | fine, but<br>thin star<br>sl. 1.2 |
|           |        |           |            |       |              |      |                    |      |           |  |                                   |
|           |        |           |            |       |              |      | 098 4 <sup>m</sup> | 69°F |           |  |                                   |
|           |        |           |            |       |              |      | IIa 6 <sup>m</sup> | 68°F |           |  |                                   |





Spectr. Temp. 23°F

Dome Temp./Hum. +20°F/70%

Transparency Conditions Hazy → cloudy 200

Focus O.R.

Spectr. Temp. /

Dome Temp./Hum. /

| Comparison<br>Type/Filter Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp. | Inst.   | Grating/<br>Tilt | Slit | Emulsion             | P.H. | Program  | Remarks  | Quality            |
|-------------------------------|-----------|--------|--------------|-----|---------|------------------|------|----------------------|------|----------|--|--------------------|
| Fe H $\alpha$<br>V filter     | 40/50?    | 2-3    | 2.2 V        | B8V | G16 Red | G16/0.7B         | 9/9  | IIIaF-E              | A    | 2d Algol | * Reversed no Exp motor  | comp with<br>sl wk |
| "                             | 40/150?   | "      | "            | "   | "       | "                | 9/7  | "                    | B    | "        | * cloud too  | wk                 |
| 03<br>5450                    |           |        |              |     |         |                  |      |                      |      |          | * Junk obscuring slit in partial way<br>Exp motor still problem? | v sl<br>wk         |
| Fe H $\alpha$<br>V filter     | 40/34?    | 1-2    | 2.2 V        | B8V | G16 Red | G16/0.7B         | 9/7  | IIIaF-E              | A    | 2d Algol |  | wk                 |
|                               |           |        |              |     |         |                  |      | IIIaF 5 <sup>m</sup> | D19  | 68°F     | 200  |                    |

291

## Emulsion Batches:

098-02. 30097-22028...

TAE... 30077-22028...

TAE... 01106-23028...

Date *Nov 1-2 Wed Thurs* Observers *Rm-Ri/Blm-Ri*.....

| 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.  |
|-----------|----------------------|-----------------------|---------------------|-------------------------|-----------------------|----------------------|-------------|---------------------------|-------|
| 42350     | 40 22468             | 3 <sup>h</sup> 31.6   | 0° 16               | 18:46                   | 20:22                 | 03 <sup>h</sup> 07 W | +00° 36.9   | Fe Arc<br>No Filter       | 7-4-4 |
| 4235091   | spot cal for plate   | 4 2350                |                     | 15 min                  |                       | 03 15V<br>4810       | D19V<br>Hd  | D270<br>5450              |       |
| 42351     | AW Per = HD 30282    | 4 <sup>h</sup> 41.1   | +36° 22.6           | 20:32                   | 23:30                 | 05 <sup>h</sup> 06 W | +36° 47     | Fe Arc<br>ND 110          | 8-8-8 |
| +23511    | spot cal for plates  | 42351-54, 56          |                     | 15 min @ 150V           |                       | D4<br>3900           | D3<br>4300  | D2<br>4910                |       |
| 42352     | ε Leo = HD 84441     | 9 <sup>h</sup> 40.2   | +24° 14             | 23:35                   | 23:43                 | 0 <sup>h</sup> 19 W  | +23° 57     | Fe Arc<br>ND 110          | 8-8-8 |
| 42353     | HD 88021 / 2         | 10 <sup>h</sup> 03.8  | +20° 49             | 23:46                   | 02 08                 | 02 21 W              | +20° 32'    | Fe Arc<br>ND 110          | 8-8-8 |
| 4235371   | strip cal for plates | 42351-54, 56          |                     |                         | 90 sec                |                      |             |                           |       |
| 42354     | HD 114816            | 13 08 06              | -18 18              | 02 12                   | 04 05                 | 01 15 W              | -18° 37'    | Fe Arc<br>ND 110          | 7-7-7 |
| 42355     | HD 139892            | 15 35 37              | +36° 58'            | 04:11                   | 04 54                 | 00 23 E              | +36° 42     | Fe Arc<br>ND 110          | 3-3-3 |
| 4235571   | spot cal for plates  | 42355+54              |                     |                         | 15 min @ 150V         | D4<br>4100           | D4<br>4300  | D4<br>4810                |       |
| 42356     | HD 163506 (89 HER)   | 17 <sup>h</sup> 51.4  | +26° 04             | 04:58                   | 05 38                 | 01 55 E              | +26° 07     | Fe Arc<br>ND 110          | 8-8-8 |
| 42357     | HD 164284            | 17 <sup>h</sup> 55 19 | +9 22               | 05:40                   | 06.16                 | 01 <sup>h</sup> 21 E | +9° 27      | Fe Arc<br>No Filter       | 3-3-3 |



Spectr. Temp.  $29^{\circ}\text{F}$  ( $-04^{\circ}\text{C}$ ) Dome Temp./Hum.  $-07^{\circ}\text{C}$   $65\%$  Transparency Conditions *good* 292

Focus *D.R.*

Spectr. Temp.  $14^{\circ}\text{F}$  Dome Temp./Hum.  $-13^{\circ}\text{C}$

| Exp. Mtr. | Seeing | Ptg. Mag.   | Sp.    | Inst.   | Grating/Tilt | Slit        | Emulsion           | P.H. | Program    | Remarks | Quality |
|-----------|--------|-------------|--------|---------|--------------|-------------|--------------------|------|------------|---------|---------|
| 400/110   | 3-4    | 6.68        | G01    | G16R    | G16R/1.7     | B/1.5       | 098-02E<br>098-02E | A    | RS Chy/Fgi |         | sl str  |
| 800/185   |        | 7.9-<br>2.2 | F6-G1  | G12 new | G12/1.7      | B/1.5       | IIA0 E<br>IIA0-E   | B    | Ceph/Evans |         | fine    |
| 200/65    |        | 3.1         | G04    | "       | "            | "           | "                  | A    | Ceph/Evans |         | sl str  |
| 200/130   | 4      | 7.2         | G65+AE | "       | "            | "           | "                  | B    | VB-Blu     |         | fine    |
|           |        |             |        |         |              |             | IIA0-E             |      |            |         |         |
| 400/110   |        | 6.27        | A0     | "       | "            | 20/5        | IIA0-E             | A    | SB-Blu     |         | fine    |
| 200/135   |        | 4.95        | B2Z    | "       | "            | 13/5        | IIA0-E             | B    | SB-Blu/Ly  |         | fine    |
|           |        |             |        |         |              |             | IIA0-E             |      |            |         |         |
| 400/109   |        | 5.81        | F2Ja   | "       | "            | 13/5        | IIA0-E             | A    | Ceph - Fe  |         | fine    |
| 200/100   |        | 4.77        | B2Ze   | "       | "            | 13/5        | IIA0-E             | B    | Ba-Blu     | DAWN    | fine    |
|           |        |             |        |         |              | 098 4"      | 67°                | 29   | 206        |         |         |
|           |        |             |        |         |              | IIA0 5"     | 68                 | 13   | 182        |         |         |
|           |        |             |        |         |              | IIA0 5 1/2" | 68                 | 15,  | 250        |         |         |

293

## Emulsion Batches:

Iad-E..30077-22028..

098-025.30.097..02038.

Iad-E..30077..02038.

Date Mar 2-3 Thurs/Fri Observers Linc-Ri' / KK-Ri.....

| 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.  |
|-----------|---------------------|----------------------|---------------------|-------------------------|-----------------------|-------------------|--------------------|---------------------------|-------|
| 42358     | HD 27192            | 04 <sup>h</sup> 12.6 | +50 41              | 18:45                   | 19:03                 | 1:15 W            | +50 57             | Feore<br>no 10            | 8-8-8 |
| 42359     | HD 22468            | 3 <sup>h</sup> 31.6  | +0° 16              | 19:14                   | 21:00                 | 3:49 W            | +0 29              | Feore<br>no 10            | 4-4-4 |
| 42359T1   | spot cal for plate  | 42358+60             |                     |                         | 15 min @              | 15V volts         | 3800 4300          | D4 D3<br>D2<br>4810       |       |
| 42359T2   | spot cal for plate  | 423590               |                     |                         | 15 min @              | 15V D3            | 4810 4300          | 9V D1<br>7V D2<br>5450    |       |
| 42360     | HD 27192            | 04 <sup>h</sup> 12.6 | +50 41              | 21:19                   | 22:03                 | 4:09 W            | +50 57             | Feore<br>no 11            | 8-8-8 |
| 42361     | HD 62509 60em       | 07 <sup>h</sup> 39.2 | +28° 16             | 22:10                   | 22:13                 | 0:59 W            | +28° 06            | Feore<br>no 11            | 8-16  |
| 42362     | HD 62044            | 07 37.0              | +29 07'             | 22:20                   | 23:25                 | 2: 13 W           | +28 56             | Feore<br>no 11            | 20-20 |
| 42362T1   | strip cal for plate | 42358+60             |                     |                         | 90 sec                |                   |                    |                           |       |
| 42362T2   | strip cal for plate | 42361-63             |                     |                         | 90 sec                |                   |                    |                           |       |
| 42362T3   | optical for plate   | 42361-63             |                     |                         | 15 min @              | 15V volts         | D4 D4<br>3900 4300 |                           |       |
| 42363     | HD 84441 elec       | 9 40.2               | +24 14              | 23:32                   | 23:45                 | +0:24             | +24 01             | Feore<br>no 11            | 8-8-  |
| 42364     | HD 47105            | 06 31.9              | +16 29'             | 23:51                   | 01:00                 | lots              | +16° 32'           | Feore<br>no filter        | 3-33  |
| 42364T    | Strip cal for plate | 42364                | 120° on TAD         |                         |                       |                   |                    |                           |       |



Spectr. Temp. 23°F. (-07°C)

Dome Temp./Hum. -06°C

Transparency Conditions

hazy

294

Focus ..... OR

Spectr. Temp. ....

Dome Temp./Hum. ....

| Comparison Type/Filter | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.   | Inst.   | Grating/Tilt | Slit | Emulsion | P.H. | Program              | Remarks   | Quality |
|------------------------|-----------|--------|-----------|-------|---------|--------------|------|----------|------|----------------------|---|---------|
| Fe 102                 | 400/102   | 1-2    | 5.5       | B21V  | N.G. 12 | 612/1.7      | 13/5 | IIa-0e   | A    | SB2-Lnc              |   | vs1 str |
| Fe 102                 | 400/72    | 2-3    | 6.68      | 60V   | G16     | 616/1.7      | 13/5 | 098-0E   | B    | RSCUn F <sub>1</sub> | take reverse of<br>hazy down line - too<br>hazy to continue | vs1 wk  |
|                        |           |        |           |       |         |              |      | IIa-0E   |      |                      |   |         |
|                        |           |        |           |       |         |              |      | 098-02E  |      |                      |   |         |
| Fe 102                 | 400/100   | 2-3    | 5.5       | B21V  | N.G. 12 | 612/1.7      | 13/5 | IIa-0e   | A    | SB2-Lnc              |   | vs1 str |
| Fe 102                 | 400/15    | 2-3    | 2.15      | K0    | N.G. 12 | 612/1.7      | 13/5 | IIa-0*   | B    | Std Uel              |   | vs1 str |
| Fe 102                 | 400/153   |        | 4.28      | K1III | G8      | 616/-25      | 13/5 | IIa-0*   | A    | H+K Ly               |   | vs1 str |
|                        |           |        |           |       |         |              |      | IIa-0E   |      |                      |   |         |
|                        |           |        |           |       |         |              |      | IIa-0*   |      |                      |   |         |
|                        |           |        |           |       |         |              |      | IIa-0*   |      |                      |   |         |
| Fe 102                 | 200/68    |        | 3.1       | G0P   | N.G. 12 | 612/1.7      | 13/5 | IIa-0E*  | B    | Ceph/Eurus           |   | sl str  |
| Fe 102                 | 200/85    |        | 1.9       | B0V   | N.G. 12 | 612/1.7      | 9/5  | IIIa-3e  | A    | Asm-sp/KK            | clouded out   | sl wk   |
|                        |           |        |           |       |         |              |      | IIIa-3   |      |                      |   |         |
|                        |           |        |           |       |         |              |      | IIa-0    |      |                      |   |         |
|                        |           |        |           |       |         |              |      | 098      |      |                      |   |         |

IIIa-3 5 1/2" D19 69°

IIa-0 5 1/2" " "

20 85

098 4" D19 69°

18 14A

295

Date MAR 3/4 FLI/SAT Observers L.Y.-R.

Emulsion Batches:

J.P.E. 30077-02033...J.P.E. 01106-23026...

| 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.       |
|-----------|----------------------------------|------------------------------------|---------------------|-------------------------|-----------------------|-----------------------------------|-------------|---------------------------|------------|
| 42365     | HD 72208                         | 08 26.5                            | +10 09              | 00:00                   | 01:45                 | 03 <sup>h</sup> 43 <sup>m</sup> 0 | +10 02      | Fe Arc<br>ND 1.1          | 8-8        |
| 42366     | HD 131511                        | 14 <sup>h</sup> 48 52              | +19° 33'            | 01:51                   | 03:16                 | 01 <sup>h</sup> 07 E              | +19° 25'    | "                         | 8-8-8      |
| 4236691   | spot cal for plates 42365-66 68  |                                    |                     |                         | 15 min @ 15 Volts     |                                   |             | D4<br>3900                | D2<br>4810 |
| 4236692   | strip cal for plates 42365-66 68 |                                    |                     |                         | 90 sec                |                                   |             |                           |            |
| 42367     | HD 139892                        | 15 <sup>h</sup> 35 <sup>m</sup> 37 | +36° 58'            | 03:19                   | 04:03                 | 01 <sup>h</sup> 04 E              | +36° 51'    | Fe Arc<br>NDPK7BR         | 3-3-3      |
| 4236771   | spot cal for plates 42367        |                                    |                     |                         | 15 min @ 15 Volts     |                                   |             | D4<br>4100                | D4<br>4810 |
| 4236772   | strip cal for plates 42367       |                                    |                     |                         | 180 sec               |                                   |             |                           |            |
| 42368     | HD 163506 (89 Her)               | 17 <sup>h</sup> 58.4               | +26° 04'            | 04:08                   | 04:55                 | 02 <sup>h</sup> 29 E              | +26° 14'    | Fe Arc<br>ND 1.10         | 8-8-8      |
| 42369     | HD 175426                        | 18° 50.2                           | +36 51              | 05:06                   | 06:02                 | 02 20 E                           | +37° 07'    | Fe Arc<br>ND 1.10         | 20         |





297

Emulsion Batches:

F.D. # 30077-02038

Date Sat-Sun Mar 4-5 1978 Observers BA-Ri

| 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.  |
|-----------|------------------------------|--------------|---------------------|-------------------------|-----------------------|-----------------------------------|--------------------|---------------------------|-------|
| 42370     | HD 32092                     | 4 55.6       | +26° 32'            | 18 51                   | 21: 34                | 03 <sup>m</sup> 06 <sup>s</sup> W | +26° 40'           | FeARC<br>N.D. 1-10        | 8-8-8 |
| 42370T1   | optical fn plates 42370-73   |              |                     |                         |                       | 15 min @ 15 <sup>0</sup> W        | D4 D3<br>3900 4300 | D2<br>4810                |       |
| 42370T2   | strip cal fn plates 42370-73 |              |                     |                         |                       | 90 sec                            |                    |                           |       |
| 42371     | HD 71663                     | 8 23.5       | - 2 11              | 21. 37                  | 23: 15                | 01 <sup>m</sup> 20 <sup>s</sup> W | -02° 23'           | FeARC<br>N.D. 1-10        | 8-8-8 |
| 42372     | HD 74874 AB                  | 8 41.5       | +06° 47'            | 23 20                   | 23: 30                | 01 <sup>m</sup> 17 <sup>s</sup> W | +06° 31'           | "                         | 8-8-8 |
| 42373     | HD 87822                     | 10 02.5      | +32 06              | 23 34                   | 00' 20                | 06 <sup>m</sup> 46 <sup>s</sup> W | +31° 44'           | "                         | 8-8-8 |
|           |                              |              |                     | 00: 41                  | 01: 20                | 04 <sup>m</sup> 45 <sup>s</sup> W |                    |                           |       |



Spectr. Temp.  $18^{\circ}\text{F}$  ( $-08^{\circ}\text{C}$ )Dome Temp./Hum.  $-10^{\circ}\text{F}$   $68\%$ Transparency Conditions *some clouds*

298

Focus *90B*Spectr. Temp.  $18^{\circ}\text{F}$ Dome Temp./Hum.  $-15^{\circ}\text{C}$ 

| Comparison<br>Type/Filter Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.  | Inst.              | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program       | Remarks                            | Quality  |
|-------------------------------|-----------|--------|--------------|------|--------------------|------------------|------|----------|------|---------------|------------------------------------|----------|
| Fe REC<br>D110<br>D2<br>4810  | 800/200   | 4-5    | 7.28         | F5   | U.G.-12            | G12/17           | 13/5 | IIaO-E   | B    | Washers lens  | clouds to 1h                       |          |
|                               |           |        |              |      |                    |                  |      | IIaO-E   |      |               |                                    |          |
|                               |           |        |              |      |                    |                  |      | IIaO-E   |      |               |                                    |          |
| Fe REC<br>D110                | 800/200   |        | 0.57         | F0   | U.G.-12            | G12/17           | 13/5 | IIaO-E   | A    | C.V.B. plates |                                    |          |
| "                             | 400/110   |        | 3.98         | F8   | "                  | "                | "    | "        | B    | "             |                                    | v sl str |
| "                             | 800/208   |        | 660          | F5   | "                  | "                | "    | "        | A    |               | some clouds<br>cloud up for 20 min | v sl str |
|                               |           |        |              |      |                    |                  |      |          |      |               | closed by at 02:00                 |          |
|                               |           |        |              | IIaO | 6 <sup>m</sup> 67° | 19 182           |      |          |      |               |                                    |          |
|                               |           |        |              |      |                    |                  |      | IIaO     |      | apert Bar #2  |                                    |          |

1978

299

Date Sun/Mon Mar 5/6 Observers Ly-Ri / Tgi-Ri

Emulsion Batches:

ITAD-F 30077-02038

Q98-02.30077-02038

| 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.  |
|-----------|------------------------------|--------------|---------------------|-------------------------|-----------------------------|-------------------------------|-------------|---------------------------|-------|
| 42374     | HD 72208                     | 08 26.5      | +10 09              | 22:42                   | 00:08                       | 02 14 W                       | +09 54      | Fe Arc<br>ND-1.1          | 4-8   |
| 4237471   | spot cal for plates 42374    |              |                     |                         | 15 min @ 150V <sub>66</sub> | D4<br>3900                    | D3<br>4300  | D2<br>4910                |       |
| 4237472   | slip cal for plate 42374     |              |                     |                         | 90 sec                      |                               |             |                           |       |
| 42375     | HD 65626                     | 07" 54.5     | +57° 33             | 00:19                   | 01:54                       | 04° 30 W                      | +57° 22'    | Fe Arc<br>NO FILTER       | 4-4-4 |
| 4237541   | spot cal for plates 42375-60 |              |                     |                         | 15 min                      | D3 150V <sub>66</sub><br>4810 | D1 7U<br>Hx | P2 7U<br>5450             |       |
| 42376     | HD 106677                    | 12" 11.0     | +73° 07             | 01:57                   | 03:29                       | 01:51 W                       | +70° 40'    | Fe Arc<br>NO FILTER       | 4-4-4 |
| 42377     | HD 118216                    | 13 30:20     | +37° 42'            | 03:32                   | 04:01                       | 01:04 W                       | +37° 17'    | "                         | 4-4-4 |
| 42378     | "                            | "            | "                   | 04:02                   | 04:25                       | 01:29 W                       | "           | "                         | 4-4-4 |
| 42379     | HD 146361                    | 16" 10.9     | +34° 07             | 04:28                   | 05:11                       | 00° 25 E                      | +33° 55'    | "                         | 4-4-4 |
| 42380     | HD 146362                    | "            | "                   | 05:12                   | 06:03                       | 00:32 W                       | +33° 55'    | "                         | 4-8   |



Spectr. Temp.  $20^{\circ}\text{F}$ Dome Temp./Hum.  $-10^{\circ}\text{C}/84\%$ Transparency Conditions  $\text{good}$  300Focus  $90\text{B}$ Spectr. Temp.  $15^{\circ}\text{F}$ Dome Temp./Hum.  $-8^{\circ}\text{C}/96\%$ 

II.

| Comparison<br>Type/Filler Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.  | Inst. | Grating/<br>Tilt   | Slit | Emulsion | P.H. | Program               | Remarks                | Quality |
|-------------------------------|-----------|--------|--------------|------|-------|--------------------|------|----------|------|-----------------------|------------------------|---------|
| MC                            | 500/172   | 3-4    | 6.58         | Aop  | NL12  | G1V/1.7            | 17/5 | IIAD-E   | A    | AP-Ly                 |                        | 1       |
|                               |           |        |              |      |       |                    |      | IIAD-E   |      |                       |                        |         |
|                               |           |        |              |      |       |                    |      | IIAD-E   |      |                       |                        |         |
| 4-4                           | 300/220   | 3-4    | 7.1          | G0   | G16R  | G16/1.7            | 13/5 | 098-02   | B    | RSCVn/Fg <sup>u</sup> |                        | fine    |
|                               |           |        |              |      |       |                    |      | 098-02   |      |                       |                        |         |
| 4-4                           | 300/221   |        | 7.55         | K0   | G16R  | G16/1.7            | 13/5 | "        | A    | RSCVn/Fg <sup>u</sup> |                        | fine    |
| 4-4                           | 300/111   |        | 5.3          | F2IV | "     | -                  | -    | -        | B    | -                     |                        | fine    |
| 4-4                           | 300/224   |        | -            | -    | -     | -                  | -    | -        | A    | "                     |                        | fine    |
| 4-4                           | 300/220   |        | 5.76         | DF6  | "     | -                  | -    | -        | B    | "                     |                        | fine    |
| 4-4                           | 300/113   |        | 6.60         | JGI  | "     | -                  | -    | -        | A    | "                     | DAWN                   | sl wke  |
|                               |           |        |              |      |       |                    |      |          |      |                       | IIAD w exposed Box # 3 |         |
|                               |           |        |              |      |       |                    |      |          |      |                       | 098 w exposed Box # 1  |         |
|                               |           |        |              |      | 098   | 4 <sup>m</sup> D17 | 58°  | 18 186   |      |                       |                        |         |
|                               |           |        |              |      | II20  | 6 <sup>m</sup>     | 67°  | 18 182   |      |                       |                        |         |





Spectr. Temp.  $24^{\circ}\text{F}$ ..... Dome Temp./Hum.  $-0.6^{\circ}\text{C}$ ...  $62\%$  Transparency Conditions Excellent..... 362

Focus OR.....

Spectr. Temp.  $19^{\circ}\text{F}$ ..... Dome Temp./Hum.  $-10^{\circ}\text{C}$ ...  $92\%$

| Comparison<br>Type/Filter Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.            | Inst. | Grating/<br>Tilt | Slit | Emulsion                           | P.H. | Program            | Remarks | Quality  |
|-------------------------------|-----------|--------|--------------|----------------|-------|------------------|------|------------------------------------|------|--------------------|---------|----------|
| E 10<br>D 1.1<br>D2<br>4910   | 800/200   | 2-4    | 7.5          | B9             | G12   | NG12/7           | 13/5 | I <sub>40</sub> E                  | A    | A <sub>p</sub> MR  |         |          |
|                               |           |        |              |                |       |                  |      | I <sub>40</sub> -E                 |      |                    |         |          |
|                               |           |        |              |                |       |                  |      | I <sub>40</sub> -E                 |      |                    |         |          |
| E ARC<br>D 1.1<br>8-8-8       | 300/200   | 3-4    | 7.26         | A3             | G-12  | NG12/7           | 13/5 | I <sub>40</sub> -E                 | B    | A <sub>m</sub> -MR |         |          |
| " 8-8-8                       | 300/200   |        | 6.61         | A0             | "     | "                | 9/5  | "                                  | A    | A <sub>p</sub> -MR |         | v sl str |
| " 8-8-8                       | 300/200   | 3-5    | 6.75         | A <sub>p</sub> | "     | "                | 9/5  | "                                  | B    | A <sub>p</sub> -MR |         |          |
| " 8-8-8                       | 300/200   |        | 6.67         | B9             | "     | "                | 9/5  | "                                  | A    | A <sub>p</sub> MR  |         | v sl str |
| " 8-8-8                       | 300/180   | 4-5    | 7.19         | A0             | "     | "                | 13/5 | "                                  | B    | A <sub>m</sub> MR  | DAWD    | fine     |
|                               |           |        |              |                |       |                  |      | I <sub>40</sub> 5 1/2 6 1/2 20 180 |      |                    |         |          |

303

Emulsion Batches:

H&amp;O-F. 20039-05037

Date MAR. 7-8. 1953. W.P.O., Observers ... But - Ri .....

| 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.  |
|-----------|--------------------------------|----------------------|---------------------|-------------------------|-----------------------|----------------------|--------------------|---------------------------|-------|
| 42387     | HD 38817                       | 05 <sup>h</sup> 43.4 | +43° 59'            | 18:50                   | 22:06                 | 03:00 W              | +44° 05'           | FEARC<br>ND 1.1           | 8-8-8 |
| 42387T1   | spot cal for plates 42387-90,  |                      |                     |                         | 15 min @ 15 Volts     |                      | D4 D3<br>3900 4300 | D2<br>4810                |       |
| 42387T2   | strip cal for plates 42387-90. |                      |                     |                         | 90 min                |                      |                    |                           |       |
| 42388     | HD 47256                       | 06 32.7              | +27 53              | 22:10                   | 01:13                 | 05 19 W              | +27 57'            | FEARC<br>ND 1.1           | 8-8-8 |
| 42389     | HD 134305                      | 15 04.0              | +12 52              | 01:20                   | 04:06                 | 00 <sup>h</sup> 17 E | +12° 41'           | "                         | 8-8-8 |
| 42390     | HD 156547                      | 17 13.1              | +26° 00'            | 04:10                   | 05:49                 | 00 <sup>h</sup> 43 E | +25° 59'           | "                         | 8-8-8 |
| 42390F1   | focus test on 42390            |                      |                     |                         |                       |                      |                    | ND FILTER                 | 5/5   |



Spectr. Temp. .24°F.....

Dome Temp./Hum. -7°C./59%

Transparency Conditions THIN CIRRUS..... 304

Focus ..... OR.....

Spectr. Temp. .14°F.....

Dome Temp./Hum. -12°C..... 70%

| Comparison<br>Type/Filter Exp    | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.  | Inst. | Grating/<br>Tilt  | Slit | Emulsion | P.H. | Program | Remarks         | Quality           |
|----------------------------------|-----------|--------|--------------|------|-------|-------------------|------|----------|------|---------|-----------------|-------------------|
| P42C<br>D119 8-8-8<br>D2<br>4810 | 800/200   | 4-5    | 7.51         | A1   | G-12  | NG12/7            | 13/5 | IIa0-E   | A    | Am-MR   |                 | fine              |
|                                  |           |        |              |      |       |                   |      | IIa0-E   |      |         |                 |                   |
|                                  |           |        |              |      |       |                   |      | IIa0-E   |      |         |                 |                   |
| EARC<br>D111 8-8-8               | 800/170   | 8"     | 7.26         | A3   | G-12  | NG12/7            | 13/5 | IIa0-E   | B    | Am MR   | telescope limit | fine              |
| " 8-8-8                          | 800/200   | 4-5    | 7.24         | A7   | "     | "                 | 13/5 | "        | A    | Ap MR   |                 | fine              |
| " 8-8-8                          | 800/200   |        | 7.04         | A1   | "     | "                 | "    | "        | B    | Am MR   |                 | fine              |
| DA122 5/                         |           | free   | OR           | Temp | 14°F  |                   | 9    | IIa0-E   | B    |         |                 | center<br>to blue |
|                                  |           |        |              |      |       | 5'12 <sup>m</sup> | 69°  | 19 175   |      |         |                 |                   |

305

Date 1978 MAR 8/9 Observers K.H. Tom. - Egi. - Ly. - Es. ....

Emulsion Batches:

III. e. Fe. 23.117. ... 23028

09802E 300.97. ... 02038

II. e. 200.77. ... 08038

| 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.     |
|-----------|-----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|---------------|---------------------------|----------|
| 42391     | HD 47105                    | 06 31.9      | +16 29              | 18 35                   | 19 04                 | 00 44E            | +16 32        | Fe Arc<br>W.H.            | 8-8-10   |
| 42397T    | Spot Calc for 42393-97.     |              |                     | 15 min @ 15V 3900       |                       | D4<br>D3<br>4300  | D2<br>4810    |                           |          |
| 42392     | HD 22468                    | 03 31.6      | +0 16               | 19 09                   | 20 36                 | 03 36W            | +0 36.0       | Fe Arc<br>None            | 4-4-4    |
| 42392T    | Spot Calc for 42392, 98-03. |              |                     | 15 min @ 1              | 15V D3<br>4810        | FV D1<br>Hx       | FV D2<br>5450 |                           |          |
| 42393     | HD 62044 (6 Gem)            | 07 37.0      | +29 07              | 20 43                   | 21 36                 | 00 42W            | +29 03        | Fe Arc<br>ND=1.10         | 20-20-20 |
| 42393T    | Spot Calc for 42391.        |              |                     | 15 min @                | FV                    | D4<br>5100        | D2<br>Hx      | D3<br>5450                |          |
| 42394     | HD 27192                    | 04 12.6      | +50 41              | 21 44                   | 22 00                 | 04 30 W           | +50 59        | Fe Arc<br>ND=1.10         | 13-12    |
| 42395     | HD 72208                    | 08 26.5      | +10 09              | 22 07                   | 22 56                 | 01 14W            | +09 57        | Fe Arc<br>ND=1.1          | 8-8-8    |
| 42396     | HD 72359                    | 08 27.2      | +10 24              | 22 59                   | 23 42                 | 02 00W            | +10 14        | Fe Arc<br>ND=1.1          | 8-8-8    |
| 42397     | HD 102870                   | 11 45.5      | +02 20              | 23 47                   | 23 55                 | 01 05E            | +02 00        | Fe Arc<br>ND=1.1          | 8-8-8    |
| 42398     | HD 65626                    | 7 54.5       | +57 33              | 00 09                   | 01 00                 | 03 56W            | +57 26        | Fe Arc<br>NO FILTER       | 4-4-4    |
| 42399     | HD 107760                   | 12 17.8      | +73° 48             | 01 17                   | 03 46                 | 02 14:W           | +73° 27.4     | Fe Arc<br>NO FILTER       | 4-4-4    |
| 42399T    | Strip Calc for 42393-97     |              |                     |                         |                       |                   |               | 90sec                     |          |
| 42400     | HD 118216                   | 13 30.3      | +37° 42             | 03 51                   | 04 09                 | 01 24 W           | +37° 21.5     | Fe Arc<br>NO FILTER       | 4-4-4    |
| 42401     | HD 118216                   | 13 30.3      | +37° 42             | 04-10                   | 04 28                 | 01 44 W           | +37° 21.5     | Fe Arc<br>NO FILTER       | 4-4-4    |



Spectr. Temp.  $+26^{\circ}\text{F}$ .....Dome Temp./Hum  $+24^{\circ}\text{F}/53\%$ Transparency Conditions *Fine*..... *sl. hazy*Focus *0*.....

Spectr. Temp. ....

Dome Temp./Hum. */*.....

306

| Comparison<br>Type/Filter<br>Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.   | Inst.   | Grating/<br>Tilt | Slit   | Emulsion | P.H. | Program    | Remarks                             | Quality                |
|----------------------------------|-----------|--------|--------------|-------|---------|------------------|--------|----------|------|------------|-------------------------------------|------------------------|
| Fe Arc<br>NG 12<br>8-8-4         | 40/100    | 2"     | 1.9          | A0IV  | G16R    | G16/.7B          | 9/1.5  | IIaF-E   | A    | Atom Sp/KK |                                     | comp fine<br>str       |
|                                  |           |        |              |       |         |                  |        | IIaO-E   |      |            | may be labelled 96                  | broken<br>off the star |
| Fe Arc<br>NG 12<br>4-4-4         | 40/5B     | 2'-3'  | 6.68         | G0V   | G16R    | G16/.7B          | 13/1.5 | 098-02E  | B    | RS CVn/Fgi |                                     |                        |
|                                  |           |        |              |       |         |                  |        | 098-02E  |      |            |                                     |                        |
| Fe Arc<br>NG 12<br>2-2-4         | 40/160    | 1"-2"  | ~5.4         | K1III | G8 Blue | G16R/.25B        | 9/1.5  | IIaOe    | A    | H4K Bn-Ly  |                                     | vsl str                |
|                                  |           |        |              |       |         |                  |        | IIIaF-E  |      |            |                                     | fine                   |
|                                  |           |        |              |       |         |                  |        |          |      |            |                                     |                        |
| Fe Arc<br>NG 12<br>15-1-4        | 40/50     | 1-2    | 5.5          | B2IV  | NG12    | G12/.7B          | 13/1.5 | IIaOe    | B    | SB-Lne     |                                     |                        |
| Fe Arc<br>NG 12<br>1-1-4         | 40/98     | 1-2    | 6.53         | A0p   | "       | "                | 13/1.5 | IIaOe    | A    | SB-Ly      | fainter star in field               |                        |
| Fe Arc<br>NG 12<br>8-1-4         | 40/100    | 1-2    | 6.23         | A0V   | "       | "                | "      | "        | B    | SB-Ly      | marked 76<br>brighter star in field | vsl str                |
| Fe Arc<br>NG 12<br>1-2-4         | 40/57     | 2      | 4.16         | F8V   | "       | "                | "      | "        | A    | STD UEL    |                                     | sl str                 |
| Fe Arc<br>NG 12<br>4-4-4         | 40/101    |        | 7.1          | G0    | G16R    | G16R/.7B         | "      | 098-02-e | A    | RS CVn/Fgi |                                     |                        |
| Fe Arc<br>NG 12<br>4-4-4         | 40/200    | 2"     | 9.0          | G5    | "       | "                | 18/1.5 | "        | B    | RS CVn/Fgi |                                     | vsl wk                 |
|                                  |           |        |              |       |         |                  |        | IIaO-E   |      |            |                                     |                        |
| Fe Arc<br>NG 12<br>9-4-4         | 40/50     | 1-2"   | 5.3          | F2II  | G16R    | G16R/.7B         | 13/1.5 | 098-02-e | A    | RS CVn/Fgi |                                     | fine                   |
| Fe Arc<br>NG 12<br>4-2-4         | 40/50     |        | 5.3          | F2II  | G16R    | G16R/.7B         | 13/1.5 | 098-02-e | B    | RS CVn/Fgi |                                     | fine                   |

307  
#2

WED-THURS

Emulsion Batches:

Date 1978 MAR 8/9 Observers Fgi-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 | Ex    |
|-----------|----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| 42402     | HD 146361      | 16 10.9      | +34° 07             | 04 34                   | 05 13                 | 00 12 E           | +33° 59.4   | Fe Arc<br>NO FILTER       | 4-4-1 |
| 42403     | HD 146361      | 16 10.9      | +34° 07             | 05 14                   | 06 01                 | 00 36 W           | +33° 59.4   | Fe Arc<br>NO FILTER       | 4-4-2 |
| 42403T    | Strip Calc for | 42392        | 98-103.             |                         |                       |                   |             | 90sec                     |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |
|           |                |              |                     |                         |                       |                   |             |                           |       |

Spectr. Te  
Focus...  
Spectr. Te  
Exp. Mtr.

100/50  
100/50



Spectr. Temp. .... Dome Temp./Hum. .... Transparency Conditions ..... 308

Focus ..... 0

Spectr. Temp. 22°F ..... Dome Temp./Hum. +19°F/90%

| Comparison Type/Filter Exp | Exp. Mtr. | Seeing | Ptg. Mag.   | Sp. | Inst. | Grating/Tilt    | Slit | Emulsion | P.H. | Program    | Remarks | Quality |
|----------------------------|-----------|--------|-------------|-----|-------|-----------------|------|----------|------|------------|---------|---------|
| Fe Arc<br>WATER            | 200/50    | 2"     | V =<br>5.76 | dF6 | G16R  | G16/7B          | 13/5 | 098-02-c | A    | RS CVn/Fgi |         | fine    |
| Fe Arc<br>WATER            | 200/50    |        | V =<br>5.76 | dF6 | G16R  | G16/7B          | 13/5 | 098-02-c | B    | RS CVn/Fgi |         | vsl str |
|                            |           |        |             |     |       |                 |      | "        |      |            |         |         |
|                            |           |        |             |     |       | 098 4" 60°      |      |          |      |            |         |         |
|                            |           |        |             |     |       | II 20 5 1/2 60° |      | 18 156   |      |            |         |         |
|                            |           |        |             |     |       | MAF 5 1/2 60°   |      | 13 244   |      |            |         |         |

30 Trent U group looked at Jupiter

Emulsion Batches:

..098-02E..30297-09038  
 ..II-0-E..20077-08038

Date 1978. MAR. 9/10... Observers Fgi.-Tn./KK.-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.  |
|-----------|------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| 42404     | HD 22468               | 03 31.6      | +0 16               | 18:55                   | 20:24                 | 03:36W            | +00 36.5    | Fe Arc<br>none            | 4-4-4 |
| 42404T    | Spot Calc for 42404    |              |                     |                         | 15min @               | 15V D3<br>4810    | 7V D1<br>Hd | 7V D2<br>5450             |       |
| 42405     | HD 103095              | 11 47.2      | +38 26              | 01:44                   | 03 07                 | 02 08W            | +37 59      | Fe Arc<br>ND110           | 8-8-8 |
| 42405T    | Spot Calc for 42405-9  |              |                     | 15min @                 | D4<br>15V 3900        | D3<br>4300        | D2<br>4810  |                           |       |
| 42406     | HD 131511              | 14 48.9      | +19 33              | 03 12                   | 04 14                 | 0 15W             | +19 23      | Fe Arc<br>ND110           | 8-8-8 |
| 42407     | HD 122742              | 13 58.6      | +11 16              | 04 17                   | 05 38                 | 2 28W             | +11 02      | Fe Arc<br>ND110           | 8-8-8 |
| 42408     | HD 137909              | 15 23.7      | +29 27              | 05 41                   | 05 48                 | 1 37W             |             | "                         | 8-8-8 |
| 42409     | HD 140436              | 15 38.5      | +26 37              | 05 51                   | 06 00                 | 1 11W             |             | "                         | 8-8-8 |
| 42409T    | Strip Calc for 42405-9 |              |                     |                         |                       |                   |             | 90sec                     |       |



Spectr. Temp.  $+25^{\circ}\text{F}$ .....Dome Temp./Hum.  $-20^{\circ}\text{C}/55\%$ Transparency Conditions *Cloud from N. by 21<sup>st</sup> 210*Focus *changed to 90R*.....Spectr. Temp.  $+28^{\circ}\text{F}$ .....Dome Temp./Hum.  $+28^{\circ}\text{F}/70\%$ 

| Comparison Type/Filter Ex. | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst. | Grating/Tilt | Slit   | Emulsion | P.H. | Program                | Remarks         | Quality  |
|----------------------------|-----------|--------|-----------|------|-------|--------------|--------|----------|------|------------------------|-----------------|----------|
| Fe 4re<br>70 D2<br>5450    | 00/65     | 2-3"   | 6.68      | G0V  | G16R  | G16/7B       | 13/5   | 098-2E   | A    | RSCV <sub>6</sub> -Fgi |                 | fine     |
| Fe 4c<br>10A               | 00/120    | 2-3"   | 6.45      | G8V  | G12B  | G12/675B     | 13/5   | IIQ0-E   | A    | Asm Sp - KK            |                 | v sl str |
|                            |           |        |           |      |       |              |        | IIQ0-E   |      |                        | no 3rd exposure |          |
| Fe 4re<br>10A              | 00/120    | 3      | 6.84      | G1R  | G12   | G12/675B     | 13/5   | IIQ0-E   | B    | Asm Sp - KK            |                 | v sl str |
| Fe 4c<br>10A               | 00/110    | 4      | $V=6.21$  | G8V  | G12   | G12/675B     | 13/5   | IIQ0-E   | A    | Asm Sp - KK            |                 | v sl str |
| "                          | 0/18      | 1-2    | 3.93      | F0p  | G12   | "            | 13/9   | "        | B    | "                      |                 | v sl str |
| "                          | 0/18      | 1-2    | 3.81      | A0IV | G12   | "            | "      | "        | A    | "                      |                 | v sl str |
| 905                        |           |        |           |      |       |              |        | "        |      |                        |                 |          |
|                            |           |        |           |      |       | IIQ0         | 5 1/2" | 69°      | 21   | 163                    |                 |          |
|                            |           |        |           |      |       | 098          | 4"     | 68°      | 18   | 163                    |                 |          |

Emulsion Batches:  
 J. O. E. 20077-09038  
 O. R. E. 30097-09038

Date 1978 March 10/11 Observers C. T. n. / 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<br>Type/Filter | Exp   |
|-----------|--------------------------|---------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| 42410     | HD 27192                 | 04 12.6       | 50° 41              | 18:51                   | 19:13                 | 1:50W             | +50 59      | FeArc<br>10-10            | 8-8-8 |
| 42411     | HD 34364                 | 05 11.8       | +33 19              | 19:17                   | 20:02                 | 1:40W             | +33 51      | "                         | 8-8-8 |
| 42411T    | Spot Calc for 42410-15.  |               |                     | 15 min @ 15V            |                       | D4<br>3900        | D3<br>4300  | D2<br>4810                |       |
| 42412     | HD 27192                 | 04 12.6       | 50° 41              | 20:04                   | 20:35                 | 3:12W             | +50 59      | FeArc<br>10-1.10          | 8-8-8 |
| 42413     | HD 45412                 | 06 22         | +36 33.3            | 20:38                   | 23:05                 | 3:34W             | +30 37      | "                         | 9-9-9 |
| 42413T    | Strip Calc for 42410-15. |               |                     |                         |                       |                   |             |                           |       |
| 42414     | HD 84441                 | 09 40         | +24° 14             | 23:09                   | 23:43                 | 0 55W             | +24 00      | FeArc<br>10-1.10          | 9-9   |
| 42415     | HD 112028                | 12 48.3       | +83 58              | 23:54                   | 01:24                 | 0 30E             | +83 38      | "                         | 9-9-9 |
| 42416     | HD 106677                | 12 11.0       | +73 07              | 01:32                   | 02:33                 | 1 15W             | +72 47      | FeArc<br>None             | 4-4-4 |
| 42416T    | Spot Calc for 42416-16   |               |                     | 15 min @                |                       | 15V D3<br>4810    | 7V D1<br>HX | 7V D2<br>5450             |       |
| 42417     | HD 118216                | 13 30.3       | +37 42              | 02 44                   | 03 27                 | 0 50W             | +37 23      | FeArc<br>None             | 4-4-4 |
| 42418     | "                        | "             | "                   | 03 28                   | 03 49                 | 1 11'W            | "           | "                         | 4-4-4 |



Spectr. Temp. +33°F

Dome Temp./Hum. +32°F/50%

Transparency Conditions Fine but going fast

Focus 90-R

Spectr. Temp. +30°F

Dome Temp./Hum. +25°F/90%

3/2

| Companion<br>Type/Filter Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.   | Inst.                         | Grating/<br>Tilt | Slit  | Emulsion | P.H. | Program                             | Remarks                                 | Quality |
|------------------------------|-----------|--------|--------------|-------|-------------------------------|------------------|-------|----------|------|-------------------------------------|---|---------|
| Fluor<br>10 5-               | 100/100   | 2"     | 5.5          | B2II  | NG12                          | G12.7B           | 13/15 | IIa02    | A    | SB2-Lne                             |   | Fine    |
| "                            | 824/99    | 1-2"   | 5.2-<br>6.5  | Ap    | "                             | "                | "     | "        | B    | Ed/B <sub>12</sub> -B <sub>14</sub> |   | Fine    |
| 02<br>420                    |           |        |              |       |                               |                  |       | "        |      |                                     |   |         |
| Feat<br>10-110 85-           | 400/101   |        | 5.5          | B2II  | "                             | "                | "     | "        | A    | SB2-Lne                             |   | Fine    |
| "                            | 400/123   | 2-3    | 5.3<br>-6.5  | F1-60 | "                             | "                | 9/15  | "        | B    | Ceph/Evans                          | cloud                                   |         |
| Feat<br>07                   | 300/63    | 3"     | 3.1          | G0pII | "                             | "                | 9/15  | "        | A    | Ceph/Evans                          | thick cloud                             | Fine    |
| "                            | 400/100   | 1-2"   | 5.2          | B8    | "                             | "                | 9/15  | "        | B    | Shell-B <sub>12</sub>               | forgot to change to 13/15<br>thin cloud | Fine    |
| Feat<br>02<br>50             | 400/55    | 2-3    | V=<br>5.42   | K0    | G16Red                        | G16.7B           | 13/15 | 098-E    | A    | RSCV <sub>4</sub> -F <sub>1</sub>   | some cloud                              | vslw    |
| Feat<br>02<br>50             | 400/125   | 2"     | V=<br>4.95   | F2II  | G16Red                        | G16.7B           | 13/15 | 098-E    | B    | RSCV <sub>4</sub> -F <sub>1</sub>   | some cloudy times                       | fine    |
| "                            | 400/110   |        | "            | "     | "                             | "                | "     | "        | A    | "                                   |   | fine    |
|                              |           |        |              | 098   | A <sup>m</sup>                | 68°              | 18    | 149      |      |                                     |   |         |
|                              |           |        |              | IIa0  | 5 <sup>1/2</sup> <sup>m</sup> | 68°              | 19    | 170      |      |                                     |   |         |

313

Note \* All penciled labels for this night are 1 digit too low  
inked labels are correct.

Date 1978 March 12/13... Observers Bl.-Tn. / Rm.-Tn...

Emulsion Batches:

098-02E-30097-09038

1101-E-01106-04038

1100-E-20077-09038

| 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   |
|-----------|--------------------|----------------------|---------------------|-------------------------|-----------------------|-----------------------|---------------|---------------------------|-------|
| 42419     | HD 22468           | 03 31.6              | +0 16               | 18 59                   | 20 16                 | 03 40 W               | +00 38        | Fe Arc<br>None            | 4-4   |
| 42419T    | Spot Calc for      | 42419, 25            |                     | 15 min @                | 4810                  | 15V D3<br>7V D1<br>H2 | 7V D2<br>5450 |                           |       |
| 42420     | HD 37468           | 05 33.7              | -2 39               | 20 20                   | 20 47                 | 02 13 W               | -2 32         | Fe Arc<br>None            | 5-33  |
| 42421     | HD 47105           | 06 31.9              | +16 29              | 20 51                   | 21 00                 | 01 27 W               | +16 30        | Fe Arc<br>None            | 5-5   |
| 42421T    | Spot Calc for      | 42420-21             |                     | 15 min @ 15V            | 4100                  | * D4<br>4300          | D4<br>4810    |                           |       |
| 42422     | HD 34364           | 05 11.8              | +33 39              | 21 04                   | 22 11                 | 3 58 W                | +33 52        | Fe Arc<br>ND 110          | 7-7   |
| 42422T    | Spot Calc for      | 42422-24, 26-28      |                     | 15 min @ 15V            | 3900                  | D4<br>4300            | D3<br>4810    |                           |       |
| 42423     | HD 88021/2         | 10 03.8              | +20 49              | 22 15                   | 01 04                 | 2 01 W                | +20 33        | Fe Arc<br>ND 110          | 7-7   |
| 42424     | HD 89941 = E Leo   | 9 <sup>h</sup> 40.2  | +24° 14             | 01 13                   | 01 31                 | 2 52 W                | +23 58        | Fe Arc<br>ND 110          | 18-18 |
| 42425     | HD 11821C          | 13 <sup>h</sup> 30.3 | +37° 42             | 01 <sup>h</sup> 39      | 02 06                 | 0 24 E                | +37 23        | Fe Arc<br>None            | 4-4   |
| 42426     | HD 124897          | 14 <sup>h</sup> 11.1 | +19° 42             | 02 <sup>h</sup> 11      | 02 16                 | 0 54 E                | +19 22        | Fe Arc<br>ND 110          | 14-4  |
| 42427     | HD 163506 = 89 Her | 17 <sup>h</sup> 51.4 | +26° 4              | 02 24                   | 03 11                 | 3 38 E                | +26 09        | "                         | 7-7   |
| 42428     | HD 186688 = SV Cyg | 19 <sup>h</sup> 40.3 | +29° 01             | 03 18                   | 05 50                 | 2 48 E                | +29 18        | "                         | 6-6   |
| 42428T    | Strip Calc for     | 42419, 25            |                     |                         | 90sec                 |                       |               |                           |       |



Spectr. Temp.  $+33^{\circ}\text{F}$ .....Dome Temp./Hum.  $32^{\circ}\text{F}$ ..H= $77\%$ Transparency Conditions *Very good - low haze*Focus  $90-R$ .....Spectr. Temp.  $^{\circ}\text{F}$ .....Dome Temp./Hum.  $21^{\circ}\text{F}$ /H= $86\%$ 

314

| Comparison Type/Filter Exp. | Exp. Mtr. | Seeing | Ptg. Mag.    | Sp.                | Inst.     | Grating/Tilt | Slit | Emulsion | P.H. | Program      | Remarks   | Quality                      |
|-----------------------------|-----------|--------|--------------|--------------------|-----------|--------------|------|----------|------|--------------|---|------------------------------|
| Fe Arc<br>None              | 400/57    | 2"     | 6.68         | G0V                | G16R      | G16/.7B      | 13/5 | 098-02 E | A    | RSCVn-Fgi    |   | fine                         |
|                             |           |        |              |                    |           |              |      | "        |      |              |   |                              |
| Fe Arc<br>5-2               | 200/100   | 2"     | 3.51         | 09.5V              | NG12      | G12/.7B      | 13/5 | IIIa-JE  | B    | SB-Blu       |   | fine                         |
| Fe Arc<br>5-5               | 40/30     |        | 1.9          | A0IV               | NG12      | G12/.7B      | 9/5  | IIIa-JE  | A    | ASM-KK       |   | fine                         |
|                             |           | x      |              | Exp for            | 4100 prob | 10 min.      |      | IIIa-JE  |      |              | Sensitometer switched off 5 min early?            |                              |
| Fe Arc<br>A110              | 400/100   | 3"     | 5.82<br>6.49 | A <sub>p</sub>     | NG12      | G12/.7B      | 13/5 | IIa-OE   | B    | Ecl. Bin-Blu | getting cloudy                                    |                              |
|                             |           |        |              |                    |           |              |      | "        |      |              |   |                              |
| Fe Arc<br>ND1               | 400/128   | 3-4"   | 7.20         | 9657<br>A2         | V13-Blu   | G12/.7B      | 13/5 | IIa-OE   | A    | V13-Blu      |   |                              |
| Fe Arc<br>A110              | 40/25     | 3'     | 3.1          | G0V                | G8        | G8/.25       | 9/5  | IIa-OE   | B    | Ceph/Evan    |   |                              |
| Fe Arc<br>4-2               | 200/6     |        | 5.3          | F2IV               | G16       | G16/.7B      | 13/5 | 098-E    | A    | RSCVn-Fgi    |   | star fine<br>comp very weak! |
| Fe Arc<br>ND11              | 0/26      | 2-3    | 1.21         | K                  | NG12      | G12/.7       | 9/9  | IIa0-E   | B    | Std Val      |   |                              |
| "                           | 7-200/60  | 2-3    | 5.62         | F2Ia               | "         | "            | 13/5 | IIa0-E   | A    | Ceph-Fe      |   |                              |
| "                           | 6-200/137 | "      | 6.9-<br>7.7  | F-<br>S1           | "         | "            | 18/5 | IIa0-E   | B    | Ceph-Rm      |   |                              |
|                             |           |        |              |                    |           |              |      | 098-02 E |      |              | very ragged                                       |                              |
|                             |           |        |              | 098 4 <sup>m</sup> | 680       |              | 18   | 183      |      |              | dishy see Comet Bradfield<br>should have seen it. |                              |
|                             |           |        |              | III 15             | 512       | 680          | 15   | 250      |      |              |   |                              |
|                             |           |        |              | II 10              |           |              | 21   | 183      |      |              |   |                              |

35

wed Thurs

Date 1978 Mar. 15./16.....

Observers Blm.-Tn./Fgr.-Tn.

Emulsion Batches:

.098-02E 30097-09038

IIIaJ-E 01106-04038

IIaD-E 20077-12038

| 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.  |
|-----------|----------------|---------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| 42429     | HD 22468       | 03 31.6       | +0 16               | 19 02                   | 20 15                 | 3 55 W            | +0 37       | Fe Arc<br>none            | 4-4-4 |
| 42429T    | Spot Calc for  | 42429, 33-36  |                     |                         | 15min @               | 15V D3<br>4810    | 7V D1<br>H2 | 7V D2<br>5450             |       |
| 42430     | HD 37468       | 05 33.7       | -2 39               | 20 19                   | 21 04                 | 2 42 W            | -2 32       | Fe Arc<br>None            | 3-3-3 |
| 42430T    | Spot Calc for  | 42430         |                     | 15min @ 15V             | D4<br>4100            | D4<br>4300        | D4<br>4810  |                           |       |
| 42431     | HD 34364       | 05 11.8       | +33 39              | 21 08                   | 23 09                 | 05 08 W           | +33 52      | Fe Arc<br>NO 110          | 8-8-8 |
| 42431T    | Spot Calc for  | 42431-32      |                     | 15min @                 | D4<br>15V 3900        | D3<br>4300        | D2<br>4810  |                           |       |
| 42432     | HD 112028      | 12 48 16      | +83 58              | 23 18                   | 00 52                 | 00 42 E           | +83 37      | Fe Arc<br>ND 110          | 8-8-4 |
| 42433     | HD 106677      | 12 11.0       | +73 07              | 00 59                   | 03 23                 | 02 25 W           | +72 46      | Fe Arc<br>NO FILTER       | 4-4-4 |
| 42433T    | Strip Calc for | 42429, 33-36, |                     | 90sec                   |                       |                   |             |                           |       |
| 42434     | HD 118216      | 13 30.3       | +37 42              | 03 26                   | 04:02                 | 01 45 W           | +37 23      | Fe Arc<br>NO FILTER       | 4-4-4 |
| 42435     | HD 118216      | 13 30.3       | +37 42              | 04 04                   | 04 42                 | 02 24 W           | +37 23      | Fe Arc<br>NO FILTER       | 4-4-4 |
| 42436     | HD 146361      | 16 10.9       | +34 07              | 04 45                   | 05:45                 | 00 48 W           | +34 00      | Fe Arc<br>NO FILTER       | 4-4-4 |
| 42436 F   | Focus Test     |               |                     |                         |                       |                   |             | Fe Arc<br>NO FILTER       | 15-15 |



09038  
04038  
12038

Spectr. Temp.  $+33^{\circ}\text{F}$  ..... Dome Temp./Hum.  $+27^{\circ}\text{F} / \text{A} = 77\%$  Transparency Conditions *OK - sl. hazy* ..... 316  
 Focus ..... *9.0-R* .....  
 Spectr. Temp.  $+22^{\circ}\text{F}$  ..... Dome Temp./Hum.  $+17^{\circ}\text{F} / \text{A} = 91\%$  .....  
*cloud by 21.5*

| Comparison Type/Filter Exp      | Exp. Mtr.           | Seeing | Ptg. Mag.   | Sp.   | Inst. | Grating/Tilt | Slit | Emulsion           | P.H. | Program                | Remarks   | Quality        |
|---------------------------------|---------------------|--------|-------------|-------|-------|--------------|------|--------------------|------|------------------------|-----------|----------------|
| Fe Arc<br>None<br>7v D2<br>5450 | 444 400/38          | 3-4"   | 6.68        | G0V   | G16R  | G16/7B       | 13/5 | 098-02E<br>098-02E | A    | RSCV <sub>n</sub> /Fgi |           | Fine           |
| Fe Arc<br>None                  | 3-3 200/100         | 4"     | 3.51        | 09.5V | G12   | G12/7B       | 13/5 | IIIa-JE            | B    | SB-Blu                 |           | fine           |
| Fe Arc<br>ND 110                | 8-3 200/95          | 3-4    | 5.8-<br>6.5 | Ap    | G12   | G12/7B       | 13/5 | IIa-D-E            | A    | Ecl Bin Blu            | cloud     |                |
| Fe Arc<br>ND 110                | 3-8 200/143         | 4"     | 5.2         | B8p   | G12   | G12/7B       | 13/5 | IIa-D-E            | B    | Shell-Blu              |           | Fine           |
| Fe Arc<br>ND F-UR               | 4-4 200/65          | 4"     | 7.55        | K0    | G16R  | G16/7B       | 13/5 | 098-02e<br>098-025 | A    | RSCV <sub>n</sub> /Fgi |           | fin            |
| Fe Arc<br>ND F-UR               | 4-4 200/100         | 3"     | 5.3         | F2IV  | G16R  | G16/7B       | 13/5 | 095-02-e           | B    | RSCV <sub>n</sub> /Fgi |           | fin            |
| Fe Arc<br>ND F-UR               | 4-4 200/101         | 3"     | 5.3         | F2IV  | G16R  | G16/7B       | 13/5 | 098-02-e           | A    | RSCV <sub>n</sub> /Fgi |           | Fine           |
| Fe Arc<br>ND F-UR               | 4-4 200/10          | 3"     | V=<br>5.76  | DF6   | G16R  | G16/7B       | 13/5 | 098-02-e           | B    | RSCV <sub>n</sub> /Fgi |           | Fin            |
| Fe Arc<br>ND F-UR               | 17- 1 in in/out out |        |             |       | G16R  | G16/7B       | 13   | "                  | A    | set 90° R              | temp 22°F | big blue shift |
|                                 |                     |        |             |       |       | 098 4"       | 69°  | 25 235             |      |                        |           |                |
|                                 |                     |        |             |       |       | IIa0 5 1/2"  | 68°  | 20 179             |      |                        |           |                |
|                                 |                     |        |             |       |       | IIIa5 5 1/2" | 68°  | 17 250             |      |                        |           |                |

317

Emulsion Batches:

Date THURS/Fri. 1978 MAR 16/17 Observers Fgi-Tn/KK-Tn.....

..098-02E..30097-16038  
..III.9J-E..01106-04038

| 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.  |
|-----------|----------------------|---------------|---------------------|-------------------------|-----------------------|-------------------|---------------|---------------------------|-------|
| 42437     | HD 22468             | 3 31.6        | +0° 16              | 19 22                   | 20 53                 | 04 38W            | +             | Fe Arc<br>NO FILTER       | 4-4-4 |
| 42437T    | Spot Calc for        | 42437, 39-41. |                     | 15min @                 | 15V D3<br>4810        | 7V D1<br>Hx       | 7V D2<br>5450 |                           |       |
| 42438     | HD 47105             | 6 31.9        | +16 29              | 21 49                   | 22 00                 | 02 43W            | +16 34        | Fe Arc<br>NO FILTER       | 4-4-4 |
| 42439     | HD 118216            | 13 30.3       | +37 42              | 22 10                   | 22 41                 | 03 32E            | +37 24        | Fe Arc<br>NO FILTER       | 4-4-4 |
| 42440     | HD 118216            | 13 30.3       | +37 42              | 22 42                   | 23 11                 | 03 03E            | +37 24        | Fe Arc<br>NO FILTER       | 4-4-4 |
| 4-441     | HD 118216            | 13 30.3       | +37 42              | 23 12                   | 23 42                 | 02 32E            | +37 24        | Fe Arc<br>NO FILTER       | 4-4-4 |
| 42442     | HD 47105             | 6 31.9        | +16 29              | 23 54                   | 00 06                 | 04 50W            |               | Fe Arc<br>NO FILTER       | 4-4-4 |
| 42443     | HD 131511            | 14 48.9       | +19 33              | 0 13                    | 01 15                 | 02 16E            | +19 22        | Fe Arc<br>NO FILTER       | 8-8-8 |
| 42443T    | Spot Calibration for | 42443         |                     | 15" @ 15"               | D4<br>3900            | D3<br>4300        | D2<br>4810    |                           |       |
| 42444     | HD 124897            | 14 11.1       | +19 42              | 01 22                   | 01 49                 | 01 04E            |               | Fe Arc<br>Wrt #8          | 30-   |



16038  
09038

Spectr. Temp. +30°F ..... Dome Temp./Hum. +24°F/H=2070 Transparency Conditions ... cloudy w/ Hc clear <sup>388</sup>

Focus 90-R .....

Spectr. Temp. .... Dome Temp./Hum +70°F/H=100+8

Comparison  
Type/Filter Exp  
Fe Arc  
No Filter  
Fe Arc  
No Filter  
Fe Arc  
No Filter  
Fe Arc  
No Filter  
Fe Arc  
No Filter  
Fe Arc  
No Filter  
Fe Arc  
No Filter  
Fe Arc  
No Filter  
Fe Arc  
No Filter  
Fe Arc  
No Filter

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst. | Grating/Tilt | Slit | Emulsion           | P.H. | Program   | Remarks                                    | Quality                                       |
|-----------|--------|-----------|------|-------|--------------|------|--------------------|------|-----------|--|---|
| 400/40    | 2.4"   | 6.68      | G0V  | G16R  | G16/7B       | 13/5 | 098-02e<br>098-02E | A    | Fgi/RSCVn |  |   |
| 40/31     | 2"     | 1.9       | A0IV | G12B  | G12/7B       | 9/5  | IIa1-E             | B    | Asm Sp KK |  | fine  |
| 400/100   | 1-2"   | 5.3       | F2IV | G16R  | G16/7B       | 13/5 | 098-02-e           | A    | Fgi/RSCVn |  |   |
| 400/99    | 1-2"   | 5.3       | F2IV | G16R  | G16/7B       | 13/5 | 098-02-e           | B    | RSCVn/Fgi |  |   |
| 400/100   | 1-2"   | 5.3       | F2IV | G16R  | G16/7B       | 13/5 | 098-02-e           | A    | RSCVn/Fgi |  |   |
| 40/25     | 2"     | 1.9       | A0IV | G12B  | G12/7B       | 9/5  | IIa1-e             | B    | Asm Sp KK |  | v sl wk                                       |
| 400/56    | 1.2"   | 6.8       | dk1  | G12B  | G12/7B       | 13/5 | IIa0-e<br>IIa0-e   | A    | Asm Sp KK | Some cloud <u>faint</u>                    | sl wk   |
| 400/180   | 2"     | 1.24      | K0V  | G24I  | G12/.9B      | 13/5 | IV-Nh              | B    | Test      | ✓ Filter before slit<br>passing thin cloud | exp fine<br>focus poor<br>comp wk<br>7-11-9-1 |
|           |        |           |      |       |              |      | IIa0 5/12 68°      |      | 20 170    |  |   |
|           |        |           |      |       |              |      | IIIa5 5/12 68°     |      |           |  |   |
|           |        |           |      |       |              |      | IV-N 5/12 68°      |      | .16       |  |   |
|           |        |           |      |       |              |      | 098 4 1/4 68°      |      | .18 1.54  |  |   |

319

FRI/SAT

Date 1978 MAR 17/8 Observers Ly-Ta

Emulsion Batches:

..II.0-E.20097-16038  
..III.1-E.01106-04038

| 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.   |
|-----------|-----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|--------|
| 42445     | HD72208         | 08 26.5      | +10 09              | 22:33                   | 00:45                 | 3 38 W            | +10 01      | Fe Arc<br>ND=1.10         | 8-8-8  |
| 42445T    | Spot Col'n      | 42445-46,    | 48-50,              | 15 min @ 15V            |                       | D4<br>3900        | D3<br>4300  | D2<br>4810                |        |
| 42446     | HD131511        | 14 48.9      | +19 33              | 00 52                   | 02:59                 | 0 28 E            | +19 22      | Fe Arc<br>ND=1.1          | 8-8-8  |
| 42446T    | Strip Col'n for | 42445-46,    | 48-50,              |                         |                       |                   |             |                           | 90 sec |
| 42447     | HD139892        | 15 35.6      | +36 58'             | 03 03                   | 04 00                 | 0 13 E            | +36 52      | Fe Arc<br>NO FILTER       | 3-3-3  |
| 42447T    | Spot Col'n for  | 42447        |                     | 15 min @ 15V            |                       | D4<br>3900        | D4<br>4300  | D4<br>4810                |        |
| 42448     | HD163506        | 17 51.4      | +26 4'              | 04 04                   | 04 55                 | 1 34 E            | +26 13      | Fe Arc<br>ND=1.1          | 7-8-8  |
| 42449     | HD175426        | 18 50.2      | +36 51              | 04 58                   | 05 40                 | 1 47 E            | +37 04      | Fe Arc<br>ND=1.1          | 8-8-8  |
| 42450     | HD124897        | 14 11.1      | +19 42              | 05 44                   | 05 45                 | 2 56 W            | +19 27      | Fe Arc<br>ND=1.1          | 12-12  |



Spectr. Temp. 30°F

Dome Temp./Hum. 420°F / 95%

Transparency Conditions hazy (slow) 320

Focus 90R

Spectr. Temp. ....

Dome Temp./Hum. 416°F / 97%

Comparison  
Type/Filter Exp

Fe Acc

ND-110

2

110

Fe Acc

ND-110

90

Fe Acc

ND-110

33

Fe Acc

ND-110

7

Fe Acc

ND-110

88

Fe Acc

ND-110

2

Fe Acc

ND-110

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp.          | Inst. | Grating/Tilt | Slit    | Emulsion | P.H.   | Program       | Remarks     | Quality     |
|-----------|--------|-----------|--------------|-------|--------------|---------|----------|--------|---------------|-------------|-------------|
| 100/70    | 3-4    | 6.53      | AO p NE 12 B | G12 B | 12/7B        | 13/.5   | Ilad-e   | A      | Sp Bin-Ly     | Focus ok    | fine        |
|           |        |           |              |       |              |         | Ilad-E   |        |               |             |             |
| 100/105   | 3-4    | 6.84      | dK1 N5 12 B  | G12 B | 12/7B        | 13/.5   | Ilad-e   | B      | Asm Ep-KK     | Focus       | fine        |
|           |        |           |              |       |              |         | Ilad-E   |        |               |             |             |
| 200/110   | 3-4    | 4.95      | B7V          | NG12B | G12/7B       | 13/.5   | Ilad-e   | A      | Sp Bin Bin/Ly | S2 Cor 1302 | Flex fine   |
|           |        |           |              |       |              |         | Ilad-E   |        |               |             |             |
| 200/50    | 3-4    | 5.8       | F2Ie         | NG12B | G12/7B       | 13/.5   | Ilad-e   | B      | Gph - Fe      | 89 Merc     | Flex fine   |
| 200/51    | 3-4    | 5.5       | B3           | "     | "            | 13/.5   | Ilad-e   | A      | Sp Bin - Ly   | S' Lyz.     | Flex vs/str |
| 100/14    | 3-4    | 1.24      | K            | "     | "            | "       | "        | B      | STD. RV       | Focus       | vs/str      |
|           |        |           |              |       | Ilad 6"      | D19 67° |          | 19 180 |               |             |             |
|           |        |           |              |       | Ilad         |         |          | 15 254 |               |             |             |

321

Emulsion Batches:

IIIa-5E 01106 - 04038

IIc-0-E 20077 - 16038

Date 19/20 MAR 1978  
SUN/MON

Observers Blu-Tu/Rm-Tu

| 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.  |
|-----------|--------------------------------|----------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| 42451     | HD 37468                       | 05 33.7              | -2° 39'             | 19 00                   | 19 18                 | 01 12W            | -2° 27'     | Fe Arc<br>No Filter       | 3-3-3 |
| 42452     | HD 47105                       | 06 31.9              | +16 29              | 19 21                   | 19 28                 | 00 22W            | +16 35      | Fe Arc<br>No Filter       | 3-3-  |
| 42452T    | Spot Calc for 42451-52, 56     |                      |                     | 15min @                 |                       | 15V 3900          | 4300        | D4<br>D4<br>4810          |       |
| 42453     | HD 88021/2                     | 10 03.8              | +20 49              | 19 32                   | 22 27                 | 00 09E            | +20 36'     | Fe Arc<br>No Filter       | 8-0-E |
| 42453T    | Spot Calc for 42453-55, 57-59. |                      |                     | 15min @ 15V             |                       | 3900              | 4300        | D4<br>D3<br>D2<br>4810    |       |
| 42454     | HD 97937                       | 11 10 44             | +13 23              | 22 30                   | 00 32                 | 00 49W            | +13 08      | Fe Arc<br>N.D. 1.10       | 8-8-8 |
| 42455     | HD 84441 = Glco                | 9 <sup>h</sup> 40.2  | +24° 14             | 00 38                   | 00 56                 | 02 44W            | +24 03      | Fe Arc<br>N.D. 1.10       | 12-1- |
| 42456     | HD 139892                      | 15 <sup>h</sup> 35.6 | +36° 58             | 01 06                   | 01 59                 | 02 08E            | +36 50      | Fe Arc<br>N.D. 1.10       | 3-3-3 |
| 42457     | HD 124897                      | 19 <sup>h</sup> 11.1 | +19° 42             | 02 04                   | 02 07                 | 00 35E            | +19 27      | Fe Arc<br>N.D. 1.10       | 14 12 |
| 42458     | HD 163506 = 29 Her             | 17 <sup>h</sup> 51.4 | +26° 04             | 02 13                   | 03 06                 | 03 16E            | +26° 11     | Fe Arc<br>N.D. 1.10       | 8-8-8 |
| 42459     | HD 186688 = SU Cyg             | 19 <sup>h</sup> 40.8 | +29° 01             | 03 10                   | 05 41                 | 02 29E            | +29 23      | Fe Arc<br>N.D. 1.10       | 7-7-7 |
| 42459T    | Strip Calc for 42453-55, 57-59 |                      |                     |                         |                       |                   |             | 95 sec                    |       |



Spectr. Temp. 36°F

Dome Temp./Hum. 30°F/71%

Transparency Conditions Very good but gusty 322

Focus 90.R

Spectr. Temp. 23°F

Dome Temp./Hum. 23°F/80.2

| Companion<br>Type/Filter | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.        | Inst. | Grating/<br>Tilt | Slit   | Emulsion | P.H. | Program     | Remarks                 | Quality               |
|--------------------------|-----------|--------|--------------|------------|-------|------------------|--------|----------|------|-------------|-------------------------|-----------------------|
| 3-3                      | 100/101   | 2"-3"  | 3.51         | 09.5Z      | G12   | G12/1.7B         | 13/1.5 | IIIa-JE  | A    | Sp. Bin-Bln | Focus fine              | fine                  |
| 3-3                      | 100/35    | 2-3    | 1.9          | A0IV       | G12   | G12/1.7B         | 9/1.5  | IIIa-JE  | B    | ASM-KK      | Focus Fine              | sl str.               |
|                          |           |        |              |            |       |                  |        | IIIa-JE  |      |             |                         |                       |
| 8-8                      | 100/130   | 2-3    | 7.2          | 965<br>+A2 | G12   | G12/1.7B         | 13/1.5 | IIa-O-E  | A    | VB Bln      | Flexor Focus Bad        | Fine                  |
|                          |           |        |              |            |       |                  |        | IIa-O-E  |      |             |                         |                       |
| 8-8                      | 100/100   | 3-4"   | 6.49         | A6u        | G12   | G12/1.7B         | 13/1.5 | IIa-O-E  | B    | Sp. Bin-Bln | ssu focu                | Fine                  |
| 12-5                     | 100/24    | 2-3    | 3.1          | G0p II     | G8    | G8/-25           | 9/1.5  | IIa-O-E  | A    | Ceph/EVans  | Focus fine              | Fine                  |
| 3-3                      | 100/111   |        | 4.45         | B7I        | G12   | G12/1.7B         | 13/1.5 | IIIa-JE  | B    | SB-Bln/Ly   | Focus 7/10" r           | Fine                  |
|                          | 100/25    |        | 1.29         | K          | G12   | "                | 9/1.9  | IIa-O-E  | A    | Std Vel     | Focus good              | Fine                  |
| 8-8                      | 100/56    | 3-4    | 5.82         | F2Ia       | "     | "                | 13/1.5 | IIa-O-E  | B    | Ceph/Fe     | thin cloud              | Fine focus<br>sl fog? |
| 7-7                      | 100/126   | 3"     | 6.8-<br>7.7  | F0-G1      | "     | "                | 18/1.5 | IIa-O-E  | A    | Ceph/EVans  | sl flexure<br>low focus | sl str                |
|                          |           |        |              |            |       |                  |        | IIa-O-E  |      |             |                         |                       |
|                          |           |        |              |            |       | IIa 6" D19       | 67°    | 20-176   |      |             |                         |                       |
|                          |           |        |              |            |       | IIIa J           |        | 15-253   |      |             |                         |                       |

32<sup>3</sup> SECONDARY REALUMINIZED MON MAR 20, 1978

Emulsion Batches:

Date ..... Observers .....

| 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   |
|-----------|--------------|--------------|-------------------------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| 42459T2   | Fleming test |              | largid                              | optical plate           |                       |                   |             | FCAR<br>N.D.10            | 12-12 |
| 42459T3   | "            |              |                                     | "                       |                       |                   |             | "                         | "     |
| 42459T4   | "            |              | tried to move the gratings          |                         |                       |                   |             | "                         | "     |
| 42459T5   | "            |              | "                                   | "                       |                       |                   |             | "                         | "     |
| 42459T6   | "            |              | tried to move the plateholder mount |                         |                       |                   |             | "                         | "     |
| 42459T7   | "            |              | "                                   | "                       |                       |                   |             | "                         | "     |
| 42459T8   | "            |              | exp & wrap plate                    |                         |                       |                   |             | "                         | "     |
| 42459T9   | "            |              | "                                   | "                       |                       |                   |             | "                         | "     |
| 42459T10  | "            |              | 50mi                                | E                       |                       |                   |             |                           |       |
| 42459T11  | "            |              | 30mi                                | E                       |                       |                   |             |                           |       |
| 42459T12  | "            |              | 1 hr                                | E                       |                       |                   |             |                           |       |



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

Transparency Conditions ..... 204

Focus .....

Note \* Try focus of +30 Red above chart reading for given tempo.

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

| Comparison Type/Filter Exp | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks          | Quality  |
|----------------------------|-----------|--------|-----------|-----|-------|--------------|------|----------|------|---------|------------------|----------|
| FeARc<br>W.D. 10           |           |        |           |     |       |              | 9    |          | A    |         |                  | Fine     |
|                            |           |        |           |     |       |              | '    |          | B    |         |                  | Fine     |
|                            |           |        |           |     |       |              | '    |          | A    |         | Flex 45° to disp | Flex bad |
|                            |           |        |           |     |       |              | '    |          | B    |         | " " " "          | Flex     |
|                            |           |        |           |     |       |              | '    |          | A    |         |                  | Fine     |
|                            |           |        |           |     |       |              | '    |          | B    |         |                  | Fine     |
|                            |           |        |           |     |       |              | '    |          | D    |         |                  | Fine     |
|                            |           |        |           |     |       |              | '    |          | B    |         |                  | Fine     |
|                            |           |        |           |     |       |              |      |          | A    |         |                  | Fine     |
|                            |           |        |           |     |       |              |      |          | B    |         |                  | Fine     |
|                            |           |        |           |     |       |              |      |          | A    |         |                  | Fine     |

325

THURS / FRI

Date Mar 23/24, 1978 Observers L. y. - R. C.

Emulsion Batches:

III E. 01126-22038III E. 20077-20038

| 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 | Exposure |
|-----------|----------------------------|--------------|---------------------|--------------------------|-----------------------|-------------------|-------------|---------------------------|----------|
| 42460     | HD47105                    | 06 31.9      | +16 29              | 19:08                    | 19:14                 | 00 25W            | +16 26      | NO FILTER<br>FE ARC       | 4-4      |
| 42461     | HD26676                    | 04 08.1      | +09 58              | 19:20                    | 20:35                 | 04 10W            | +10 09      | FE ARC<br>ND=1.10         | 2-       |
| 4246A1    | optical for plates 42460-  |              |                     | 15 min @ 15 Volts        |                       | D4<br>3900        | D4<br>4300  | D4<br>4810                |          |
| 4246192   | strip cal for plates 42460 |              |                     |                          |                       | 180 sec           |             |                           |          |
| 4246173   | " " " " 42461              |              |                     |                          |                       | 90 sec            |             |                           |          |
| 4246174   | T. L. test                 |              |                     | 3 hr E with              | G-12                  |                   |             | no filter                 | 10-10    |
| 4246175   | "                          |              |                     | 3 hr E with              | G-8                   |                   |             |                           | 10-10    |
| 4246176   | "                          |              |                     | hard round grating       | G-8                   |                   |             |                           | 10/10    |
| 4246177   | "                          |              |                     | "                        | "                     |                   |             |                           | 10/10    |
| 4246178   | "                          |              |                     | moving optical plate     |                       |                   |             |                           |          |
| 4246179   | "                          |              |                     | moving plateholder mount |                       |                   |             |                           |          |
| 42462     | HD72208                    | 08 26.5      | +10 09              | 23:40                    | 01:10                 | 04 27W            | +09 53      | FE ARC<br>ND=1.1          | 8-8      |
| 42463     | HD131511                   | 14 48.9      | +19 33              | 01:15                    | 02:48                 | 00 15E            | +19 15      | FE ARC<br>ND=1.1          | 8-8      |
| 4246571   | optical for plates 42461-  |              |                     | 15 min @ 15 Volts        |                       | D4<br>3900        | D3<br>4300  | D2<br>4810                |          |
| 42464     | HD175426 (S. L. 42)        | 18 50.2      | +36 51              | 02:54                    | 05:10                 | 01 54E            | +36 58      | FE ARC<br>NO FILTER       | 4-4      |



Spectr. Temp. 48F

Dome Temp./Hum. +2°C 65%

Transparency Conditions *clear, windy* 326  
+ with the wind rapid cooling to < 32F

Focus 70R

Spectr. Temp. ....

Dome Temp./Hum. ....

| Comparison Type/Filter Exp | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst. | Grating/Tilt | Slit     | Emulsion   | P.H. | Program   | Remarks   | Quality |
|----------------------------|-----------|--------|-----------|------|-------|--------------|----------|------------|------|-----------|---|---------|
| NO FILTER<br>FEARL 44      | 100/31    | 2-3    | 1.9       | AOIL | NG12B | G12B         | 9/7      | Ilva-Je    | A    | ASH Sp-KK |   | fine    |
| FEARL<br>ND-11             | 100/87    | 3-6    | 6.2       | B8   | "     | "            | 13/5     | Ilva-O-E   | B    | SpBn-Ly   | cloud.  | 3900 wk |
|                            |           |        |           |      |       |              |          | Ilva-S-E   |      |           |   |         |
|                            |           |        |           |      |       |              |          | Ilva-J-E   |      |           |   |         |
|                            |           |        |           |      |       |              |          | Ilva-O-E   |      |           |   |         |
|                            |           |        |           |      |       |              | 9        | Ilva-J     | A    |           | } Flex parallel to Resp<br>" " " "<br>developed " " " |         |
|                            |           |        |           |      |       |              | "        | "          | B    |           |   |         |
|                            |           |        |           |      |       |              | "        | "          | A    |           |   |         |
|                            |           |        |           |      |       |              | "        | "          | B    |           |   |         |
|                            |           |        |           |      |       |              | "        | "          | B    |           |   |         |
| Fe Arc<br>ND-11            | 100/60    | 4-5    | 6.5       | ADP  | NG12  | G12B/.7      | 13/5     | Ilva-O-E   | A    | SpBn-Ly   |   | fine    |
| Fe Arc<br>ND-11            | 100/100   |        | 6.8       | DK1  | "     | "            | 13/5     | Ilva-O-E   | B    | ASH Sp-KK |   |         |
|                            |           |        |           |      |       |              |          | Ilva-O-E   |      |           |   |         |
| Fe Arc<br>ND-11            | 100/130   | 4-5    | 5.3       | B3   | NG12  | G12B/.7      | 13/5     | Ilva-J-E   | A    | SpBn-Ly   | clouds  | sl wk   |
|                            |           |        |           |      |       | 425<br>130   | 13<br>18 | 251<br>172 |      |           |   |         |

2nd Gary removed new 612 from mount + checked.

FRI/SAT

Date MAR 24/25 1978 Observers Ly-R

Emulsion Batches:

III-E 01126-22038

IIIV-E 20077-20038

| 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. |
|-----------|----------------------|------------------|---------------------|-------------------------|-----------------------|---------------------|-------------|---------------------------|------|
| 42465     | HD37468              | 05 33.7          | -2 39               | 19:25                   | 21:20                 | 03 34W              | -2 35       | Fe ARC<br>NO FILTER       | 4/4  |
| 42465T1   | spot cal for plates  | 42465-68, 70, 71 |                     | 15min @ 15V             |                       | D4<br>3900          |             |                           |      |
| 42465T2   | strip cal for plates | 42465-68, 70, 71 |                     | 150 sec                 |                       |                     |             |                           |      |
| 42466     | HD 47105             | 6 31.9           | +16 29              | 21:24                   | 21:54                 | 03 10W              | +16 25      | Fe ARC<br>NO FILTER       | 4-4  |
| 42467     | HD45542              | 6 23.0           | +20 17              | 21:57                   | 22:52                 | 04 17W              | +20 15      | Fe ARC<br>NO FILTER       | 4-4  |
| 42468     | HD87504              | 10 00.3          | -12 35'             | 22:57                   | 00:07                 | 01 55W              | -12 56      | Fe ARC<br>NO FILTER       | 4-4  |
| 42469     | HD 131511            | 14 48.9          | +19 33              | 00:13                   | 01:44                 | 01 11E              | +19 16      | Fe ARC<br>NO FILTER       | 8-8  |
| 42469T1   | spot cal for plate   | 42469, 72        |                     | 15min @ 15V             |                       | D4 153<br>3900 4300 | 52          |                           |      |
| 42469T2   | strip cal for plates | 42469, 72        |                     | 90 sec                  |                       |                     |             |                           |      |
| 42470     | HD139892             | 15 35.6          | +36 58              | 01:53                   | 03:02                 | 00 43E              | +36 44      | Fe ARC<br>NO FILTER       | 4-4  |
| 42471     | HD175426             | 18 50.2          | +36 51'             | 03:06                   | 04:50                 | 02 10E              | +36 58      | Fe ARC<br>NO FILTER       | 4-4  |
| 42472     | HD163506             | 17 51.4          | +26 04              | 04:53                   | 05:40                 | 00 20E              | +26 03      | Fe ARC<br>NO FILTER       | 8-8  |
| 42472F1   | focus test           | out out / L L    |                     | 200F 90R                |                       |                     |             | NO FILTER                 | 5/5  |



Spectr. Temp.  $28^{\circ}\text{F}$ Dome Temp./Hum.  $-6^{\circ}\text{C}/65\%$ Transparency Conditions *Lowly all night* 328Focus *90R**what a difference a Secondary makes!!*Spectr. Temp.  $20^{\circ}\text{F}$ Dome Temp./Hum.  $-9^{\circ}\text{C}/80\%$ 

| Com<br>Type/Filter  | son<br>Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.           | Inst.                             | Grating/<br>Tilt | Slit | Emulsion                      | P.H. | Program         | Remarks  | Quality                   |
|---------------------|------------|-----------|--------|--------------|---------------|-----------------------------------|------------------|------|-------------------------------|------|-----------------|--|---------------------------|
| Fe Arc<br>No Filter | 4-4        | 100/99    | 3-4    | 3.51         | 09.5V         | NG12B                             | NG12B<br>/1.7    | 13/5 | IIIaJ-E<br>IIIaJ-E<br>IIIaJ-E | A    | Sp Bin - Blu    | 5 OR AB.   |                           |
| Fe Arc<br>No Filter | 4-4        | 100/182   | 3-4    | 1.9          | ADIV          | NG12B                             | G12/1.7          | 9/5  | IIIaJ-E                       | B    | Asm. Sp - Hk    | 8 Gem  | v sl str                  |
| Fe Arc<br>No Filter | 4-4        | 100/250   | 3-4    | 4.04         | B7IV          | "                                 | "                | 13/5 | IIIaJ-E                       | A    | Sp Bin - Blu    | 1 Gem  | fine                      |
| Fe Arc<br>No Filter | 4-4        | 100/241   |        | 4.51         | B8V           | "                                 | "                | "    | IIIaJ-E                       | B    | Sp Bin - Blu    |  |                           |
| Fe Arc<br>ADD. 10   | 8-9        | 100/200   |        | 6.84         | dk1           | "                                 | "                | "    | IIaD-E<br>IIaD-E<br>IIaD-E    | A    | Asm Sp - Hk     |  | fine                      |
| Fe Arc<br>No Filter | 4-4        | 100/242   | 3-4    | 4.95         | B7V           | NG12B                             | G12/1.7          | 13/5 | IIIaJ-E                       | B    | Sp Bin - Blu/Ly | 3 <sup>2</sup> Cor Bor<br><i>Jammal<br/>sp bar, broke on<br/>removal</i> |                           |
| Fe Arc<br>No Filter | 4-4        | 100/242   |        | 5.3          | B3            | "                                 | "                | "    | IIIaJ-E                       | A    | Sp Bin - Ly     | 8' LYR.  | v sl wh                   |
| Fe Arc<br>No Filter | 8-8        | 100/76    |        | 5.81         | F2a           | "                                 | "                | "    | IIaD-E<br>9 IIaD-E            | B    | Cpl - Fe        | 89 Hot. DAWN.  | fine<br>center<br>to blue |
|                     |            |           |        |              | IIIaJ<br>IIaD | 5 <sup>1</sup> / <sub>2</sub> mag | 68°F             | 18   | 178                           |      |                 | what a lot of crud in the<br>sky.  |                           |

32A

2nd Half only

Tues

Date .. Mar. 28.. 1978..... Observers .. Bud - Ri.....

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. |
|-----------|---------------------|----------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 42473     | HD 137182           | 15 <sup>h</sup> 19.5 | +10° 54'            | 02:18                   | 04 29                 | 01 29             | +10° 42'    | Fe ARC<br>D.D.1.10        | 8-8  |
| 42473T1   | optical for plates  | 42473                |                     |                         | 15min @ 1520          |                   | D4          | D3                        | D2   |
| 42473T2   | steps and for plate | 42473                |                     |                         | Good                  |                   | 3900        | 4300                      | 4810 |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |
|           |                     |                      |                     |                         |                       |                   |             |                           |      |

Spectr. T  
Focus...  
Spectr. T  
Exp. Mr.

504182



Spectr. Temp. ... 34°F .....

Dome Temp./Hum. -01°C ..... 100%

Transparency Conditions ..... 330

Focus ..... 80R .....

but everything is dry outside

Spectr. Temp. ... 34°F .....

Dome Temp./Hum. ....

Comparison  
Type/Filter Exp

Fe A26  
D.D. 110 8-8  
D2  
4P.B

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst.  | Grating/Tilt | Slit               | Emulsion            | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|-----|--------|--------------|--------------------|---------------------|------|---------|---------|---------|
| 500/182   | 3-4    | 7.19      | A0  | N.G-12 | 6-12/7       | 13/5               | II <sub>20</sub> -E | A    | Am-MR   | clouds  | fine    |
|           |        |           |     |        |              |                    | II <sub>20</sub> -E |      |         |         |         |
|           |        |           |     |        |              |                    | II <sub>20</sub> -E |      |         |         |         |
|           |        |           |     |        |              | 6 <sup>m</sup> D19 | 68 <sup>o</sup>     | 21   | 180     |         |         |





Spectr. Temp. ... 37°F

Dome Temp./Hum. ... 98%

Transparency Conditions ... 332

Focus ... 80R

Spectr. Temp. ....

Dome Temp./Hum. ... 0°C ... 100%

| Comparison<br>Type/Filter | Exp  | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp. | Inst.  | Grating/<br>Tilt | Slit   | Emulsion | P.H. | Program | Remarks | Quality |
|---------------------------|------|-----------|--------|--------------|-----|--------|------------------|--------|----------|------|---------|---------|---------|
| Fe RC                     | 1-10 | 800/77    | 3-4    | 6.75         | Ap  | N.B-12 | G12/7B           | 91.3   | Ilad-E   | A    | Ap-MR   | CLOUDS  | sl wh   |
|                           |      |           |        |              |     |        |                  |        | Ilad-E   |      |         |         |         |
|                           |      |           |        |              |     |        |                  | 6" D19 | 68°      |      |         |         |         |

1333

Wed-Thurs

Date Mar 29-30 1978 Observers Blm-Tm/Fqi-Tm

Emulsion Batches:

IIIaJ-E 01126-22038  
 IIa0-E 20077-24038  
 O98-02E 30097-16038

| 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.  |
|-----------|----------------------------------|----------------------|---------------------|-------------------------|-----------------------|-------------------|-----------------|---------------------------|-------|
| 42475     | HD 37468                         | 05 33.7              | -2 39               | 19:13                   | 19:28                 | 02 01W            | -2° 28'         | No Filter<br>Fe Arc       | 4-4   |
| 42475T    | Spot Calc for 42475              |                      |                     | 15 min @                | 17.5V D4<br>3900      | 15V D4<br>4300    |                 | 15V D4<br>4810            |       |
| 42476     | HD 88021/2                       | 10 <sup>h</sup> 03.8 | +20° 49             | 19:34                   | 22:11                 | 00 14W            | +20° 34'        | Fe Arc<br>NO 110          | 7-7-7 |
| 42476T    | Spot Calc for 42476-77, 80       |                      |                     | 15 min @ 15V            | D4<br>3900            | D3<br>4300        | D2<br>4810      |                           |       |
| 42477     | HD 112028                        | 12 48.3              | +83 58              | 22:16                   | 22:57                 | 01 42 E           | +83 37          | Fe Arc<br>NO 110          | 7-8   |
| 42478     | HD 106677                        | 12 11.0              | +73 07              | 23:04                   | 00:43                 | 60:40W            | +72 46          | Fe Arc<br>none            | 3-5-7 |
| 42478T    | Spot Calc for 42478-79           |                      |                     | 15 min @                | 15V D3<br>4810        | 7V D1<br>Hx       | 7V D2<br>5450   |                           |       |
| 42479     | BD+36° 2344                      | 13 06.0              | +36° 28.0           | 00:50                   | 03 11                 | 2 14W             | +36 10          | Fe Arc<br>none            | 3-3-3 |
| 42480     | HD 186688                        | 19 40.8              | +29 01              | 03:22                   | 04 47                 | 2 45 E            | +29 20          | Fe Arc<br>NO 110          | 7-8-8 |
| 42480T    | Strip Calc for 42476-77, 80, -81 |                      |                     |                         |                       |                   | 90sec           |                           |       |
| 42481     | 163506                           | 17 51.4              | +26° 04             | 04:51                   | 05 25                 | 0 16 E            | +26 10          | Fe Arc<br>NO 110          | 3-8-8 |
| 42481T    | Strip Calc for 42475             |                      |                     |                         |                       |                   | 180sec          |                           |       |
| 42481F1   | Focus Test                       |                      |                     |                         |                       |                   | in in / out out | Fe Arc<br>none            | 12-1- |



Spectr. Temp. +36°F

Dome Temp./Hum. +29°F/70%

Transparency Conditions . Very good . . . size . . . 384

Focus . . . OR

Spectr. Temp. +30°F

Dome Temp./Hum. +26°F/92%

| Exp. Mtr.         | Seeing | Pig. Mag. | Sp.   | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program            | Remarks           | Quality         |
|-------------------|--------|-----------|-------|-------|--------------|------|----------|------|--------------------|-------------------|-----------------|
| 200/102           | 2"     | 3.51      | 095X  | G12   | NG12/7B      | 13/5 | IIIa-JE  | A    | Spl Bin - Blu      | broken 2pc        |                 |
|                   |        |           |       |       |              |      | IIIa-JE  |      |                    |                   |                 |
| 100/130           | 2.3"   | 7.20      | 095A2 | G12   | NG12/7B      | 13/5 | IIa0-E   | B    | VB Blu             |                   | flexure         |
|                   |        |           |       |       |              |      | IIa0-E   |      |                    |                   |                 |
| 0/144             | 2-3    | 5.2       | shell | G12   | NG12/7B      | 13/5 | IIa0-E   | A    | Blu - shell        |                   | fine            |
| 2/86              | 3"     | 5.92      | K0    | G16R  | G16/7B       | 13/5 | 098-02E  | B    | RSCVn - Fgi        | thin cloud        | fine            |
|                   |        |           |       |       |              |      | "        |      |                    |                   |                 |
| 00/188            | 3      | 9.31      | F4    | G16R  | G16/7B       | 18/5 | 098-02-e | A    | RS CVn/Fgi         | clear again       | guiding         |
| 00/264            | 3'     | 6.8-7.66  | FO-G1 | G12B  | NG12/7B      | 13/5 | IIa0-E   | B    | Cepheid/Evans      | Bth. Prob not Max | sl flou.        |
|                   |        |           |       |       |              |      | IIa0-E   |      |                    |                   |                 |
| 00/59             | 2"     | 5.81      | F2Ia  | G12B  | G12/7B       | 13/5 | IIa0-E   | A    | Ceph-Fe            |                   | fine            |
|                   |        |           |       |       |              |      | IIIaJ-E  |      | Is this necessary? | No!               |                 |
| set OR Temp +30°F |        |           |       | G12   | G12          | 13   | IIIaJ    | B    |                    |                   | mod. blue shift |
|                   |        |           |       |       | IIIaJ        | 16   | 254      |      |                    |                   |                 |
|                   |        |           |       |       | IIa0         | 20   | 161      |      |                    |                   |                 |
|                   |        |           |       |       | 098          | 28   | 196      |      |                    |                   |                 |

335

Emulsion Batches:

Date *March 31*..... Observers *T.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.  |
| 42484T1   | Flexure Test   |              |                     | 3 <sup>h</sup> 30 E     | 00 53 W               |                   | +10° 12     | Fe Arc<br>no Filter | 9-9   |
| F1        | Focus Test     |              |                     |                         | "                     |                   | "           | "                   | 11-11 |
| F2        | Focus Test     |              |                     |                         | "                     |                   | "           | "                   | 11-11 |
| T2        | Grat Flex Test |              |                     |                         | "                     |                   | "           | "                   | 9-9   |
| T3        | Grat Flex Test |              |                     |                         | "                     |                   | "           | "                   | 9-9   |
| T4        | Flexure Test   |              |                     | 4 <sup>h</sup> 00 E     | 01 30 W               |                   | "           | "                   | 9-9   |
| 42482     | Sky            |              |                     | 14:45                   |                       |                   |             | "                   | 15-15 |
| 42483     | Sky            |              |                     | 14:55                   |                       |                   |             | "                   | 15-15 |
| 42483F1   | Focus Test     |              |                     |                         |                       |                   |             | "                   | 5-5   |
| 42484     | Sky            |              |                     | 17:10                   |                       |                   |             | "                   | 15-15 |
| 42484F0   | Focus Test     |              |                     |                         |                       |                   |             | "                   | 5-5   |
|           |                |              |                     |                         |                       |                   |             |                     |       |
|           |                |              |                     |                         |                       |                   |             |                     |       |
|           |                |              |                     |                         |                       |                   |             |                     |       |
|           |                |              |                     |                         |                       |                   |             |                     |       |
|           |                |              |                     |                         |                       |                   |             |                     |       |
|           |                |              |                     |                         |                       |                   |             |                     |       |
|           |                |              |                     |                         |                       |                   |             |                     |       |
|           |                |              |                     |                         |                       |                   |             |                     |       |
|           |                |              |                     |                         |                       |                   |             |                     |       |
|           |                |              |                     |                         |                       |                   |             |                     |       |

Spectr. T.

Focus ...

Spectr.

Exp. Mtr.

14 in

"

8



Spectr. Temp.  $+40^{\circ}\text{F}$ ..... Dome Temp./Hum.  $+35^{\circ}\text{F}/\text{H}=100\%$ 

Transparency Conditions ..... 336

Focus ..... 90-R ..... from 60R but with R decreasing

Bearings oiled &amp; new G12 remounted with plastic sheet instead of blotter

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

| Comparison<br>type/Filter   | Exp. | Exp. Mtr. | Seeing  | Ptg.<br>Mag. | Sp. | Inst.              | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program                                | Remarks  | Quality                                     |
|---|------|-----------|---------|--------------|-----|--------------------|------------------|------|----------|------|--|--|---|
| 7-Arc<br>No Filter  | 7-   |           |         |              |     | G12 B <sub>0</sub> | NG12/.78         | 9    | U100     | A    |  |  |   |
| "   | 11-  | in in     | out out |              |     | "                  | "                | 9    | "        | B    | set 90R                                | Temp 40°F  | ? } Center<br>Too blue<br>center sl<br>blue |
| "   | 11-  | "         | "       | "            |     | "                  | "                | 9    | "        | B    | set 70R                                | Temp 40°F  |   |
| "   | 9-   |           |         |              |     | "                  | "                | 9    | "        | A    | set 70R                                | On changing to G8, I noticed<br>that front bracket was<br>reversed |   |
| "   | 9-   |           |         |              |     | G8 B               | G16/.25B         | 9    | "        | A    | "                                      |  |   |
| "   | 9-   |           |         |              |     | G8 B               | G16/.25B         | 9    | "        | A    | "                                      | Plateholder seemed sl/loose<br>at end                              |   |
| "   |      |           |         |              |     | old G12            | G12/.49B         | 9    | "        | B    | Set 60R (from wrong direction, U same) |  |   |
| "   |      |           |         |              |     | "                  | "                | 9    | "        | A    |  |  |   |
| "   | 5    |           |         |              |     | "                  | "                | 9    | "        | B    |  |  |   |
| "   |      |           |         |              |     | new G12            | NG12/.675B       | 9    | "        | A    |  |  |   |
| "   | 55   |           |         |              |     | "                  | "                | 9    | "        | B    |  |  |   |
| Flexure is worse, if anything<br>& appears on both G8 & G12 spectra |      |           |         |              |     |                    |                  |      |          |      |  |  |   |

337

19:30 → 22<sup>h</sup>

Emulsion Batches:

Date Apr. 1/78..... Observers 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.  |
|-----------|------------------------|---------------------------------|--------------------------------------|---------------------------------|---------------------------------|-------------------|-------------|---------------------------|-------|
| 42485T1   | Spect Flexure Test     |                                 |                                      | 4 <sup>h</sup> 0 <sup>m</sup> E | 0 <sup>h</sup> 0 <sup>m</sup>   |                   | +40°00      | Fe Arc<br>IND110          | 6-12  |
| T2        | " "                    | "                               | -                                    | 0 <sup>h</sup> 0 <sup>m</sup>   | 4 <sup>h</sup> 0 <sup>m</sup> W |                   | +40°00      | "                         | 12-6  |
| F1        | Focus Test             | @ 4 <sup>h</sup> W              | gratings changed at 4 <sup>h</sup> W |                                 |                                 | 1.                | +40°00      | Fe Arc<br>NONE            | 4-4   |
| T3        | Spect Flex Test        |                                 |                                      | 4 <sup>h</sup> 0 <sup>m</sup> W | 0 <sup>h</sup> 0 <sup>m</sup>   |                   | +40°00      | Fe Arc<br>IND110          | 6-12  |
| F2        | *Single Pos. Flex Test | @ 0 <sup>h</sup> 0 <sup>m</sup> |                                      | 0 <sup>h</sup> 0 <sup>m</sup>   |                                 |                   | +40°00      | Fe Arc<br>none            | 2-2   |
| T4        | Spect Flex Test        |                                 |                                      | 0 <sup>h</sup> 0 <sup>m</sup>   | 4 0 E                           |                   | +40°00      | Fe Arc<br>none            | 12-6  |
| T5        | "                      |                                 |                                      | 4 0 E                           | 0 0                             |                   | -3°         | "                         | 6-12  |
| T6        | "                      |                                 |                                      | 0 0                             | 4 0 W                           |                   | -3°         | "                         | 12-6  |
| F3        | Focus Test             | @ 0 <sup>h</sup> 0 <sup>m</sup> |                                      |                                 |                                 |                   | -3          | "                         | 12-6  |
| T7        | Dec Flex Test          |                                 |                                      | Δ -3°                           | → +60°                          |                   |             |                           | 12-6  |
| F4        | Focus Test             | @ 0 <sup>h</sup> 0 <sup>m</sup> |                                      |                                 |                                 |                   | +60°        |                           | 13-14 |
| T8        | Sp Flex Test           |                                 |                                      | 2 <sup>h</sup> 0 E              | 2 0 W                           |                   | +60°        |                           | 6-12  |
| T9        | "                      |                                 |                                      | 2 0 E                           | 2 0 W                           |                   | +60         |                           | 6-12  |
| T10       | "                      |                                 |                                      | 2 E                             | 2 0 W                           |                   | +20         |                           | 6-12  |



Spectr. Temp.  $+41^{\circ}\text{F}$ Dome Temp./Hum.  $137^{\circ}\text{F} / 83\%$ Transparency Conditions *very gusty* 376

Focus .....

At beginning I found a screw for PHB in dark room very necessary for field curve. I inserted it &amp; tightened PHA as well, some sl tightening required

Spectr. Temp.  $+39^{\circ}\text{F}$ Dome Temp./Hum.  $133^{\circ}\text{F} /$ 

| Comparison<br>Type/Filter | Exp. Mtr. | Seeing | Ptg.<br>Mag.  | Sp. | Inst. | Grating/<br>Tilt | Slit | Emulsion            | P.H. | Program     | Remarks                             | Quality                         |
|---------------------------|-----------|--------|---------------|-----|-------|------------------|------|---------------------|------|-------------|-------------------------------------|---------------------------------|
| Fe Arc<br>ND110           | 6-        |        |               | +   | G8B   | G16/-25B         | 9    | IIaD-E <sup>v</sup> | A    | set 50R     | using motor (All PHs in Tight)      | much bl<br>Flex<br>wk up red    |
| "                         | 12-       |        |               |     | "     | "                | 9    | "                   | A    | set 50R     | using motor sl up                   | Fine                            |
| Fe Arc<br>None            | 4-        | in in  | out out       |     | NG12  | G12/.7B          | 9    | "                   | B    | Temp 40.5°F | Set 50R                             | center<br>Very Far blue         |
| Fe Arc<br>ND110           | 6-        |        |               |     | "     | "                | 9    | "                   | A    | Set 50R     | by hand<br>bad focus                | Fine                            |
| Fe Arc<br>None            | 2-        | normal | Stellar posns |     | "     | "                | 9    | "                   | B    | Temp 40°F   | Set 50R                             |                                 |
| Fe Arc<br>None            | 12-       |        |               |     | "     | "                | 9    | IIIaJ <sup>v</sup>  | A    | Set 50R     | by hand<br>1" broken off<br>bad     | Flex<br>wk low red              |
| "                         | 6-        |        |               |     | "     | "                | 9    | "                   | A    | 1" motor    | worst                               | bad Flex<br>wk up red           |
| "                         | 12-       |        |               |     | "     | "                | 9    | "                   | A    |             | both up?                            | Flex<br>wk blue                 |
| "                         | 11-       | in in  | out out       |     | "     | "                | 9    | "                   | B    | Temp 40°F   | Set 50R                             | center<br>v far blue            |
| "                         | 12-       |        |               |     | "     | "                | 9    | "                   | B    |             | Set 70R <sup>50R → 100R → 70R</sup> | Flex<br>wk up red<br>bad        |
| "                         | 13-       | in in  | out out       |     | "     | "                | 9    | "                   | B    | Temp 39.5°F | Set 70R                             | c too bl                        |
| "                         | 6-        |        |               |     | "     | "                | 9    | "                   | A    |             | "                                   | bad focus<br>? or flex?<br>Fine |
| "                         | 6-        |        |               |     | G8B   | G16/-25B         | 9    | "                   | A    |             | "                                   | Fine focus<br>Fine              |
| "                         | 6-        |        |               |     | "     | "                | 9    | "                   | A    |             | "                                   | bad or focus<br>Fine            |

329

Sat/Sun

Emulsion Batches:  
IIab-E 20077-30038

Date .. Apr 1/2 1978 .. Observers Rm 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<br>Type/Filter | Exp   |
|-----------|-------------------------------|----------------------|---------------------|-------------------------|-----------------------|-------------------|--------------------------|---------------------------|-------|
| 42485     | HD 186688 <sup>o</sup> SU Cug | 19 <sup>h</sup> 40.8 | +29° 01             | 03 45                   | 05 20                 | 1 59 E            | +29 14                   | Fe Arc<br>1.15            | 66-6  |
| 42485T    | Spot Cal'n for 42485-86       |                      |                     |                         | 15 min @ 15V          | D4<br>3900        | D3<br>4300<br>D2<br>4810 |                           |       |
| 42486     | HD 172167                     | 18 <sup>h</sup> 33.6 | +38 41              | 05 24                   | 05 26                 | 00 48 E           | +38 45                   | Fe Arc<br>ND 110          | 11-1  |
| 42486F1   | Focus Test                    |                      |                     |                         |                       | in in/out out     |                          | Fe Arc<br>none            | 11-1- |
| 42486F2   | " "                           |                      |                     |                         |                       | " "               |                          | Fe Arc<br>none            | 11-1- |

Spectr. Te  
Focus...  
Spectr. Te  
Exp. Mtr.

300/Nov/75  
40/10



Spectr. Temp.  $+33^{\circ}\text{F}$

Dome Temp./Hum.  $+26^{\circ}\text{F}/80\%$

Transparency Conditions *Clear by 03* *300*

Focus *100R*

*slightly gusty now*

Spectr. Temp.  $+31^{\circ}\text{F}$

Dome Temp./Hum.  $+24^{\circ}\text{F}/83\%$

Comparison  
Type/Filter Exp  
Fe Arc  
HD/NO  
Fe Arc  
HD/NO  
Fe Arc  
HD/NO

| Exp. Mtr.         | Seeing         | Ptg. Mag.    | Sp.         | Inst.           | Grating/Tilt   | Slit         | Emulsion     | P.H.              | Program           | Remarks                | Quality                         |
|-------------------|----------------|--------------|-------------|-----------------|----------------|--------------|--------------|-------------------|-------------------|------------------------|---------------------------------|
| <i>800/155A-6</i> | <i>6.8-7.7</i> | <i>F0 G1</i> | <i>NG12</i> | <i>NG12/.7B</i> | <i>18/.5</i>   | <i>IIa0E</i> | <i>A</i>     | <i>Ceph/Evans</i> |                   |                        | <i>slight v bed flex focus?</i> |
|                   |                |              |             |                 |                |              | <i>IIa0E</i> |                   |                   |                        |                                 |
| <i>40/10</i>      | <i>4</i>       | <i>0.0</i>   | <i>A0</i>   | <i>NG12</i>     | <i>NG1/.7B</i> | <i>9/5</i>   | <i>IIa0E</i> | <i>B</i>          | <i>std vel</i>    |                        |                                 |
|                   |                |              |             |                 |                | <i>9</i>     | <i>IIIa)</i> | <i>B</i>          | <i>Temp +31°F</i> | <i>Set 100R or OP</i>  | <i>cont. Far blue</i>           |
|                   |                |              |             |                 |                | <i>9</i>     | <i>II</i>    | <i>B</i>          | <i>" +31°F</i>    | <i>(Set 100R +25R)</i> | <i>cont sl blue</i>             |
|                   |                |              |             |                 | <i>IIa0</i>    | <i>20</i>    | <i>173</i>   |                   |                   |                        |                                 |

241

SON/MON

Date

Apr 2/3 73

Observers

Fgi-Tn/Tn

Emulsion Batches:

...098-02E 30097 16038

| 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>42487F</del> | <del>Focus Test Attempt</del> |              |                     |                         |                            |                                    | +57°        | Fe Arc<br>none | 50-7  |
| 42487             | HD 65626                      | 07 545       | +57° 33             | 19:25                   | 20:50                      | 1:15 W                             | +57 26      | Fe Arc<br>none | 44    |
| 42487T            | Spot Cal'n for                | 42487        |                     | 15 min @                |                            | 15V D3 7V D1 7V D2<br>4810 HK 5450 |             |                |       |
| 42488             | HD 106677                     | 12 11.0      | +73 07              | 20:55                   | 22:22                      | 1:16 E                             | +72 45      | Fe Arc<br>none | 4-4   |
| 42489             | HD 106677                     | 12 11.0      | +73 07              | 22:23                   | 00 40                      | 00 52 W                            | +72 45      | Fe Arc<br>NONE | 4-6 4 |
| 42489M            | Focus Test                    |              |                     |                         |                            | 0 011'                             | +40°        | Fe Arc<br>none | 60-70 |
| F2                | "                             |              |                     |                         |                            | 0 0                                | +40°        | "              | 15-20 |
| T1                | Single pos'n Flex Test        |              |                     |                         |                            | 0 0                                | +40°        | "              | 24-3  |
| T2                | " " " "                       |              |                     |                         |                            | 5 30 W                             | +40°        | "              | 20-30 |
| T3                | " " " "                       |              |                     |                         |                            | 0 0                                | +40°        | "              | 15-25 |
| F3                | Focus Test                    |              |                     |                         |                            | 0 0                                | +40°        | "              | 13-17 |
| T4                | Single pos'n Flex Test        |              |                     |                         |                            | 5 30 W                             | +40°        | "              | 15-25 |
| T5                | "                             |              |                     |                         |                            | 4 30 E                             | +40°        | "              | 15-25 |
| T6                | "                             |              |                     |                         |                            | 3 00 E                             | +40         | "              | 15-2  |
| T7*               | "                             |              |                     |                         |                            | 3 00 E                             | +10         | "              | 15-2  |
| T8*               | Reg Flex Test                 |              |                     |                         | 3 <sup>h</sup> E → 02 30 W | 2 30 W                             | +10         | "              | 6-12  |



16038

Spectr. Temp.  $31^{\circ}\text{F}$ Dome Temp./Hum.  $-2^{\circ}\text{C}/68\%$ Transparency Conditions *Some haze still in cloud*Focus *set 100R*Spectr. Temp.  $+29^{\circ}\text{F}$ Dome Temp./Hum.  $-5^{\circ}\text{C}/85\%$ 

342

| Comparison Type/Filter | Exp. Mtr.               | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion          | P.H. | Program                           | Remarks             | Quality              |
|------------------------|-------------------------|--------|-----------|-----|-------|--------------|------|-------------------|------|-----------------------------------|---------------------|----------------------|
|                        | <del>1 min to out</del> |        |           |     | G16R  | G16/7B       | 13   | <del>Ilia</del>   | B    | <del>Temp +31°F</del>             | <del>set 100R</del> | <del>Shattered</del> |
|                        | 700/109                 | 2"     | 7.1       | GO  | G16R  | G16/7B       | 13/5 | 098-02E           | A    | RSCV <sub>h</sub>                 |                     |                      |
|                        |                         |        |           |     |       |              |      | "                 |      |                                   |                     |                      |
|                        | 200/50                  | 3'     | 7.55      | KO  | G16R  | G16/7B       | 13/5 | 098-02E           | B    | RSCV <sub>h</sub> /F <sub>g</sub> |                     |                      |
|                        | 200/37                  | "      | 7.55      | KO  | G16R  | G16/7B       | 13/5 | 098-02E           | A    | RSCV <sub>h</sub> /F <sub>g</sub> | cloud!              |                      |
|                        | in in / out out         |        |           |     | "     | "            | 9    | [T <sub>8</sub> ] | B    | set 100R -                        | Temp +29°F          | center sl blue       |
|                        | "                       | "      |           |     | G8    | G16/25B      | 9    | "                 | B    | "                                 | "                   | center sl blue       |
|                        | normal & stellar posn   |        |           |     | "     | "            | 9    | "                 | A    | "                                 | "                   | OK                   |
|                        | "                       | "      |           |     | "     | "            | 9    | "                 | A    | "                                 | "                   | OK                   |
|                        | "                       | "      |           |     | NG12  | G12/7B       | 9    | "                 | A    | "                                 | "                   | fine, fine (sl red)  |
|                        | in in / out out         |        |           |     | NG12  | G12/7B       | 9    | "                 | B    | "                                 | Temp +29°F          | center very blue     |
|                        | normal & stellar posn   |        |           |     | "     | "            | 9    | "                 | A    | "                                 | "                   | center sl blue       |
|                        | "                       | "      |           |     | "     | "            | 9    | "                 | A    | "                                 | "                   | Fine                 |
|                        | "                       | "      |           |     | "     | "            | 9    | "                 | A    | "                                 | Temp +29°F          | Fine                 |
|                        | "                       | "      |           |     | "     | "            | 9    | "                 | A    | "                                 | "                   | Fine                 |
|                        | "                       | "      |           |     | "     | "            | 9    | "                 | B    | "                                 | "                   | Fine                 |
|                        |                         |        |           |     |       |              |      |                   |      |                                   |                     | Fine low red         |

\*T8 followed by T9, a single posn  
 " Test at 230W & +10

44<sup>3</sup>#1

Wed - Thurs

Date Apr. 5-6, 1978..... Observers K.K. Tu / R.M. Tu.....

Emulsion Batches:

III.F. 23117-09038

IIc.D.F. 20077-30038

| 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.     |
|-----------|--------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|---------------------|---------------------------|----------|
| 42490     | HD 47105                 | 6 31.9       | +16 29              | 19 24                   | 19 46                 | 01 48 W           | +16 25              | Fe Arc<br>UV+H            | 15-15-1  |
| 42490T    | Spot Cal'n for 42490-98. |              |                     |                         | 15 min @              | 15V D4<br>4810    | 7V D2<br>H $\alpha$ | 7V D3<br>5450             |          |
| 42491     | HD 47105                 | 6 31.9       | +16 29              | 19 48                   | 20 03                 | 02 05 W           | +16 25              | Fe Arc<br>UV only         | 15-15-1  |
| 42492     | HD 61421                 | 7 34.1       | + 5 29              | 20 06                   | 20 12                 | 01 12 W           | +5 17               | "                         | 15-15-13 |
| 42493     | "                        | "            | "                   | 20 14                   | 20 20                 | 01 20 W           | "                   | "                         | 15-15-15 |
| 42494     | HD 47105                 | 6 31.9       | +16 29              | 20 23                   | 20 34                 | 02 35 W           | +16 25              | "                         | 15-15-15 |
| 42495     | "                        | "            | "                   | 20 36                   | 20 50                 | 2 52 W            | "                   | "                         | 15-15-1  |
| 42496     | "                        | "            | "                   | 20 52                   | 21 08                 | 3 10 W            | "                   | "                         | 15-15-15 |
| 42497     | "                        | "            | "                   | 21 09                   | 21 23                 | 3 25 W            | "                   | "                         | 15-15-15 |
| 42498     | HD 61421                 | 7 34.1       | + 5 29              | 21 27                   | 21 53                 | 2 33 W            | +5 17               | "                         | 15-15-1  |
| 42498F    | Focus Test               |              |                     |                         |                       | 0 0               | +15 <sup>0</sup>    | "                         | 50-50    |
| 42499     | HD 122742                | 13 58.6      | + 11 16             | 21 43                   | 23 12                 | 02 10 E           | +                   | Fe Arc<br>ND 1:10         | 8-8-8    |
| 42499T    | Spot Cal'n for 42499     |              |                     |                         | 15 min @ 15V          | D4<br>2900        | D3<br>4300          | D2<br>4810                |          |
| 42500     | HD 131511                | 14 48.9      | +19 33              | 23 18                   | 00 03                 | 2 10 E            | +19 13              | Fe Arc<br>ND 1:10         | 8-8-8    |
| 42501     | HD 84441                 | 04 44.5      | +23 53              | 00 15                   | 00 28                 | 3 24 W            | +23 53              | Fe Arc<br>ND 1:10         | 15-18    |



Spectr. Temp.  $+41^{\circ}\text{F}$ .....Dome Temp./Hum.  $+38^{\circ}\text{F}/90\%$ .....Transparency Conditions *Fine*..... *3434*Focus *120R*.....

Spectr. Temp. ....

Dome Temp./Hum. ....

| Comparison Type/Filter/Exp | Exp. Mtr. | Seeing | Ptg. Mag. | Sp.  | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program              | Remarks                                | Quality            |
|----------------------------|-----------|--------|-----------|------|-------|--------------|------|----------|------|----------------------|--|--------------------|
| Fe Arc 545-7003 5450       | 40/?      | 2-3'   | 1.9       | A0IV | G16R  | G16/.7B      | 9/5  | IIIaFe   | A    | Asm Sp KK            | UV filter before slit<br>5450 slit whk | ↑                  |
| Fe Arc 4000                | 40/70     | 2-3    | 1.9       | A0IV | G16R  | G16/.7B      | 9/5  | IIIaFe   | B    | "                    | "                                      |                    |
| "                          | 40/50     | 2-3    | 0.7       | F5IV | "     | "            | 9/5  | "        | A    | "                    | "                                      |                    |
| "                          | 40/50     | "      | "         | "    | "     | "            | "    | "        | B    | "                    | "                                      |                    |
| "                          | 40/70     | "      | 1.9       | A0IV | "     | "            | "    | "        | A    | "                    | "                                      |                    |
| "                          | 40/70     | "      | "         | "    | "     | "            | "    | "        | B    | "                    | "                                      |                    |
| "                          | 40/70     | 3-4    | "         | "    | "     | "            | "    | "        | A    | "                    | "                                      |                    |
| "                          | 40/70     | "      | "         | "    | "     | "            | "    | "        | B    | "                    | "                                      |                    |
| "                          | 40/50     | 3-4    | 0.7       | F5IV | "     | "            | "    | "        | A    | "                    | "                                      |                    |
| "                          | 40/50     | "      | "         | "    | "     | "            | 9    | "        | B    | Temp + 40°F set 120R | "                                      | center vs. to rest |
| Fe Arc 100/100             | 100/100   | 3      | 6.8       | G8V  | NG12  | NG12/.7B     | 13/5 | IIaO-e   | A    | Asm Sp KK            | some cloud                             | ↑                  |
| Fe Arc 100/100             | 100/70    | 2-3    | 6.84      | dK1  | NE12  | G12/.7B      | 13/3 | IIaO-e   | B    | Asm Sp KK            | "                                      | fine               |
| Fe Arc 100/100             | 100/24    | "      | 3.1       | 307T | G8    | G16/-.25     | 9/5  | IIaOE    | A    | Ceph/Pg              | "                                      | fine               |

↑ evidence fine  
focus v. slightly off?





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

Transparency Conditions *Fine vs/haze 246*

Focus *120R*

Spectr. Temp. *+35°F* ..... Dome Temp./Hum. *73°F/98%*

| Comparison Type/Filter Exp | Exp. Mtr.              | Seeing | Ptg. Mag.                  | Sp.   | Inst.  | Grating/Tilt | Slit | Emulsion | P.H. | Program                    | Remarks  | Quality              |
|----------------------------|------------------------|--------|----------------------------|-------|--------|--------------|------|----------|------|----------------------------|--|----------------------|
| Fe Arc 8-2-7               | 00/74                  |        | <i>m.v. = 5.92</i><br>5.92 | dG12  | NG12   | NG12/70      | 13/3 | IIaOE    | B    | Asm Sp Kk                  |  | Fine                 |
| Fe Arc                     | 00/110                 |        | 5.82                       | K2Ia  | NG12   | "            | 13/5 | IIaOE    | A    | Ceph/Fe                    |  | Fine                 |
| Fe Arc                     | 40/12                  | 2"     | 3.93                       | K2III | "      | "            | 13/5 | IIaOE    | B    | Std Vel                    |  |                      |
| Fe Arc none 3-3            | <i>in in / out out</i> |        |                            |       |        |              | 13   | "        | B    | <i>broken 1pc</i>          | <i>saved but throw out if too much trouble</i> | <i>vv sl red</i>     |
| Fe Arc 2-11-6              | 00/237                 | 2.3"   | 6.8-7.7                    | F0 G  | "      | "            | 13/5 | IIaOE    | A    | Ceph/Evans                 |  | <i>Flex 45 vs/ok</i> |
| " 11-                      | 40/14                  |        | 3.93                       | K2II  | "      | "            | 13/5 | IIaOE    | B    | Std Vel                    |  | Fine                 |
| " 4-2                      | 00/70                  | 2"     | 6.18                       | A34   | "      | "            | 13/5 | IIaOE    | A    | Sp Bin/Ben                 |  | <i>sguiding fine</i> |
| Fe Arc none 4-             | <i>in in / out out</i> |        |                            |       | "      | "            | 9    | "        | B    | <i>120R Temp +35°F</i>     |  | <i>sl to blue</i>    |
| " "                        | <i>"</i>               |        |                            |       | "      | "            | 9    | "        | B    | <i>set 120R Temp +35°F</i> |  | <i>sl to blue</i>    |
|                            |                        |        |                            |       | A20    | 5 1/2 D19    | 68°  |          |      |                            |  |                      |
|                            |                        |        |                            |       | III JF | 5m D17       | 68°  |          |      |                            |  |                      |

347

766-4225

Emulsion Batches:

III a J-E 01126-05048

D a O-E 23087 06043

FRI-SAT

Date Apr 7-8 1978

Observers Ly - 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.     |
| 42508     | HD 37468        | 05 33.7         | -2° 39'             | 19:29                   | 19 47                 | 2 55W             | -2 33       | Fe Arc<br>NO FILTER | 4-4-78   |
| 42509     | HD 72208        | 08 26.5         | +10 09              | 19:52                   | 21:01                 | 1 16W             | +09 56      | Fe Arc<br>ND=1.10   | 7-8-78   |
| 42510     | HD 72359        | 08 27.2         | +10 24              | 21:04                   | 22 00                 | 2 13W             | +10 12      | "                   | 8-8-78   |
| 42510T    | Spot Cal'n for  | 42509-10, 12-13 |                     | 15 min                  | @ 15V                 | 3900              | 4300        | +8/10               |          |
| 42509T    | Spot Cal'n for  | 42508, 11, 14   |                     | 15 min                  | @ 15V                 | 3900              | 4300        | 48/10               |          |
| 42511     | HD 47105        | 06 31.9         | +16 29              | 22 05                   | 22 14                 | 04 23W            | +16 30      | Fe Arc<br>None      | 5-5-78   |
| 42512     | HD 62044        | 07 37.0         | +29 07              | 22 22                   | 23 51                 | 04 55W            | +29 01      | Fe Arc<br>ND=1.1    | 12-20-78 |
| 42513     | HD 84441        | 09 44.5         | +23 53              | 23 54                   | 00 14                 | 03 15W            | +23 58      | "                   | 20-20-78 |
| 42514     | HD 91316        | 10 27.5         | +09 49              | 00 23                   | 00 38                 | 02 53W            | +09 27      | Fe Arc<br>No Filter | 4-7-78   |
| 42514T    | Strip Cal'n for | 42508, 11, 14   |                     |                         |                       | 180sec            |             |                     |          |
| 42515     | HD 91316        | 10 27.5         | +09 49              | 00 40                   | 00 54                 | 03 08W            | +09 27      | Fe Arc<br>No Filter | 4-9-78   |
| 42515T    | Strip Cal'n for | 42509-10, 12-13 |                     |                         |                       | 90sec             |             |                     |          |
| 42515F    | Focus Test      |                 |                     |                         |                       | 00                | +11°        | Fe Arc<br>no filter | 11-11-78 |



05048  
06043

Spectr. Temp.  $42^{\circ}\text{F}$  Dome Temp./Hum.  $38^{\circ}\text{F} / 70\% \text{RA}$  Transparency Conditions *currus around horizon* 348  
 Focus  $130\text{R}$   
 Spectr. Temp.  $37^{\circ}\text{F}$  Dome Temp./Hum.  $31^{\circ}\text{F} / 87\%$  *\* Junk on slit*  
*no Flex*

| Comparison<br>Type/Filter<br>Exp. | Exp. Mtr.            | Seeing | Ptg.<br>Mag. | Sp.   | Inst. | Grating/<br>Tilt | Slit  | Emulsion                 | P.H. | Program      | Remarks       | Quality |
|-----------------------------------|----------------------|--------|--------------|-------|-------|------------------|-------|--------------------------|------|--------------|---------------|---------|
| Fe Acc<br>No Filter               | 200/104              | 3-4    | 3.51         | 09.5V | G12   | NG12/.7          | 13/.5 | IIIaδ-e                  | A    | Sp Bin - Bln |               | Fine*   |
| Fe Acc<br>ND=110                  | 200/100              | "      | 6.53         | ADP   | "     | "                | 13/.5 | IIaδ-e                   | B    | Sp Bin - Ly  |               | Fine*   |
| "                                 | 400/101              | 3      | 6.23         | AD    | "     | "                | "     | "                        | A    | Sp Bin - Ly  |               | Fine*   |
|                                   |                      |        |              |       |       |                  |       | "                        |      |              |               |         |
|                                   | 3900 should have had |        |              |       |       | 152V             |       | IIaδ-e                   |      |              |               |         |
| Fe Acc<br>ND=1                    | 40/36                |        | 1.9          | ADIV  | G12   | NG12/.7B         | 9/1.5 | IIIaδ-E                  | B    | Arm Sp - KK  | gusty.        |         |
| Fe Acc<br>ND=11                   | 200/140              | 2-3    | 5.4          | KIII  | G8    | G16R/.25         | "     | IIaδ-e                   | A    | Hok Bin - Ly | "             |         |
| "                                 | 40/29                | 3      | 3.1          | GOpII | "     | "                | "     | IIaδ-e                   | B    | Ceph - Py    |               | Fine*   |
| Fe Acc<br>No Filter               | 200/100              |        | 3.7          | BIIb  | G12   | NG12/.7B         | 13/.5 | IIIaJ-e                  | A    | IIIaJ* - Ly  |               | Fine*   |
|                                   |                      |        |              |       |       |                  |       | "                        |      |              |               |         |
| Fe Acc<br>No Filter               | 200/42               | 2      | 3.7          | BIIb  | G12   | NG12/.7B         | 13/.5 | IIIaSe                   | B    | IIIaJ* - Ly  | cloud         | wk*     |
| Fe Acc<br>No Filter               | in in lost out       |        |              |       | G12   | NG12/.7B         | 9     | 5 <sup>set</sup><br>130R | B    | IIIaJ old    | Temp +36-37°F |         |
|                                   |                      |        |              |       | II20  | 5 1/2"           |       |                          | 20   | 169          |               |         |
|                                   |                      |        |              |       | IIIJ  | 5 1/2"           |       |                          | 15   | 245          |               |         |

249

Sat-Sun

Date Apr 8-9 / 78... Observers Tn-Tn-Tn etc...

Emulsion Batches:

D.O.-E 01126-05048

D.O.-E 23087-06043

| 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.  |
|-----------|------------------------------|------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| 42516F    | Focus Test                   |                  |                     |                         |                       | 1 30W             | +20°        | Fe Arc<br>none            | 11-11 |
| 42516     | <sup>γ Gem</sup> HD 47105    | 06 31.9          | +16 29              | 19 23                   | 19 32                 | 1 44W             |             | Fe Arc<br>none            | 5-5-5 |
| 42517     | <sup>α Ori AB</sup> HD 37468 | 05 33.7          | -2 39               | 19 35                   | 19 54                 | 3 06W             |             | "                         | 4-5-4 |
| 42517T    | Spot Calc for                | 42516-17, 22.    |                     | 15 min @                | 3900                  | 4300              | 4810        |                           |       |
| 42518     | <sup>HR Aur</sup> HD 34364   | 05 11.8          | +33 39              | 19 58                   | 21 11                 | 4 44W             | +33 55      | Fe Arc<br>ND 11           | 8-7-7 |
| 42518T    | Spot Calc for                | 42518-21, 23-27. |                     | 15 min @                | 3900                  | 4300              | 4810        |                           |       |
| 42519     | HD 72208                     | 08 26.5          | +10 09              | 21 16                   | 22 37                 | 2 56W             | +10 02      | Fe Arc<br>ND 11           | 8-8-8 |
| 42520     | HD 72359                     | 08 27.2          | +10 24              | 22 39                   | 23 51                 | 4 11W             | +10 18      | "                         | 8-8-8 |
| 42521     | HD 112028                    | 12 48.3          | +83 58              | 00 01                   | 00 30                 | 0 30W             | +83 40      | "                         | 8-8-8 |
| 42522     | HD 139892                    | 15 35.6          | +36 58              | 00 41                   | 01 24                 | 1 23E             | +36 36      | Fe Arc<br>none            | 5-4-4 |
| 42523     | <sup>B Oph</sup> HD 161096   | 17 38.5          | +4 37               | 01 36                   | 01 46                 | 3 05E             | +4 28       | Fe Arc<br>ND 110          | 11-12 |
| 42524     | <sup>S Lyr</sup> HD 175426   | 18 50.2          | +36 51              | 01 52                   | 02 22                 | 3 39E             | +36 51      | "                         | 8-8-8 |
| 42525     | <sup>89 Her</sup> HD 163506  | 17 51.4          | +26 04              | 02 26                   | 02 56                 | 2 07E             | +25 57      | "                         | 8-8-8 |
| 42526     | HD 186688                    | 19 40.8          | +29 01              | 02 59                   | 05 05                 | 1 47E             | +29 05      | "                         | 8-8-8 |
| 42526T    | Strip Calc for               | all IIaDs        |                     |                         |                       | 90sec             |             |                           |       |
| 42527     | HD 161096                    | 17 38.5          | +4 37               | 05 09                   | 05 15                 | 0 24W             | +4 28       | Fe Arc<br>ND 110          | 12-12 |



Spectr. Temp.  $+33^{\circ}\text{F}$  ..... Dome Temp./Hum.  $+29^{\circ}\text{F}/70\%$

Transparency Conditions *PHOTOMETRIC* <sup>250</sup> but gusty...

Focus ... *140R* (130-180  $\rightarrow$  140)

\* Junk on slit  $5\frac{1}{2}'' \Delta 30$  20 175

Spectr. Temp.  $+30^{\circ}\text{F}$  ..... Dome Temp./Hum.  $24^{\circ}\text{F}/72\%$

NO FLEX  $5\frac{1}{2}'' \Delta 35$  15 245

| Exp. Mtr.             | Seeing | Ptg. Mag. | Sp.    | Inst. | Grating/Tilt | Slit | Emulsion  | P.H. | Program       | Remarks                           | Quality           |
|-----------------------|--------|-----------|--------|-------|--------------|------|-----------|------|---------------|-----------------------------------|-------------------|
| <i>1 in / out out</i> |        |           |        | G12   | NG12/7B      | 9    | IIIaJ-Old | B    | Set 140R Temp | 33-34 $^{\circ}\text{F}$          | center v sl blue  |
| 70/36                 | 2"     | 1.9       | A0 IV  | G12   | NG12/7B      | 9/5  | IIIaJ-E   | A    | Asm Sp KK     |                                   |                   |
| 200/100               | 3-5"   | 3.5       | 085V   | "     | "            | 13/5 | "         | B    | SB Blu        |                                   | Fine *            |
|                       |        |           |        |       |              |      | "         |      |               |                                   |                   |
| 200/50                | 3-3'   | 5.8-6.5   | Ap     | G12   | NG12/7B      | 13/5 | IIu0-E    | A    | Ecl Bin-Blu   |                                   | F                 |
|                       |        |           |        |       |              |      | "         |      |               |                                   |                   |
| 700/95                | 2-4"   | 6.53      | A0p    | G12   | NG12/7B      | 13/5 | "         | B    | SB Ly         | getting too gusty here            | Fine $\checkmark$ |
| 700/88                | 3"     | 6.23      | A0     | "     | "            | "    | "         | A    | "             | Less windy                        | 99% Ly Fine       |
| 700/50                | 2-3    | 5.2       | shell  | "     | "            | "    | "         | B    | Shell-Blu     | South one                         |                   |
| 700/120               | 2"     | 4.95      | B7E    | "     | "            | "    | IIIaJ-E   | A    | SB-Blu/Ly     | Reversed - SE comp                |                   |
| 700/14                | 3"     | 3.93      | K2 III | "     | "            | "    | IIu0-E    | B    | std vel       | "                                 | Fine $\checkmark$ |
| 700/50                | 2"     | 5.2       | B3     | "     | "            | "    | "         | A    | SB2-Ly        | "                                 |                   |
| 700/50                | 3"     | 5.8       | F2 Ia  | "     | "            | "    | "         | B    | Ceph-Fe       | "                                 | 99% Fine          |
| 700/95                | 2-3    | 6.8-7.7*  | FU-G1  | "     | "            | "    | "         | A    | Ceph-Rm       | * looks Red Front some thin cloud | Fine              |
|                       |        |           |        |       |              |      | "         |      |               |                                   |                   |
| 700/12                | 3      | 3.93      | K2 III | G12   | NG12/7B      | 13/5 | "         | B    | std vel       | REV 1 inch broken                 |                   |





Spectr. Temp.  $46^{\circ}\text{F}$ Dome Temp./Hum.  $7^{\circ}\text{C}$  /  $37\%$ Transparency Conditions *intermittant clouds* <sup>352</sup>Focus  $130\text{R}$ Spectr. Temp.  $48^{\circ}\text{F}$ Dome Temp./Hum.  $4^{\circ}\text{C}$  /  $90\%$ 

| Comparison<br>Type/Filter<br>Exp. | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.  | Inst. | Grating/<br>Tilt | Slit | Emulsion | P.H. | Program   | Remarks       | Quality              |
|-----------------------------------|-----------|--------|--------------|------|-------|------------------|------|----------|------|-----------|---------------|----------------------|
| Fe Arc<br>10 F2II<br>4-4          | 100/102   |        | 5.3          | F2II | G16   | G16R/.78         | 13/5 | 098-02-e | A    | RSCVn/Fgi |               | slt. flex.           |
| Fe Arc<br>10 F2II<br>4-4          | 100/100   |        | 5.3          | F2II | G16   | G16R/.78         | 13/5 | 098-02-e | B    | RSCVn/Fgi | clouds        | slt. flex.           |
|                                   |           |        |              |      |       |                  |      | 098-02-e |      |           |               |                      |
| Fe Arc<br>10 F2II<br>4-4          | 100/101   |        | V=5.76       | dF6  | G16   | G16R/.78         | 13/5 | 098-02-e | A    | RSCVn/Fgi |               | No flex.             |
| Fe Arc<br>10 F2II<br>4-4          | 100/100   |        | V=5.76       | dF6  | G16   | G16R/.78         | 13/5 | 098-02-e | B    | RSCVn/Fgi |               | flexure              |
| Fe Arc<br>10 F2II<br>4-4          | 100/102   |        | V=5.76       | dF6  | G16   | G16R/.78         | 13/5 | 098-02-e | A    | RSCVn/Fgi |               | slt. flexure<br>fine |
| Fe Arc<br>10 F2II<br>4-4          | 100/80    |        | 8.3          | F4   | G16   | G16R/.78         | 18/5 | 098-02-e | B    | RSCVn/Fgi |               | slt. flexure         |
| 8-4                               |           |        |              |      |       |                  | 9    |          | B    | 48°F 130R | center to red |                      |
|                                   |           |        |              |      |       |                  |      |          |      |           |               |                      |
|                                   |           |        |              |      |       |                  |      |          |      |           |               |                      |
|                                   |           |        |              |      |       |                  |      |          |      |           |               |                      |
|                                   |           |        |              |      |       |                  |      |          |      |           |               |                      |
|                                   |           |        |              |      |       |                  |      |          |      |           |               |                      |
|                                   |           |        |              |      |       |                  |      |          |      |           |               |                      |
|                                   |           |        |              |      |       |                  |      |          |      |           |               |                      |
|                                   |           |        |              |      |       |                  |      |          |      |           |               |                      |
|                                   |           |        |              |      |       |                  |      |          |      |           |               |                      |
|                                   |           |        |              |      |       |                  |      |          |      |           |               |                      |
|                                   |           |        |              |      |       |                  |      |          |      |           |               |                      |
|                                   |           |        |              |      |       |                  |      |          |      |           |               |                      |
|                                   |           |        |              |      |       |                  |      |          |      |           |               |                      |

4" D1) 68°F

253

FRI/SAT

Date APRIL 14/15 1978 Observers Ly. - R.

Emulsion Batches:

..... 20077 09048 .....

| 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.     |
| 42534     | HD 62044                    | 7 37.0                           | +29 07'             | 22:03                   | 23:16                 | 04:49W              | +28 57      | Fe ARC<br>ND=1.1 | 20-20.2  |
| 42535     | HD 84441                    | 09 <sup>m</sup> 40. <sup>m</sup> | +24° 14'            | 23:21                   | 23:38                 | 03 09W              | +23 53      | Fe ARC<br>ND=1.1 | 20-20.20 |
| 42535T1   | spot cal for plates 42534-  |                                  |                     |                         | 15 min @ 15 Volts     | D4<br>3900          | D3<br>4300  | D2<br>4810       |          |
| 42535T2   | strip cal for plates 42534- |                                  |                     |                         | 90 sec                |                     |             |                  |          |
| 42536     | HD 88021/2                  | 10 03.8                          | +20 49'             | 23:50                   | 01:47                 | 04 54W              | +20 27      | Fe ARC<br>ND=1.1 | 8-8-8    |
| 42537     | HD 131511                   | 14 <sup>m</sup> 48 52            | +19° 33'            | 01:52                   | 02:56                 | 01 <sup>m</sup> 18W | +19° 15'    | Fe ARC<br>ND=1.1 | 8-8-8    |
| 42538     | "                           | "                                | "                   | 03:00                   | 03:21                 | 01 44W              | "           | Fe ARC<br>ND=1.1 | 8-16     |
| 42538F1   | focus                       |                                  | out of focus        |                         |                       |                     |             | no<br>FILTER     | 55       |



Spectr. Temp.  $40^{\circ}\text{F}$ Dome Temp./Hum.  $+10^{\circ}\text{C}$  82%Transparency Conditions  $354$   
cloud at first then clear  
night scanned slow  
intermittent cloud.

Focus ..... 90R

Spectr. Temp. ....

Dome Temp./Hum. ....

| Comparison<br>pe/Filter Exp | Exp. Mtr. | Seeing | Ptg.<br>Mag. | Sp.     | Inst. | Grating/<br>Tilt | Slit | Emulsion             | P.H. | Program                             | Remarks                             | Quality  |
|-----------------------------|-----------|--------|--------------|---------|-------|------------------|------|----------------------|------|-------------------------------------|-------------------------------------|----------|
|                             | /100      | 3      | 6.4          | K11H    | G8    | G16/-25B         | 9/3  | II <sub>100</sub> -E | A    | H <sub>2</sub> K <sub>2</sub> Bi-Ly |                                     | ✓ sl str |
|                             | 40/28     | 3      | 3.1          | G0A(II) | G8    | G16/-25B         | 9/5  | II <sub>100</sub> -E | B    | Capitain/Evans                      |                                     | ✓ sl str |
|                             |           |        |              |         |       |                  |      | II <sub>100</sub> -E |      |                                     |                                     |          |
|                             |           |        |              |         |       |                  |      | II <sub>100</sub> -E |      |                                     |                                     |          |
|                             | 200/200   |        | 7.2          | G5+A2   | G12   | NC12/7B          | 13/5 | II <sub>100</sub> -E | A    | VB - Bln                            | tbl limit                           | fine     |
|                             | 100/111   |        | 6.84         | dk1     | G-12  | '                | '    | '                    | B    | Asm Sp - KK                         | first to uncap plate<br>maybe blank | blank    |
|                             | 100/16    |        | '            | '       | '     | '                | '    | '                    | A    | '                                   | intermittent cloud.                 | ok       |
|                             |           |        |              |         | 90R   | 340F             |      | '                    | B    |                                     | cloud solid.                        |          |
|                             |           |        |              |         |       |                  |      |                      |      |                                     |                                     | on       |
|                             |           |        |              |         |       | 5 1/2" D17       | 68F  |                      |      |                                     |                                     |          |





.....  
.....  
.....  
Comparison  
Type/Filter Ex

357

Processing used, this volume:

|                            |                 | Time<br>as recorded |
|----------------------------|-----------------|---------------------|
| Dev                        | D 19            |                     |
| Stop                       | 10% Acetic Acid | 1 <sup>m</sup>      |
| Fix 1                      | Kodak Ektaflo   | 5-10 <sup>m</sup>   |
| Fix 2                      |                 | 5 <sup>m</sup>      |
| Rinse                      |                 | 1 <sup>m</sup>      |
| Permo wash                 |                 | 1 <sup>m</sup>      |
| Wash                       |                 | 15 <sup>m</sup>     |
| Photo's in distilled water |                 | few seconds         |

All with N<sub>2</sub> burst agitationevery 10<sup>s</sup> in dev, stop, & hypo clearevery 30<sup>s</sup> thru riseStrip calibrator dismantled & bare wires replaced 17 Feb 78

'78 Feb 17-23 Stainless steel arc (by error) instead of Fe

SECONDARY REALUMINIZED

MAR 20, 1978



176078

fe

BLAZE ARROW POINTS SOUTH!

356