



PARTIAL Index

2

Flexure Tests 1990 Nov 7 CASS, 1990 Nov 12/13 CASS, 1991 Feb 11/12 Eckelke,

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 |
|-----------|--------|-----------|-----|-------|--------------|------|----------|------|---------|---------|---------|
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David Dunlap Observatory
74" Logbook
Vol. 66
Plate Nos. 492 - 832
Sept. 1990 - March 1991

5

Thurs - Fri

Date .1990. Sep. 27/28 Observers .Fds.-Tn.....

Emulsion Batches:

.....

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison | | Exp. Mr. | Seeing |
|-----------|----------------|------------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------|------|----------|----------|
| | | | | | | | | Type/Filter | Exp. | | |
| | Prompted Fleet | at posn of Vega | | | | | | JUNGSTEN | 30s | | |
| | Comp | | | 18 46 15 | | | | Th-Ar | 20s | | |
| | vega | | | | | | | | | | |
| | HD 172167 | 18 33 33 | 38 41 | 18 48 33 | 18 50 57 | 0 22 W | | | | | 20/200 |
| | Comp | | | 18 51 37 | | | | " | 20 | | |
| | Comp | | | 18 56 31 | | | | " | 20 | | |
| | 6lac | | | | | | | | | | |
| | HD 213420 | 22 26.2 | +42 37 | 19 00 13 | 19 53 25 | 2 28 E | | | | | 400 40" |
| | Comp | | | 19 54 29 | | | | Th-Ar | 20 | | |
| | 6lac | | | | | | | | | | |
| | HD 213420 | 22 26.2 | +42 37 | 19 55 46 | 20 52 28 | 1 29 E | | | | | 400 |
| | Comp | | | 20 53 16 | | | | Th-Ar | 20 | | |
| | 6lac | | | | | | | | | | |
| | HD 213420 | 22 26.2 | +42 37 | 20 54 20 | 21 52 02 | 0 29 E | | | | | 2350 40" |
| | Comp | | | 21 52 34 | | | | Th-Ar | 20s | | |
| | 6lac | | | | | | | | | | |
| | HD 213420 | 22 26.2 | +42 37 | 21 53 35 | 22 23 32 | 0 03 E | | | | | 2353 40" |
| | Comp | | | 22 24 42 | | | | Th-Ar | 20 | | |
| | 4 flats @ 25 | 831, 817, 810, 804 | | | | | | | | | |
| | 4 flats @ 90 | 2831, 2812, 2787, 2754 | | | | | | | | | |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Spectr. Temp. Dome Temp./Hum. $+16^{\circ}\text{C}$... 86% Transparency Conditions *S/Hazy...cloudy...6*

Focus

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

Top up @ 18 30 T = -0.2A3

| Exp. Mtr. | Seeing | Mag. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|------|--------------------|--------------|-------------|----------|-------|---------|------------------------------|---------|
| 30s | | | | Echelle Reticon | 17.91 | 105 .259 | 4945 | 45678 | | Focus = 2186 per Best Cass | 1140 |
| 20s | | | | | | | | | | | 8631 |
| 20,000 | | 0.04 | A0V | | | | | | | | 2883 |
| 20 | | | | | | | | | | | 8579 |
| 20 | | | | | | | | | | | 8601 |
| 4000 | $<2''$ | 4.5A | B2IV | | | | | | | | 908 |
| 20 | | | | | | | | | | | 7824 |
| 4000 | | 4.51 | B2IV | | | | | | | | 890 |
| 20 | | | | | | | | | | | 7680 |
| 5390 | $<2''$ | 4.51 | B2IV | | | | | | | Power T = -0.068 | 1143 |
| 20s | | | | | | | | | | | 7377 |
| 2353 | $<2''$ | 4.51 | B2IV | | | | | | | cloudy | 491 |
| 20 | | | | | | | | | | | 7604 |
| | | | | | | | | | | T = -0.030 Top up @ 22:50 | |

1 pg #1

Sun - Mon

Date 1990 Sep 30 / 01 Observers Tn / MKI

Emulsion Batches:

.....

 Telescope

| 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. | |
|--------------|--------------------------|--------------|---------------------|-------------------------|-----------------------|--|----------------|---------------------------|---------------|-----|
| FIT 00492 | Flut while opening | | | 18 45 29 | 19 33 | focus run → 50 sec Revt Cass → Cass | | TUNG A=1/4 | | |
| 493 | Comp | | | 19 35 48 | 19 39 36 | | f18 stop IN | FEAR A=1/4 | ~ 200s | |
| 494 | HD 182917 | 19 21.9 | +5002 | 19 42 | 20 42 | 01 39 W | | | | |
| 495 | Comp | | | | | | f18 stop IN | FEAR H=1/4 | ~ 200s | |
| 496 | PU VUL | 20 16.8 | +21 15 | 20 52 31 | 22 02 | 02 21 W | +21 36 | | | |
| 497 | Comp | | | 22 07 38 | | | f18 stop | FEAR A=1/4 | 200 | |
| 498 | B M CASS | 00 48.6 | +63 33 | 22 19 | 23 38 | 00 55 E | +64 04 | | | |
| 499 | Comp | | | 23 49 | | | f18 stop | FEAR A=1/4 | ~ 200s | |
| 500 | HD 3765 | 00 35.3 | +39 40 | 23 54 | 00 15 | 00 02 E | | | | |
| 501 | Comp | | | 00 18 | | | f18 stop | FEAR A=1/4 | 220 | |
| 286 Tn | HD 3765 | 00 35.3 | +39 40 | 00 17 | | 0 0 | 4 frames | 'N' make | Int x4 | |
| 502 | HD 182917 | 19 21.9 | +50 02 | 00 30 | 01 11 | 06 08 W | | | | |
| 503 | Comp | | | | | | f18 stop | FEAR A=1/4 | 300 | |
| 504 | HD 14386 ^{mirr} | 02 143 | -3 26 | 01 26 39 | 01 58 | 0 0 | | | | |
| 505 | Comp | | | 01 59 | 02 04 40 | | | f18 stop | FEAR A=1/4 | 300 |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

8/300

8/70

10/200

10/75

10/200

7/70

10/200

8/60

30/1300

10/65

30/39

20/150

8/50

50/2500

8/70

9 pg #2 Sun - Mon

Date 1990 Sep 30 / Oct 1 Observers J.A. M.Ki.....

Emulsion Batches:

.....

| 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. |
|---|-------------|--------------|---------------------|-------------------------|-----------------------|-------------------|--------------|---------------------------|------|
| 506 | MWC 560 | 07 21.0 | -07 32 | 02 30 | 03 13 | 3 49E | | | |
| 507 | " | " | " | 03 14 | 04 20 | 2 42E | -7 41 | | |
| Field Drawn in Field Book. It matches former Field drawn. | | | | | | | | | |
| 508 | MWC 560 | 07 21.0 | -07 32 | 04 20 | 05 38 | 1 24 E | | | |
| 509 | Comp | | | 2 05 40 | | | F18 NO ND | Feat A=1/2 | 200 |
| 510 | Flat at end | | | 06:17:50 | 08:17 | | f18 NP 20 | TUNG A=1/4 | |

Spectr. Temp.

Focus.....

Spectr. Temp.

Exp. Nr. Seeing

8 / 25 V poor

8 / 110

Too bad about

8 / 130 poor

15 / 190

40 / 1900

Spectr. Temp. Dome Temp./Hum. $+6^{\circ}\text{C}$ 87% Transparency Conditions *5.1 Hazy* 10

Focus Dome Temp./Hum. $+5.5^{\circ}\text{C}$ 87% *H=87%*
SI foggy

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|---|------------------|-----------|-----|--------------|--------------|------|-------------------|------|---------|---------------------------------------|------------------------------------|
| A B | | | | | | | | | | | |
| 8 / 25 | <i>v</i> poor | Faint | | Fiber PTS | 1800/50.8 | BS | 4820 \AA | CHB | | <i>ND 0.6 in</i> <i>By mistake</i> | <i>cnts only ~ 20 sec at start</i> |
| 8 / 110 | | | | | | | | | | <i>NO ND Filter; It helps,</i> | |
| <i>Too bad about leaving ND in Beam for Exp # 506. Things were bad enough as they were over there</i> | | | | | | | | | | | |
| 8 / 130 | poor | | | Fiber PTS | 1800/50.8 | BS | 4820 \AA | CHB | | | <i>1.8 mag on "E"</i> |
| 15 / 190 | | | | | | | | | | | |
| 40 / 1900 | | | | | | | | | | | <i>50/2350 at 8"</i> |
| <i>Backed up to 3.5" to end.</i> | | | | | | | | | | | |
| <i>found revolving door opening facing control room</i> | | | | | | | | | | | |
| <i>dark corners probably elevated.</i> | | | | | | | | | | | |

II Tues/Wed
 Date 1990 Oct 2/3 Observers KK/Tn/Pd

Emulsion Batches:

.....

| 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. |
|-----------------------------|------------------------------|---------------------------------------|---------------------|-------------------------|-----------------------|-------------------|--------------------|---------------------------|------------------|
| 511 | Comparison <i>deleted</i> | platform | 7enck | (Oct/afternoon) | | | f/18 only | FeNe FeNe | |
| 512 | Comparison | | | | 1913 | | f/18 Stop | FeNe A=1/2 | 330 g |
| 513.KK | HD 183912 | 19 26 42 | +27 45 00 | 18 36 30 | 18 50 05 | 00 12 | F | | |
| 514.KK | " | " | " | 18 50 39 | 19 17 | 00 15 | W | | |
| 515.KK | " | " | " | 19 17 | 19 56 | 00 54 | W | | |
| Fm ⁰⁰⁰ 287.Tn | HD 183912 seeing test | | | | 20 03 | 01 00 | W | | Int x4 |
| 516 | Comp | | | | | | f/18 stop | FeNe A=1/2 | |
| 517 | HD 186791 | 19 41.5 | +10 22 | 20 23 | 20 37 | 01 20 | W | | |
| 518 | Comp | | | 20 41 | | | f/18 stop | FeNe A=1/2 | 200 |
| 519 | HD 217675 | 22 57.3 | +41 47 | 21 01 19 | 21 55 40 | 00 36 | E | | |
| 520 | " | " | " | 22 05 30 | 22 49 | 00 16 | W | | |
| 521 | Comp | | | | | | f/18 stop no ND | FeNe A=1/2 | 200 |
| DF 173.Tn | MIRN | 02 14.3 | -3 26 | 00 54 | 01 02 | 00 47 | E | | Int = 0 |
| 174.Tn | " | " | " | 01 13 | 01 21 | 00 28 | E | | " |
| | Note 174.Tn | CAMERA Rotated $\approx 90^\circ$ CCW | | | | | | | |

Spectr. Temp. ...

Focus.....

Spectr. Temp.

Exp. Nr. Seeing

330/330

20/100

00/000 2"

100/1100 2"

200/1200

Int
x4
(5/18/90)

150/1800

120/1320

300/300 3"

300/300 2.5"

200/190

47 column 3"

47 col "

Spectr. Temp. Dome Temp./Hum. $+11^{\circ}\text{C}$ 80% Transparency Conditions *Fine* 12°
 Focus Speckle configuration; fiber 1 & 3 6.3x objective
 Spectr. Temp. Dome Temp./Hum. 0.34 in 150° for Albireo A2

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|----------------------------------|---------|-----------|------------------|------------|--------------|----------|--------------------------|-----------------|----------------|---|---------|
| $330/330$ | | | | RC ff | $830/39.5$ | 300μ | PCS | | | | |
| $120/120$ | | | | " | " | " | " | | Speckle | | |
| $900/900$ | $2''$ | B= 4.2 | K5 II + B? | " | " | " | " | 300-3800 pixels | KK Speckle pyn | 6 mag Timetag Some focus adj @ 1925 (image off hole) | |
| $1100/1100$ | $2''$ | | | " | " | " | " | 500-3600 pixels | " | 1 meg Timetag to 'E' | |
| $1200/1200$ | | | | | | | | " | | | |
| $(39 \times 39 \text{ pixels?})$ | $2''$ | | | | | | speckle Fiberhead. | | | Only NE Fan on, due to water in SE cell. Dome WSW, light SW breeze | |
| $1800/1800$ | | 2.72 | K3 VI | | | | | 500-3600 | std vel | Timetag 6.4 mag | |
| $120/120$ | | | | | | | | | | | |
| $300/300$ | $3''$ | B 3.6 | B6p | | | | | 600-3600 | Asm Sp KK | Timetag to 'D' 6.1 mag | |
| $300/300$ | $2.3''$ | " | " | | | | | 500-3600 pixels | " | " " 4.4 mag | |
| $200/190$ | | | | | | | | | | | |
| 47 column | $3''$ | mix? | M | Dome ESE | | | speckle Fiberhead (worm) | | | Drive Test 300 frames SW breeze | |
| 47 col | " | " | " | Dome South | | | " | | | Drive Test | |
| | | | | | Q6 | | Leaving worm at end. | | | | |

B #2

Date 1990 Oct 2/3..... Observers .. J.L.

Emulsion Batches:

.....

| 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. | |
|---|--|--|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----------|--|
| DT 00175.Tn | MIRA | 0214.3 | -3 26 | 01 33 57 | 01 42 | 00 07 E | | | | |
| | Camera Back to normal/rotated pos'n. Q•5 leaving worm at start of 175.Tn | | | | | | | | | |
| DT 000176.Tn | H016739 | 02 35.9 | +39 46 | 02 11 | 02 18 | 00 05 W ? | | | Int x0 | |
| | R 5 leaving worm at end | | | | | | | | | |
| DT 000177.Tn | H016739 | " | " | 02 22 | 02 29 | 00 16 W | | | Int x0 | |
| | R•2 leaving worm at end. | | | | | | | | | |
| Note. No Flat done Tonight due to fiber syst signal loss. | | | | | | | | | | |
| 522 | Flat | — after attempting to reconstruct previous state | | | | | | A=1/8 | 72w's | |

Spectr. Temp. ...

Focus.....

Spectr. Temp.

Exp. Mir. Seeing

47col/um... OK

Q•1/col

39cdms OK

39col ok

1/1800

15

Sat-Sun

Emulsion Batches:

Date 1990 Oct 13

Observers

KK/Th / T. J. Miki

2 Large Tours looked at Ring Nebula

| 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. |
|-----------|---|---------------------------|---------------------|-------------------------|-----------------------|-------------------|--------------------------------|-------------------------------|------|
| | # Vega | 18 36.5 ^{1999.5} | +38 46 | | 18:00 | 0:35W | 1 ^s -2 ^s | 5-5-5 | 5-2 |
| | γ Lyr | 18 58.5 ^{1999.5} | +32 40 | | 18 15 | 0:26W | 5 10 | 20 20 | 40 |
| | γ Aql | 19 45.8 | +10 35 | | 18 25 | 0:13E | 5-10-20 | 20-40-40 | |
| 523 | Flat (before tone) | | | 18 36 | 19 01 | | A=1/4 | ND=20 | |
| 524 | Comp - rerun to 524 (200 now) <u>Done</u> | | | 20 59 | | | A=1/2 | F18 stop | 200 |
| 525 | Ring Nebula | | | 21 07 | 21 45 | 04 03W | | | |
| 526 | Comp | | | | | | F18 stop A=1/2 | FEAR ND 0.2 | 200 |
| 527 | HD 182917 | 19 21.9 | +50 02 | 21 54 | 22 44 | 04 32W | | | |
| 528 | Comp | | | | | | F18 stop A=1/2 | FEAR ND 0.2 | 200 |
| 529 | BM Cass | 00 48.6 | +63 33 | 22 51 | 23 56 | 00 13W | | | |
| | MIRA "naked" eye mag estimates (with my new plastic safety glasses) | | | | | | | | |
| 530 | Comp | | | | | | A=1/2 | FEAR ND 0.2 F18 | 200 |
| 531 | MIRA | 02 14.3 | -3 26 | 00 07 | 00 34 | 00 33 E | ND=1.2 | | |
| 532 | Comp | | | | | | A=1/2 | FEAR ND 0.2 F18 stop | 200 |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mr. Seeing

He

A B

40 300

10 190

5 115

8 110

10 300 3"

10 110

10 300 4"

12-2A 5/1000

10 115

10 1500 4"

5 100

Spectr. Temp. Dome Temp./Hum. $+13^{\circ}\text{C}$ 85% Transparency Conditions *Clear by sundown* 16

Focus *Some cloud*
 Spectr. Temp. Dome Temp./Hum. *during TOUR.* Fans on & Dome open by 17:30

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|--|---|-------------------------|-------|---------------|--------------|------|----------------------|------|---------|--|-------------|
| 5-2 | | 0.00 0.00 | A0 | | | | Tech Pan 2415 | | HarMann | hot | |
| 40 | | B= 3.02 | B9 II | | | | " | | " | | |
| 0-40 | | V 2.72 | K3 II | | | | " | | " | | |
| A B | | | | Fiber Fed PTS | 1800/508 | BS | 7.4 4820A | CH B | | | |
| 70 | 2000 | | | | | | | | | | |
| 200 | 10 | 190 | | | | | | | | | |
| | 5 | 115 | | HP Em | | | | | | something to do while fixing guide camera Focus 2106 T=+8.7 | |
| 200 | 8 | 110 | | | | | | | | | |
| | 10 | 300 | 3" | Var V28 | | | | | | HP double peaked (Twin Peaks) | |
| 200 | 10 | 110 | | | | | | | | | |
| | 10 | 300 | 4" | Var 29 | | | | | | cuts to 500/sec focus | |
| | MIRA S1 brighter than α and S cet But S1 fainter than Y cet, $\therefore \approx 3.7V$ | | | | | | | | | | 2743 T=+8°C |
| 200 | 10 | 115 | | | | | | | | | |
| | 20 | 1500 | 4" | V 23.7 | | | | | | | |
| 200 | 5 | 100 | | | | | | | | | |
| note (std vel next page can be used to compare magnitude to some degree) | | | | | | | | | | 1.5 cuts/sec for HP emission | |

17 #2

Emulsion Batches:

Date .1990..Oct.13/14... Observers ..T.A.....

.....

| 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. |
|-----------|---------------|--------------|---------------------|-------------------------|-----------------------|-------------------|--------------------|---------------------------|--------|
| 533.mk | HD 18884 | 02 57.1 | +3 42 | 00 39 | 00 55 | 00 55 E | IND=1.2 | | |
| 534 | Comp | | | | | | A=1/2 | FEAR ND 0.2 | 200 |
| 535 | MWC 560 | 07 21.0 | 07 32 | 01 35 | 02 19 | 03 54 E | ND | | |
| 536 | Comp | | | 02 19 | | | ND 0.2 | FEAR A=1/2 | 200 |
| 537 | Flat on Timer | | | 02 47 | 1 00 | | platform ND 2.0 | JUNG A=1/4 | 10,800 |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mr. Seeing

50 / 2500 4"

6 / 120

2 / 50 4.5"

5 / 110

5 / 2100

Spectr. Temp. Dome Temp./Hum. $+8^{\circ}\text{C}$ 90% Transparency Conditions *sl. hazy* 18...

Focus

Spectr. Temp. Dome Temp./Hum. $+7.5^{\circ}\text{C}$ 93%

parison
Exp.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|------------------------|--------|---------------|-------------|------------------------|--------------|------|----------|---------|--------------------|---|---------|
| 50 / 2500 * | 4" | 2.53 B=419 | M1.5 III | Fiber PTS | 1800/508 | BS | 4820A | CH B | std vel | Bright * 5000 cuts/300 before defocus | |
| 6 / 120 | | | | | | | | | | | |
| 4 / 50 (cuts at start) | | | | 100 cuts by end of exp | 1800/508 | BS | 4820A | CH B | TIMETAGGED 400K | ie west of pair RH star in Im acquisition view | |
| 5 / 110 | | | | | | | MWC | | | not visible in finder at start (upper border) | |
| | | | | | | | | | | The 2 nearby field stars easily seen however. | |
| | | | | | | | | | | Fit Files Backed up on 35" to 536.unk1 | |
| 35 / 2100 | | | | Fiber PTS | 1800/508 | BS | 4820A | CH B | | | |

H

Sun - Mon

Date 1990 Oct 14/15 Observers Jn. / mki

Emulsion Batches:

.....

Spectr. Temp. ...

Focus

Spectr. Temp. ...

| 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. | Exp. Nr. | Seeing |
|------------------|-----------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|--------------------|---------------------------|-------|----------|---------|
| FIT 00538.mki | Flat while opening up | | | 18 19 | 18 42 | | ND=2.0 | TUNG A=1/4 | | 4/200 | |
| 539 | Comp | | | 18 45 | | | F18 stop ND=0.2 | FEAR A=1/2 | 200 | 7/110 | |
| 540 | HD 182917 | 19 21.9 | +50 02 | 18 51 34 | 19 47 | 01 38 W | | | | 5/200 | 3" |
| 541 | Comp | | | | | | F18 stop ND 0.2 | FEAR A=1/2 | 200 | 5/110 | " |
| 542 | BM CASS | 00 48.6 | +63 33 | 19 56 | 20 33 | 03 06 E | | | | 10/500 | 25" |
| 543 | Comp | | | | | | F18 stop ND 0.2 | FEAR A=1/2 | 200 | | |
| 544 | P4 VUL | 20 16.8 | +21 15 | 20 39 | 20 50 | 01 45 W | | | | 5/200 | 3" |
| 545 | P4 VUL | " | " | 20 51 | 21 24 | 02 19 W | | | 2000s | 10/180 | 3" |
| 546 | Comp | | | | | | ND 0.2 | FEAR A=1/2 | 200 | | |
| 547 | HD 222368 | 23 34.8 | +5 05 | 21 31 | 21 42 | 00 42 E | ND 0.6 | | | 4/200 | " |
| 548 | Comp | | | | | | ND 0.2 | FEAR A=1/2 | 200 | | |
| 549 | HD 14386 MIRA | 02 14.3 | -03 26 | 21 49 | 22 03 | 03 00 E | ND 0.6 | | | 45/1000 | prop. 1 |
| 550 | " | " | " | 22 03 20 | 22 13 | 02 50 E | ND 0.6 | | | 20/1000 | " |
| 551 | Comp | | | 22 13 | | | ND 0.2 | FEAR A=1/2 | 200 | | |
| 552 | Flat [all closed up] | | | 22 28 | | Platform 0 0 | ND 2.0 | TUNG A=1/4 | | 30/190 | |

Spectr. Temp. Dome Temp./Hum. $+12^{\circ}\text{C}$ 85% Transparency Conditions 51 Hazy - cloudy

Focus Fans on & Dome open by 1815 20

Spectr. Temp. Dome Temp./Hum. $+11^{\circ}\text{C}$ 96% South^{East} Wind 11 km/hr

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. c/h | Program | Remarks | Quality |
|-----------|--------|------------|-----|------------------|--------------|------|----------|----------|---------|--|---------|
| A B | | | | Fiber Fed PTS | 1800/50x8 | BS | 4820A | B | | | |
| 40/2000 | | | | | | | | | | No change to setup from previous | |
| 7/110 | | | | | | | | | | (H B dbl) max cuts Focus 2732 T = $+11.6^{\circ}\text{C}$ | |
| 5/200 | 3" | VAR 38V | M | | | | | | | thin cloud | |
| 5/110 | " | | | | | | | | | | |
| 10/500 | 2.5" | VAR 38V | M | | | | | | | diff last night's rate cuts to 700/sec. (conditions similar) | |
| 5/200 | 3" | | | | | | | | | d_1 $\approx \frac{2.5}{3}$ cuts/sec/pixel @ H B | |
| 10/180 | 3" | | | | | | | | | <u>Time Tagged</u> | |
| 40/2000 | | B 464 | F7V | | | | | | std vel | * in & out of cloud | |
| 40/2000 | poor | V 29 | M | | | | | | R9 pgn | part cloudy | |
| 20/1000 | n | n | n | | | | | | n | more cloudy 1-2 cuts/sec/pixel (H B emission) | |
| 30/1900 | | | | | | | | | | Backed up to 551 | |

21 pg #1

MON - TUES

Emulsion Batches:

Date 1990 Oct 15/16... Observers Jn.....

| 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 | Exp. Mr. | Seeing |
|--------------------------------------|----------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|---|---------------------------|----------|----------|--------|
| 553 | Flat (while opening) | | | 18 03 | 18 39 | | Tung A=1/4 | ND 200 | | 5/250 | |
| 554 | Comp | | | 18 43 | | FeAR | f18 NO=0.2 A=1/2 | FeAR A=1/2 | 200s | 8/150 | |
| ^{FIT & TAG} 555, mki | PUVUL | 20 16.8 | +20 15 | 18 48 | 19 39 | 00 37 W | f18 stop f18 stop ND 0.2 | FeAR A=1/2 | 3000 sec | 10/200 | 25" |
| 556 | Comp | | | 19 39 | | | f18 stop ND 0.2 | FeAR A=1/2 | 200s | | |
| 557 | HD 182917 | 19 21.9 | +50 02 | 19 46 30 | 20 31 | 02 26 W | | | | 8/100 | |
| 558 | Comp | | | | | | f18 stop ND 0.2 | FeAR A=1/2 | 200s | 5/130 | |
| 559 | Comp (at Ha) | | | | | | f18 stop no ND | FeAR clear | 200 | 5/60 | |
| 560 | HD 182917 | 19 21.9 | +50 02 | 20 43 43 | 21 18 40 | 03 13 W | | | | 20/1300 | 25" |
| ^{FIT & TAG} 561, mki | Comp | | | <u>21 34</u> | | | f18 stop no filter | FeAR A clear | 200s | | |
| | HD 182917 | 19 21.9 | +50 02 | 21 19 | 21 33 | 03 28 W | | | 800 sec | 20/1000 | |
| 563 | HD 207076 | 21 41.4 | -2 40 | 21 39 | 21 51 30 | 01 26 W | | | | 40/2200 | 4" |
| 564 | Comp | | | 21 52 | | | f18 stop no filters | FeAR A clear | 200 | 5/70 | |
| 565 | Comp (H Beta) | | | 21 58 | | | f18 stop ND 0.2 | FeAR A=1/2 | 200 | 10/160 | |
| 566 | HD 207076 | 21 41.4 | -2 40 | 22 03 | 22 17 | 01 50 W | | | | 10/900 | 4" |
| 567 | Comp | | | | | | f18 stop ND 0.2 | FeAR A=1/2 | | | |

Spectr. Temp. Dome Temp./Hum. ... +11.5°C 64% Transparency Conditions ... Mostly Clear - Part. Cloudy. 22

Focus

Spectr. Temp. Dome Temp./Hum. ... + 8°C ... 75% Focus 2728 @ 10.7°C cuts MAX

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | CH P.H. | Program | Remarks | Quality |
|-----------|--------|--------------|-------|-----------------|--------------|------|----------|---------|----------------------------------|--|---------|
| 45/2150 | | | | FiberFed PTS | 1800/50.8 | BS | 4820 | B | | | |
| 8/150 | | | | | | | | | | | |
| 10/200 | 2.5" | ≈ 10V | | | | | | | 3/52/0xnd eHP cuts to 300/sec | TimeTAG 500 → 3600 pixels To E: 1.6 meg same cloud by 19 20 | |
| 8/1100 | | V4R ≈ 8.5 | IV | | | | | | CH Cyg pgm | Red Hβ peak higher than blue one cuts to 550/sec | |
| 5/130 | | | | | | | | | | | |
| 5/60 | | | | PTS | 1800/62.8 | BS | 6600Å | B | | | |
| 20/1300 | 2.5" | V V ≈ 8 | VI | | 1800/62.8 | | 6600Å | | CH Cyg pgm | (Hα looks single & symmetrical Hα ≈ 2 cuts/sec/pixel) | |
| 20/1000 | | | | | | | 6600 | | CH Cyg pgm | TimeTag 500 - 3600 pixels SI Haze now ≈ 3 meg | |
| 40/2200 | 4" | B 7.89 | M7II | PTS | 1800/62.8 | | 6600 | | CH Cyg std | | |
| 5/60 | | | | " | " | | " | | | | |
| 10/160 | | | | PTS | 1800/50.8 | | 4820Å | | | | |
| 10/900 | 4" | B 7.89 | M7III | " | " | | " | | CH Cyg std | cloud at end | |
| | | | | " | " | | " | | | | |

23 pg #2

Date .1990..Oct.15/16.. Observers .J.n.....Stefan.planig.in

Emulsion Batches:

.....

| 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. |
|--|--------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|--------------------|---------------------------|--------|
| FIT00 | | | | | | | | | |
| 568.mki | BMCASS | 00 48.6 | +63 33 | 22 25 | 23 08 | 00 26E | | | |
| 569 | Comp | | | 23 10 | | | F18 stop ND 0.2 | FeAR A=1/2 | 200s |
| Fm000288.Tn | BMCass Seeing test | | | 569 23 09 | | | 4 frames | Intx4 | |
| Fm000289.Tn | HD 3765 | 00 35.3 | +39 40 | 23 19 | | 00 00 | " | " | |
| 570.mki | HD 3765 | " | " | 23 20 | 23 30 | 00 09W | | | |
| 571 | Comp | | | | | | F18 ND 0.2 | FeAR A=1/2 | 200s |
| 572 | HD 14386 | 02 14.3 | -03 26 | 23 37 | 23 52 | 01 07E | ND 1.2 | | |
| 573 | Comp | | | 23 52 | | | F18 ND 0.2 | FeAR A=1/3 | 200s |
| 574 | Comp | | | | | | F18 no filter | FeAR A clear | 200 |
| 575 | HD 14386 | 02 14.3 | -03 26 | 00 03 28 | 00 14 | 00 45E | ND 1.2 | | |
| 576 | Comp | | | | | | F18 no filter | FeAR A=clear | 200 |
| 577 | Flat | | | 00 21 | 01 29 | | F18 ND 2.0 | TUNG A=1/4 | 4000 |
| 578 | Flat on timer | | | 01 43 | | | F18 ND 2.0 | TUNG A=1/4 | 10,000 |
| <p>Note regarding 578 (Oct 17) KK felt that the δ region was prob 4820Å, and that next days δ change was not rel to 578. I didn't check comp lines to verify this.</p> | | | | | | | | | |

Spectr. Temp. ...

Focus.....

Spectr. Temp.

Exp. Mtr. Seeing

8/400 3"

5/120

3-31/100 OK

3-31 OK

40/400 3"

4/130

20/1200 3"

6/140

5/60

20/2400

8/60

48/2000

30/1750

Oct 18

shows

Spectr. Temp. Dome Temp./Hum. $+8^{\circ}\text{C}$ 76% Transparency Conditions ... Part cloudy 29

Focus
 Spectr. Temp. Dome Temp./Hum. $+7.5^{\circ}\text{C}$ 82%

| Comparison Iter | Exp. | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | EH. CH | Program | Remarks | Quality |
|-----------------|-------|-------------|--------|-----------|-----|-----------|--------------|------------|-------------------------------|--------|------------------------|--|---------|
| | | 8/400 | 3" | VTR = 9V | M | Fiber PTS | 1800/50.8 | BS | 4820A | B | | Focus 2738 T = +8.0C | |
| | 200s | 5/120 | | | | | | | | | | | |
| | 4 | 31x31 pixel | OK | | | | | Fiber Head | | | | Dome North Light west wind | |
| | | 31x31 | OK | | | | | " | | | | Dome west " | |
| | | 40/2400 | 3" | | | | | BS | | | std vel | | |
| | 200s | 4/130 | | | | | | | | | | | |
| | | 20/1200 | 3" | 38 | M | | | | sl 21 cnt/sec/pixel at H beta | | MIRA pgm | sl hazy Same Rel mag as noted Oct 13/14 | |
| | 200s | 6/140 | | | | | | | 4820 | | | | |
| | 200 | 5/60 | | | | Fiber PTS | 1800/62.8 | BS | 6600R | | | | |
| | | 40/2400 | | | | " | " | " | 6600A | | MIRA pgm | @ H α Almost 2 cnts/sec/pixel | |
| | 200 | 8/60 | | | | | | " | " | | | | |
| | 400 | 48/2800 | | | | | 1800/62.8 | " | 6600A | | cnts mostly 22600 cnts | * cnts 3200/sec when Tel on platform (Briefly) | |
| | 11.5m | 30/1750 | | | | | 1800/50.8 | | 4820A | | | | |
| | | | | | | | | | | | | Fits Barked off to 577 | |
| | | | | | | | | | | | | | |

Oct 18 Reduct. of this Flat shows it consistent with 4820A Region. in ~~Actually probably very Red beyond H α due to control problem.~~

25

Tues - wed

Date 1990 Oct 16/17... Observers Tn... mki checking...

Emulsion Batches:

.....

| 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. |
|-----------|---|--------------|---------------------|-------------------------|-----------------------|-------------------|--------------------|---------------------------|------|
| 579 | Comp (kept anyway - It was where things were; last great photo) | | | | | | f18 ND 0.2 | FeAR A=1/4 | |
| 580 | Comp | | | | | | f18 ND 0.2 | FeAR A=1/2 | 200 |
| 581 | PU VUL | 20 16.8 | +21 15 | 18 41 | 19 32 | 00 34 W | | | 3010 |
| 582 | Comp | | | | | | f18 ND 0.2 | FeAR A=1/2 | 200 |
| 583 | HD 182917 | 19 21.9 | +50 02 | 19 37 30 | 20 04 | 02 04 W | | | 30 |
| 584 | Comp | | | | | | f18 ND 0.2 | FeAR A=1/2 | 200 |
| 585 | V1016 Cyg | 19 53.6 | +39 34 | 20 09 20 | 20 39 | 02 06 W | | | |
| 586 | Comp | | | | | | f18 stop ND 0.2 | FeAR A=1/2 | 200 |
| 587 | HD 207076 | 21 41.4 | -2 40 | 20 45 | 21 09 | 00 46 W | | | |
| 588 | Comp | | | | | | f18 ND 0.2 | FeAR A=1/2 | 200 |
| 589 | HD 14386 | 02 14.3 | -03 26 | 21 17 | 21 40 | 03 15 E | ND 0.6 | | |
| 590 | Comp | | | | | | f18 ND 0.2 | FeAR A=1/2 | 200 |
| 591 | HD 222368 | 23 34.8 | +05 05 | 21 45 | 21 54 | 00 21 E | ND removed f18 | FeAR A=1/2 | 200 |
| 592 | Comp | | | | | | ND 0.2 | FeAR A=1/2 | 200 |
| 593 | Flat | | | 22 04 | ≈ 01 04 | ☞ | TUNG ND 2.0 | A=1/4 | |
| 594 | 3 HA DARK | | shutter closed | 04 18 | | | | | |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mir.

Seeing

Prob
Flat

1/10

10/400 2"

20/100 2"

7/400 2"

8/

40/200 3"

40/300 4"

7/190

30/100-300 4"

30/1800

40/410

Spectr. Temp. Dome Temp./Hum. +12° ... 64% Transparency Conditions . Clear 26 ...

Focus

medium south wind

Spectr. Temp. Dome Temp./Hum. +10° ... 67%

| Exp. Mtr. A B | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/ Tilt | Slit | Emulsion | C.H. | Program | Remarks | Quality |
|------------------|-----------------|--|------------|------------------|------------------|------|----------|------|------------------------------|--|------------|
| | | PROB 2 of previous Flut from last night | | Fiber Fel PTS | 1800/? | BS | ? | B | | * L prob/yes, way out in Red | |
| | 110 | | | v | 1800/508 | BS | 4820A | | | | |
| | 10 / 400 | 2.2" | 10V | n | 1800/50.8 | BS | 4820A | | Cuts to 500/sec | Time TAG to E: 3.4 mag 6 cuts/sec/pixel for H beta | |
| | 20 / 1000 | 2.2" | VAR 28V | M | | | | | | Focus 2735 c/c LH HB path higher | |
| | 7 / 400 | 2.2" | 10V | | | | | | Field drawn but no doubts | str En. at Red/Blue ends H beta very str. 12 cuts/sec/pixel | |
| | 40 / 2000 | 3" | B= 7.89 | M7 III | | | | | | CH Cyg stel | some cloud |
| | 40 / 2400 | 4" | 38V | M | | | | | | MIR A pgm | thin cloud |
| | 7 / 140 | | | | | | | | | | |
| | 30 / (100-3000) | 4" | B= 4.64 | F7 V | | | | | | stel vel | cloud |
| | 30 / 1800 | | | | | | | | | Backed up to 594 on 5.5" and All, incl TAGs to Perseus, | |
| | 410 / 410 | | | | | | | | | Lights out | R.H.H. |

☐

Fri - Sat

Emulsion Batches:

Date 1990.19.20 Oct. Observers T. N. P. d. r.

Optical dish

| 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. |
|------------------|-------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|---------------|
| ce 01389.Fds | * BIAS | | | | | | | | |
| 1390.Fds | * Comp | | | 21 24 | | | | THAR | 6sec |
| 1391.Fds | * HD 195556 | 20 26 58 | +48 36 55 | 21 27 | 21 50 | 02.55W | | | |
| | * Comp | | | | | | | THAR | 6s |
| | * HD 195556 | " " | " " | 22 00 | 22 30 | | | | |
| Fm000 290.Pdr | HD 13013 | 02 02.3 | +43 59 | 00 56 | | 00 26W | +44 28 | Int x4 | "N" - made |
| 291.Pdr | HD 19509 | 03 03.1 | +36 55 | 01 26 | | 00 00 | | Int x4 | "N" - made |

Spectr. Temp. ...

Focus

Spectr. Temp.

Exp. Mtr. Seeing

2650

39.39

39.39

Top

Spectr. Temp. Dome Temp./Hum. $+0.3 \pm 0.3^\circ\text{C}$ 70% Transparency Conditions Clearing 28.....

Focus
 Spectr. Temp. Dome Temp./Hum. $+2^\circ\text{C}$ 80% Topup @ 17:30 $T = -1.26^\circ\text{C}$ FANSON & Dome open by 1730

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | Slit P.H. Height | Program | Remarks | Quality |
|-----------|--------|-----------|-----|------------------------|--------------|------|----------------------------|------------------|-------------|--|---------|
| | | | | Echelle CCD | 19.00 | 255 | 4481A | 205 | | | |
| 6sec | | | | | | | | | | | |
| | 2050 | | | | | | | | " | [No goal, we ended Exp with stop and not "Readout"] | |
| 6s | | | | | | | | | " | sci saturated | |
| | | | | | | | | | | [Topup @ 22:40 $T = -8^\circ\text{C}$] Sometime during previous exp, CCD drastically warmed up. | |
| "N" made | 39x39 | 6.4 | G8 | (very light NW breeze) | | | Fiber Head (Dome facing W) | | Seeing Test | Dome T: $+1.3^\circ\text{C}$ | |
| "N" made | 39x39 | 7.10 | KO | " " | | | " (Dome SW) | | " " | by MURIO | |
| | | | | | | | | | | Guide Camera seemed noisy tonight. | |
| | | | | | | | | | | Note* Nov 3/90 In The Ce obs attempt files were deleted after next day or so. I believe. | |

29 py#1

SAT-SUN

Date 1990 Oct 20/21 Observers ... P.d.r. - J.n.

Emulsion Batches:

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

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison | | Exp. Mr. | Seeing |
|------------------|-------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------------|---------------|------|----------|----------|
| | | | | | | | | Type/Filter | Exp. | | |
| FIT 00595.mki | Flat | | | 18 17 | 18 43 | | ND 2.0 | JUNG A=1/4 | | 30 | 1400 43" |
| 596 | Comp | | | | | | ND 0.2 | FeA A=1/2 | | 10 | 145 |
| 597 | PU VUL | 20 16.8 | +21 15 | 19 03 35 | 20 06 | 1 24.5 W | NO ND | | | 5 | 160 43" |
| 598 | Comp | | | | | | ND 0.2 | FeA A=1/2 | | | |
| 599 | PU VUL | 20 16.8 | +21 15 | 20 23 | 20 50 | 2 09 W | ND 0.3* | | | 5 | 70 |
| 600 | Comp | | | | | | ND 0.2 | | | 5 | 120 |
| 601 | V1016 Cyg | 19 53.6 | +39 34 | 20 59 | 21 40 | 3 23 W | ND 0.3 | | | 5 | 80 3" |
| 602 | Comp HD 182917 | | | 21 41 | | | ND 0.2 | FeA A=1/2 | | | |
| 603 | CH Cyg | 19 21.9 | +50 02 | 21 54 | 22 45 | 5 00 W | no filter | | | 5 | 200 5" |
| 604 | Comp | | | | | | ND 0.2 | FeA A=1/2 | | | |
| 605 | HD 207076 | 21 41.4 | -2 40 | 22 52 | 23 29 | 3 23 W | | | | 10 | 1500 76" |
| 606 | Comp | | | | | | ND 0.2 | FeA A=1/2 | | | |
| 607 | BM Cass | 00 48.6 | 63 33 | 23 42 | 00 50 | 1 36 W | ND 0.2 | | | 10 | 350 35" |
| 608 | Comp | | | | | | ND 0.2 | FeA | | 5 | 100 |
| 609 | BM Cass | 00 48.6 | +63 33 | 01:02 | 02:05 | 2 51 W | | | | 10 | 300 4" |

Spectr. Temp.

Dome Temp./Hum. $\approx 6.0^{\circ}\text{C}$ 75%

Transparency Conditions ... mostly clear ... 30

Focus

Spectr. Temp.

Dome Temp./Hum. $+4.7^{\circ}\text{C}$ 92%Comparison
Exp.

| Exp. Mtr. A B | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/ Tilt | Slit | Emulsion λ | CH. | Program | Remarks | Quality |
|------------------|---------------|--------------------------------|-----|------------------|------------------|------|-----------------------|-----|------------|--------------------------------------|---------|
| 30 1400 | 3" | \checkmark 210 | | Fibor Fed PTS | 1800/50-8 | BS | 4820A | B | | | |
| 10 140 | | | | | | | | | | | |
| 5 160 | 23" | \checkmark 210 | | | | | | | | H beta ≈ 3 cuts/sec/pixel | |
| 5 170 | | \checkmark 210 | | | | | | | | * to reduce H beta cuts to 21/sec | |
| 5 120 | | | | | | | | | | | |
| 5 180 | 3" | \checkmark 210 | | | | | | | | | |
| 5 200 | 5" | \checkmark 28 | M | | | | | | CH egg pgm | | |
| 10 1500 | 76" | \checkmark 7-89 | M | | | | | | CH egg std | | |
| 10 350 | 3.5" | \checkmark 28 | | | | | | | | New absorption Rad of H beta? | |
| 5 1100 | | | | | | | | | | Header says BM Cass | |
| 10 1300 | 4" | | | | | | | | | Time TAG to E:\Sheet | |

31 #2

Emulsion Batches:

Date 1990 Oct 20/21... Observers P.R.J.T.

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

Spectr. Temp. ...

Focus

Spectr. Temp.

| 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. | Exp. Mtr. | Seeing |
|----------------|---------------------|--------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|--------------|-----------|--------|
| 610 | Comp | | | | | | ND 0.2 | FeA | 200 | 5/110 | |
| 611 | Mira HD 4386 | 02 14.3 | -03 26 | 02:20.8 | 02:42 | 02 04W | ND 1.2 | | | 20/900 | |
| 612 | Comp | | | | | | ND 0.2 | FeA | A=1/2 200 | 5/110 | |
| 613 | MWC 560* | 07 21.0 | -07 32 | 03 | 03 14 | ~ 02 30E | no filter | | | 5/200 | 3" |
| 614 | MWC 560 | 07 21.0 | -07 32 | 03 17 | 05 18 | 00 26E | no filter | | | 5/250 | 3" |
| 615 | Comp | | | | | | ND 0.2 | FeA A=1/2 | 200 | 5/100 | |
| 616 | HD 66141 | 07 57.1 | +02 36 | 05 28 | 05 48 | E | ND 1.2 | | | 20/1300 | 3" |
| 617 | Comp | | | | | | ND 0.2 | FeA A=1/2 | 200 | | |
| 618 | Flat | | | 06 09 | | | ND 2.2 | FeA A=1/2 | 10,800 | 5/2700 | |
| 619 | Comp | | | | | | ND 0.2 | FeA A=1/2 | 200 | 7/50 | |
| 620 | V 1006 cyg | 19 53.6 | +39 34 | 18:25 | | | | | | | |

33

Mon - Tues

Emulsion Batches:

Date 1990 Oct 22/23. Observers P.d.r./T.n.....

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison | | Exp. Mr. A | Seeing B |
|------------------|--------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|----------------|------|---------------|-------------|
| | | | | | | | | Type/Filter | Exp. | | |
| FIT60 619.mkr | Comp | | | | | | ND 0.2 | Fe AR H=1/2 | 200 | 5 | 110 |
| 620 | V1016 Cyg | 19 53.6 | +39 34 | 18 25 | 19 30 | 1:20 W | | | | 5 | 50 3" |
| 621 | Comp | | | | | | ND 0.2 | Fe AR A=1/2 | 200s | 5 | 100 |
| 622 | PU Vul | 20 16.8 | +21 15 | 19 51.5 | 21 17 | 2:44 W | | | | 5 | 60 4" |
| 623 | Comp | | | | | | ND 0.2 | Fe AR A=1/2 | 200s | | |
| 624 | HD 182917 | 19 21.9 | +50 02 | 21 29 20 | 22 33 | 04 57 W | | | | 3 | 190 5" |
| 625 | Comp | | | | | | ND 0.2 | Fe AR H=1/2 | 200s | | |
| 626 | HD 207076 | 21 41.4 | -02 40 | 22 40 29 | 23 20 | 03 22 W | | | | 5 | 150 5" |
| 627 | Comp | | | | | | ND 0.2 | Fe AR H=1/2 | 200 | | |
| 628 | BM Cass | 00 48.8 | +63 33 | 23 30 | 00 29 | 01 23 W | | | | 8 | 300 3" |
| 629 | Comp | | | | | | ND 0.2 | Fe AR A=1/2 | 200 | | |
| 630 | HD 14386 ^{MIRA} | 02 14.3 | -03 26 | 00 38 | 00 58 | 00 27 W | | | | 10 | 300-3000 5" |
| 631 | Comp | | | | | | ND 0.2 | Fe AR A=1/2 | 200 | 10 | 110 |
| 632 | FLAT | | | 01:14:38 | 02:05:00 | | ND 20 | Fe AR A=1/2 | | 25 | 1700 |
| 633 | FLAT | | | 0219 | | | | | | 10,800 | 5/1700 |

Pg #1

Tues - wed

Emulsion Batches:

Date 1990 Oct 23/24 Observers P.d.r./T.g.....

| 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 | Ex |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------------|
| 634 | Comp | | | | | | ND 0.6 | FeNe A=1/16 | 200 |
| 635 | PU VUL | 20 16.8 | +21 15 | 18 56 | 19 15 | 00 55 W | no filter | | |
| 636 | PU VUL | " | " | 19 23.5 | 19 55 | 01 35 W | ND 1.2 | | |
| 637 | Comp | | | | | | ND 0.6 | FeNe A=1/16 | 200 |
| 638 | V1016 Cyg | 19 53.6 | +39 34 | 20 01 36 | 20 24 | 2 18 W | ND 1.2 | | |
| 639 | V1016 Cyg | " | " | 20 27 26 | 21 13 | 3 08 W | no ND | | |
| 640 | Comp | | | | | | ND 0.6 | FeNe A=1/16 | 200 |
| 641 | HD 182917 | 19 21.9 | +50 02 | 21 19 | 21 39 | 4 06 W | no ND | | |
| 642 | Comp | | | | | | ND 0.6 | FeNe A=1/16 | 200 |
| 643 | HD 207076 | 21 41.4 | -02 40 | 21 45 | 22 01 | 2 06 W | no ND | | |
| 644 | Comp | | | | | | | FeNe A=1/16 | 200 |
| FM 00292 | HD 223094 | 23 41.5 | +28 09 | 22 15 | | 0 21 W | no ND | Int y4 | IV mope |
| 645 | HD 223094 | 23 41.5 | +28 09 | 22 18 | 22 42 | 0 47 W | ND 0.3 | | |
| 646 | Comp | | | | | | ND 0.6 | FeNe A=1/16 | 200 |
| 647 | BM CASS | 00 48.6 | +63 33 | 22 57 | 23 37 | 0 34 W | no ND | | |

Spectr. Temp.
Focus
Spectr. Temp.

Exp. Mtr. Seeing

5/50

10/500 43

5/40 43

5/40

15/350 31

5/45

25/1100 43

25/200 42

5/231

31/31 Pineds

30/1700 3

2/500 43

Spectr. Temp. Dome Temp./Hum. $+9^{\circ}\text{C}$... 70% Transparency Conditions *clearing* 36

Focus

Spectr. Temp. Dome Temp./Hum. $+6.5^{\circ}\text{C}$... 78%

| Comparison /Filter Exp | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | CH. | Program | Remarks | Quality |
|------------------------|------------------|--------|-------------------|-----|-------------------|--------------|------------|----------|-----|--------------------|----------------------------------|---------|
| $\frac{1}{16}$ 200 | 5/50 | | | | Fiber PTS 1800 | 1800/62.7 | BS | 6580P | B | | | |
| | 10/500 | $<3''$ | $\frac{v}{10}$ | | | | | " | | | ≈ 10 cnts/sec/pixel @ Hd | |
| | 5/40 | $<3''$ | $\frac{v}{10}$ | | | | | | | | < 1 cnt/sec/pixel @ Hd | |
| $\frac{1}{16}$ 200 | 5/40 | | $\frac{v}{10}$ | | | | | | | | < 1 cnt/sec/pixel @ Hd | |
| | 15/350 | $3''$ | $\frac{v}{10}$ | | | | | | | | ≈ 10 cnts/sec/pixel @ Hd | |
| $\frac{1}{16}$ 200 | 5/45 | | | | | | | | | | | |
| | 25/1100 | $<3''$ | $\frac{v}{2.85}$ | M6 | | | | | | CH Cyg pym | cnts to 1500/sec | |
| $\frac{1}{16}$ 200 | 25/200 | $4''$ | $\frac{B}{7.89}$ | M7 | | | | | | CH Cyg std. | | |
| | 31x31 | | | | | | | | | Dome SW | Med NW breeze | |
| | 31x31 pixels | | $\frac{v}{7.45}$ | | 4 Frames | | Fiber Head | | | Dome SW | Med NW breeze | |
| | 30/1700 | $3''$ | | | | | | | | std vel | some cloud | |
| $\frac{1}{16}$ 200 | 10/500 | $<3''$ | $\frac{VAR}{2.8}$ | M | | | | | | | ≈ 1 cnt/sec/pixel for Hd | |

37 #2

Emulsion Batches:

Date 1990 Oct 23/24. Observers Pdr./J.n..... m.k.s. Jacking up

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|--------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 648 | Comp after BM case | | | | | | ND 0.6 | FeNe H=1/16 | 200 |
| 649 | Flat (for Hd) | | | 23 47 | 00 54 | 02 W | +64 | TUNG A=1/2 | |
| 650 | Comp | | | 01 02 | | " | " ND 0.2 | FeAR A=1/2 | |
| 651 | BM Case | 00 48.6 | +63 33 | 01 08 38 | 01 23 | 02 21 W | no filter | | |
| 652 | Comp | | | | | | ND=0.2 | FeAR A=1/2 | |
| 653 | HD 14386 | 02 14.3 | -03 26 | 01 31 | 01 47 | 01 21 W | | | |
| 654 | Comp | | | | | | ND 0.2 | FeAR A=1/2 | |
| 655 | MWC 560 | 07 21.0 | -07 32 | 01 57 | 02 08 | 03 25 E | | | |
| 656 | Comp | | | | | | ND 0.2 | FeAR H=1/2 | |
| 657 | FLAT | | | | | | ND=2.0 | TUNG A=1/4 | |
| | | | | | | | | | |
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| | START @ | | ce 01 38 49.505 | | | | | | |
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Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. No.

Seeing

5/50

10/100

ND=

10/125

10/500

3"

8/100

10/300

4"

10/300

1/150

4"

30/300

Spectr. Temp. Dome Temp./Hum. $+6^{\circ}\text{C}$... 80% Transparency Conditions ... Mostly Clear ... 38

Focus

Spectr. Temp. Dome Temp./Hum. $+6^{\circ}\text{C}$... 82%

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | E.H. | Program | Remarks | Quality |
|--|--------|----------------------|----------------|---------------|--------------|------|----------|------|---------|---|---------|
| 5/50 | | | | Fiber Fed PTS | 1800/62.7 | BS | 6580A | B | | | |
| 40/2100 | ND=2.6 | | | " | " | " | " | B | | | |
| 10/125 | | | | Fiber PTS | 1800/50.8 | BS | 4820A | B | | | |
| 10/500 | 3" | \checkmark 28.5 | M _b | | | | | B | | part cloudy - cloudy | |
| 8/100 | | | | | | | | B | | | |
| 10/3000 | 4" | \checkmark 24 | M | | | | | B | | seen as sl fainter cloudy mostly then as 50% Ceti some clear breaks ^{cuts} to 5000 | |
| | | \checkmark 20 | | | | | | | | | |
| 1/150 | 4" | \checkmark 210 | | | | | | | | | |
| | | | | | | | | | | part cloudy - Total | |
| 30/1800 | | | | | | | | | | | |
| All backed up & ftp to Perseus to this date. | | | | | | | | | | | |

39 P4#1

Wed-Thurs

Date 1990..Oct. 24/25. Observers ...Pdr./Tq.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-------------|-----------------------|--------------|---------------------|---|---|-------------------|-------------|---------------------------|------|
| CE01389.145 | BIAS (x4) | | | 23 40 | | | | | |
| 1390 | DARK | | | | | | | | |
| 1391 | BIAS (x4) | | | | | | | | |
| 1392 | DARK | | | | | | | | |
| 1393 | Comp | | | | | | | THAR | 10s |
| 1394 | HD 3901 | 00 36 29 | +49 57 51 | 00 51 | 01 38 | 2 52 W | +50 28 | | |
| 1395 | Comp | | | | | | | THAR | 10s |
| 1396 | Comp | | | 02 03 | | | | THAR | 10s |
| 1397 | HD 224572 | 23 53 56 | +55 11 54 | 02 05 40 | 02 37 46 | 4 35.5 W | +55 43 | | |
| 1398 | Comp | | | 02 42 | | | | | |
| 1399 | Comp for α TAU | | | | | | | THAR | 10s |
| 1400 | HD 29139 | 04 30.2 | +16 18 | 02 ^h 56 ^m 30 ^s | 03 ^h 05 ^m 30 ^s | 0 27 W | | | |
| 1401 | Comp | | | | | | | THAR | 10s |
| 1402 | Comp for Capella | | | 03 16 | | | | THA | 10s |
| 1403 | HD 34029 | 05 09.3 | +45 54 | 03 19 | 03 22 | 0 02 W | | | |

Spectr. Temp. ...

Focus

Spectr. Temp.

Exp. Mtr. Seeing

2200 2"

2200 4"

6000

5875

Spectr. Temp. Dome Temp./Hum. $+8.6^{\circ}\text{C}$ 79% Transparency Conditions ... V. Hazy 40

Focus

clearing By midnight

Spectr. Temp. Dome Temp./Hum.

90 cgain 0 0 256 1024 4 1 CCD FMS

| Comparison Filter Exp. | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/ Tilt | Slit | Emulsion | F.H. Length | Program | Remarks | Quality |
|---------------------------|----------------|---------|----------------------|---------|----------------|------------------|-------------------|----------|-------------------|----------|-----------------|--|
| | | | | | CCD Echelle | 19.00 | 115 μ .255 | 4481 | 600 μ .205 | | 1ci | |
| | | | | | | | | | | | 2ci | |
| | | | | | | | | | | | 3ci | |
| | | | | | | | | | | | 4ci | |
| 10s | ≈ 2200 | 2" | $\sqrt{3.81}$ | B2V | | | | | | Fds Sigm | 1ci | ADU ≈ 2200 max |
| 10s | | | | | | | | | | | | |
| 10s | ~ 1700 | $< 2''$ | $\sqrt{4.88}$ | B1V | | | | | | Fds Sigm | 2ci | $T = -129^{\circ}\text{C}$ Topup before this comp ADU ≈ 1400 max |
| 10s | | | B 2.44 | K5H1 | | | | | | | | |
| 10s | 6000 | | B 2.44 | K5V | | | | | | std vel | 2.44 | ADU ≈ 5000 |
| 10s | | | | | | | | | | | | |
| 10s | 5875 | | B 0.88 | G8III+f | | | | | | Capella | | 2 ADU 4000 |

Pl #2

Wed - Thurs

Emulsion Batches:

Date 1990 Oct 24/25 Observers Pdr. / Tn.....

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| Plate No. | Object | R. A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|-------------------|---------------|---------------------|---|-----------------------|-------------------|-------------|---------------------------|------|
| 1404 | Comp for Capella | | | | | | | TH AR | 10s |
| 1405 | HD 34029 | 05 09.3 | +45 54 | 03 ^h 32 ^m 30 ^s | 03 40 | 00 20W | | | |
| 1406 | Comp | | | | | | | TH AR | 10s |
| 1407 | BIAS x (A) | | | | | | | | |
| 1408-1411 | Flats x 4 | | | | | 00 28W + 45° 07 | | TUNG | 55s |
| 1412-1415 | Flats x 4 | | | | | 00 00 + 16° | | TUNG | 55s |
| 1416-1419 | DARK. BAY started | | | 04 30 | | | | | |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

27500

Spectr. Temp. Dome Temp./Hum. +6.6°C... 85% Transparency Conditions *cloudy* 42

Focus

Spectr. Temp. Dome Temp./Hum.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | slit P.H. Length | Program | Remarks | Quality |
|--|--------|---------------------|-----|-------------|--------------|--------------|----------|------------------|---------|----------------|---------|
| 10s | | | | CCD Echelle | 19.00 | .255 115u | 4481A | 600u 205 | Capella | max ADU 5000 | |
| 10s | | B 0.88 (G211?+F) | | | | | | | | | |
| 55s | | | | | | | | .185 | | T = -129°C | |
| 55s | | | | | | | | .185 | | max ADU = 8000 | |
| <p>Note - Ce 1389.FTS → Ce 1419.FTS now FTP'd to Perseus / CCD OBS</p> | | | | | | | | | | | |

43

Fri/Sat

Emulsion Batches:

Date 1990 Oct 26/27 Observers KK SC Pd.....

Optical disk clone

| 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. |
|-----------|---------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----------------|
| ce 1420 | Comparison | | | | | | | Th-A | 10 ^s |
| ce 1421 | HD 183912 | 19 26.7 | +27 45 | 18:58 | 19:11 | | | | |
| ce 1422 | comparison | | | | | | | Th-A | 10 ^s |
| ce 1423 | bias 4X | | | | | | | | |
| ce 1424 | comparison | | | | | | | Th-A | 10 ^s |
| ce 1425 | HD 186791 | 19 41.5 | +10 22 | 19:22 | 19:29 | | | | |
| ce 1426 | comparison | | | | | | | Th-A | 10 ^s |
| ce 1427 | comparison | | | | | | | Th-A | 10 ^s |
| ce 1428 | HD 202109 | 21 8.7 | +29 49 | 19:40 | 19:51 | | | | |
| ce 1429 | comparison | | | | | | | Th-A | 10 ^s |
| ce 1430 | comparison | | | | | | | Th-A | 10 ^s |
| ce 1430 | HD 209790(A) | 22 00.9 | +64° 08' | 20:03 | 20:30 | | | | |
| ce 1432 | comparison | | | | | | | Th-A | 10 ^s |
| ce 1433 | HD 209791 (B) | 22 00.9 | +64° 08' | 20:35 | 21:19 | | | | |
| ce 1434 | comparison | | | | | | | Th-A | 10 ^s |
| ce 1435 | comparison | | | | | | | Th-A | 10 ^s |

Spectr. Temp. ...

Focus.....

Spectr. Temp.

Exp. Mtr.

Seeing

2000 2-3"

2100 2"

2200 2"

2300 4"

420 3?"

45

Date 1990 Oct 26/27 Observers page 2

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison | | Exp. Mr. | Seeing |
|--------------|----------------|-------------------|---------------------|-------------------------------------|-----------------------|-------------------|-------------|-------------|-----------------|----------|--------|
| | | | | | | | | Type/Filter | Exp. | | |
| ce 1436 | HD 215182 | 22 38.3 | +29° 42' | 21:28 | 21:36 | | | | | 2000 | 2" |
| ce 1437 | HD 215182 | 22 38.3 | +29° 42' | 21:37 | 21:54 | | | | | 5000 | 2" |
| ce 1438 | comparison | | | | | | | Th-4 | 10 ^s | | |
| 1439-42 | flats | | | | | | | Tung | 15 ^s | | |
| 1443 | flat | | | | | | | Tung | 60 ^s | | |
| 1440 1444 | dark | 1200 ^s | | | | | | | | | |
| | | | | | | | | | | | |
| | | Oct 29 | | | | | | | | | |
| cef 013 | Hartmann - in | | | | | | | Neon | 20 | | |
| cef 014 | Hartmann - out | | | | | | | Neon | 20 | | |
| | | Oct 30 | | | | | | | | | |
| cef 015 | Hartmann out | | | Dewar tilted out at micrometer side | | | | ThA | 10 | | |
| 016 | " IN | | | | | | | " | " | | |
| 017 | " IN | | | Dewar flush | | | | " | " | | |
| 018 | " OUT | | | | | | | " | " | | |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mr. Seeing

47

Emulsion Batches:

Date 1990 Oct 30 cont Observers KK — focus tests on echelle

| 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. |
|----------------|---|--------------|---------------------|-------------------------|-----------------------|----------------------|-------------|---------------------------|-----------------|
| | rotated tilt rings so that notch now reads 8-11mm | | | | | | 8. outer | | |
| | instead of 7 mm | | | | | | | | |
| cef 019 | mask IN | | | | | | | ThA | 10 ^s |
| cef 020 | mask out | | | | | | | ThA | 10 ^s |
| 1990 Oct 30/31 | | Mki/Pdr | <u>PCS</u> | | | | | | |
| 658 | FLAT | | | 17:34 | 20:32 | | ND=2.0 | Tung A=1/4 | |
| 659 | Comp. | | | 20:57 | 21:00:25 | | ND 0.2 | FeA A=1/2 | 200 |
| 660 | Comp | | | 21:03 | 21:06:26 | | " " | A=1/4 | 200 |
| 661 | BM Cass | 00 48.6 | +63 33 | 01:13:30 | 01:33:30 | | No ND | | |
| 662 | Comp | | | 01:42:29 | | | ND 0.2 | FeA A=1/2 | 200 |
| 663 | HD 29587 | 04 34 30 | +41 57 00 | 02:01:00 | 02:21:13 | 00 ^h 00 | No ND | | |
| 664 | Comp | | | 02:25 | 02:28:25 | | ND 0.2 | | |
| 665 | MCW 560 | 07 21 00 | -07 32 00 | 02:57 | 04:12:28 | 00 ^h 53 E | | | |
| 666 | " " | " " | " " | 04:15 | 05:30:06 | 00 ^h 25 W | | | |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr.

Seeing

30/150

70/180

5/50

0/540

5/120

1/2000

8/110

10/250

1/200

3/5

49

Date 1990 Oct 30/31 Observers MKi/Pdr (cont'd)

Emulsion Batches:

| 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. |
| 667 | Comp | | (1950) | 05:32:10 | 05:35:35 | | FLAT A = 1/2 | ND 0.2 ND 1/2 | 200 |
| 668 | HD 86986 | 09 59 47 | +14 47 56 | 05:49:30 | 05:59:30 | | | | |
| 669 | Comp | | | 06:01:30 | | | | ND 0.2 | 200 |
| 670 | FLAT | | | 06:23:10 | | | FLAT A = 1/4 | ND 20 | |
| | | | | | | | | | |
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Spectr. Temp. ...
 Focus
 Spectr. Temp.
 Exp. Mtr. Seeing
 /135
 30/1500
 0/120
 26/1500

51

PCS

Emulsion Batches:

Date Oct 31 / Nov 1 Observers MKI / Pdr

| 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 |
|-----------------------|----------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----|
| 670 671 | mkc FLAT | | | 21:47 | 23:45 | | | ND 2.0 | 3h |
| 672 | Comparison | | | 23:55 | | | ND 0.2 | Fe-A A=1/2 | 200 |
| 673 | HD 29587 | 04 34 30 | +41 57 00 | 00:06:30 | 00:11:29 | 02:05 E | | | |
| 674 | Comp | | | 00:12:40 | | | ND 0.2 | | 200 |
| 675 | HD 19445 | 03 05 29 | +26 09 08 | 00 29 30 | 00 49 37 | 00 05 W | | | |
| 676 | Comparison MCW 560 | | | 00 52 06 | 00 55 34 | | ND 0.2 | | 200 |
| 677 | MCW 560? | | | 01 15 30 | 01 37 18 | | | | |
| 678 | MCW 560? | | | 02 13 30 | 02 27 10 | | | | |
| 679 | Comp | | | | | | ND 0.2 | Fe A A=1/2 | |
| 680 | FLAT | | | 03 01 00 | | | ND 2.0 | | |
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Spectr. Temp.

Focus

Spectr. Temp.

Exp. Mtr. Seeing

20/1600

5/120

20/2800 3"

3/130

20/1000

10/180

10/50

10/1700

53

Tues Fri

Emulsion Batches:

Date 1990 Nov 1/2..... Observers ... T. ... (mki phone in)

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison | | Exp. Mr. | Seeing |
|-----------|------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|------------------|---------------|--------|----------|--------|
| | | | | | | | | Type/Filter | Exp. | | |
| 681-mki | Flat | | | 17 26 30 | 18 18 34 | * Hr Ls from | ND 2.0 | TUNG A=1/4 | 310s | 4/1500 | |
| 682 | Comp | | | 18 21 | | Hr L circle | ND 0.2 | FEAR A=1/2 | 200s | 10/110 | |
| 683 | P4 VUL | 20 16.8 | +21 15 | 18 26 | 19 26 | 00 32 W | no filter | | | 9/100 | 23" |
| 684 | Comp | | | | | | ND=0.2 | FEAR A=1/2 | ~ 180s | | |
| 685 | V1016 Cyg | 19 53.6 | +39 34 | 19 33 30 | 20 34 | 03 06 W | * no filter | | | 11/50 | 3" |
| 686 | Comp | | | | | | ND=0.2 | FEAR A=1/2 | 200s | 5/110 | |
| 687 | HD 182917 | 19 21.9 | +50 02 | 20 39 44 | 21 27 | 0 430 W | no filter | | | 5/250 | 4" |
| 688 | Comp | | | | | | ND 0.2 | FEAR A=1/2 | 200s | 4/100 | |
| 689 | HD 207076 | 21 41.4 | -02 40 | 21 37 30 | 22 23 | 03 05 W | Open * +02 08 | | | 5/500 | 4-6" |
| 690 | Comp | | | | | | ND 0.2 | FEAR A=1/2 | 200s | | |
| 691 | HD 223311 | 23 43.4 | -06 56 | 22 28 | 22 44 | 01 24 W | no filter | | | 4/2000 | 5" |
| 692 | Comp | | | | | | ND 0.2 | FEAR A=1/2 | 200 | | |
| 693 | MIRA HD 14386 | 02 14.3 | -03 26 | 22 49 | 23 06 | 00 44 E | no filter* | | | 5/1000 | 5" |
| 694 | Comp | | | | | | ND 0.2 | FEAR A=1/2 | 200s | 5/110 | |
| 695 | Flat | | | 23 33 | 00 30 | 0 0 | ND 2.0 | TUNG A=1/4 | 3 hrs | 4/1500 | |

Spectr. Temp. Dome Temp./Hum. $+11^{\circ}\text{C}$... 85% Transparency Conditions ... V. Hazy ... - Full moon ... 54

Focus

Spectr. Temp. Dome Temp./Hum. $+8^{\circ}\text{C}$... 93% * Encoder Date @ 09 30 1990 @ HRLS using even when no ...

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | E.H. | Program | Remarks | Quality |
|-------------------|--------|-----------|-------|------------------|--------------|------|----------|------|-----------------|---------------------------------------|---------|
| 40/1400 | | | | FFPTS (FiberFed) | 1800/50-8 | BS | 4820A | B | | | |
| 10/110 | | | | | | | | | | | |
| 3/100 | 2.3" | V = 10 | HB Em | | | | | | | = 1.3 cuts/sec/pixel @ H Peter | |
| 6/80 | 3" | V = 10 | HB Em | | | | | | Cuts to 220/sec | * V hazy * 3 cuts/sec/pixel @ H Peter | |
| 5/100 | | | | | | | | | | | |
| 5/250 | 4" | VAR = 8V | MB | | | | | | CH Cyp pgn | Cont = 0.200 load hazy - part cloudy | |
| 8/500 | 4-6" | B = 7.89 | MF | | | | | | CH Cyp stel | * part cloudy encoder dec way out. | |
| 40/2000 | 5" | V = 6.07 | gK4 | | | | | | stel vel | thin cloud - thicker | |
| 30/1000 → 3000 | 5" | V = 4 | MA7 | | | | | | MIRA pgn | * in cont of cloud + defocused | |
| 5/110 | | | | | | | | | | | |
| 40/1500 | | | | | | | | | | | |

Nov 3. ALL FITS Buckled up to here.
All PCS Files Buckled up → PERSEUS to date also.

pg #1

Tues/Wed

Emulsion Batches:

55

Date 1990 Nov 6/7 Observers T. miki phan in

AST TIME Synchronous with Astro. Clock

| 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. | Exp. Mtr. | Seeing |
|------------------|------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------------------------|-----------|--------|
| FIT00 696 mki | Comp | | | 18 23 | | | ND 0.2 | FeAr A=1/2 | 200s | 5/130 | |
| 697 | PU VUL | 20 16.8 | +21 15 | 18 41 26 | 19 33 | 01 58 W | no filter | | | 8/130 | 4" |
| 698 | Comp | | | | | | ND 0.2 | FeAr A=1/2 | 200s | | |
| 699 | HD 182 917 | 19 21.9 | +50 02 | 19 45 | 20 42 | 04 04 W | | | | 8/150 | 4" |
| 700 | Comp | | | | | | ND 0.2 | FeAr A=1/2 | 200s | 5/100 | |
| 701 | HD 207 076 | 21 41.4 | -02 40 | 20 49 48 | 21 15 | 02 15 W | | | | 5/700 | 5" |
| 702 | Comp | | | | | | ND 0.2 | FeAr A=1/2 | 200s | 5/115 | |
| 703 | HD 3765 | 00 35.3 | +39 40 | 21 21 29 | 21 37 | 00 18 E | | | | 20/1600 | 4" |
| 704 | Comp | | | 21 43 | | | ND 0.2 | FeAr A=1/2 | 200s | | |
| Fm000 293-TN | HD 3765 | 00 35.3 | +39 40 | 21 41 | | 00 14 E | | N mode | J _{int} x4 | 20/300 | 3" |
| 705 | V1016 Cyg | 19 53.6 | +39 34 | 21 48 | 22 07 | 04 57 W | | | | 4/100 | 3" |
| 706 | Comp | | | | | | ND 0.2 | FeAr A=1/2 | 200s | | |
| 707 | HD 143 86 | 02 14.3 | -03 26 | 22 21 24 | 22 33 | 00 59 E | | | | 10/500 | 5" |
| 708 | Comp | | | | | | ND 0.2 | FeAr A=1/2 | 200s | 7/140 | |
| 709 | HD 143 86 | 02 14.3 | -03 26 | 22 43 25 | 23 01 | 00 31 E | | | | 10/500 | 3" |

Spectr. Temp. Dome Temp./Hum. $+4^{\circ}\text{C}$ 72%Transparency Conditions *Part Cloudy* 56
NW wind

Focus

Spectr. Temp. Dome Temp./Hum.

Dome open & Fung on big 18 EST

| Comparison Ter. Exp. | Exp. Mtr. A/B | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/ Tilt | Slit | Emulsion ? | CH. | Program | Remarks | Quality |
|-------------------------|------------------|--------|----------------------|-----|----------|------------------|------|---------------|-----|-------------|---|---------|
| 200s | 5/130 | | | | FF PTS | 1800/508 | BS | 4820A | B | | | |
| | 8/100 | 4" | \checkmark 210 | | | | | | | | < 2 cuts/sec/pixel @ H beta | |
| 200s | 8/250 | 4" | \checkmark 28 | M6 | | | | | | CH Cyg pyg | [Red H beta Comp much stronger than previous dots] | |
| 200s | 5/100 | | | | | | | | | | | |
| | 15/700 | 5" | B= 7.89 | M7 | | | | | | CH Cyg std | cuts to 1000/sec | |
| 200s | 5/115 | | | | | | | | | | | |
| | 30/1600 | 4" | \checkmark 7.36 | dk5 | | | | | | std vel | cuts to 2600/sec -630 \pm 0.2 kms/sec | |
| 200s | 39x39 pixels | poor | \checkmark 7.36 | dk5 | 4 frames | semicloudy | | | | Seeing test | med wnw breeze Dome West cloud at end | |
| | 4/100 | 3" | 210 | | | | | | | | < 4 cuts/sec/pixel @ H beta | |
| 200s | 10/500 | 5" | prob 24 | M | | | | | | MIRA pyg | cuts to 1000/sec thick, uniform cloud | |
| 200s | 8/140 | | | | | | | | | | | |
| | 10/500 | 4" | | | | | | | | MIRA pyg | some brief cuts to 1000/sec (thick cloud) | |

57 Pg #2

Date .19.90.NOV.6/7... Observers .T.M.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------------------|--------------------------------|--------------|---------------------|-------------------------------|-----------------------|-------------------|-------------|---------------------------------|--------|
| FIT00 | 710.MK1 Comp | | | 23 02 | | | ND 0.2 | FeA A=1/2 | 200s |
| 711 | HD 15318 | 02 22.8 | +08 14 | 23 08 | 23 20 30 | 00 20 E | | | |
| 712 | Comp | | | | | | ND 0.2 | FeA A=1/2 | 200 |
| 713 | SKY (cloud) | [02 22.8 | +08 14] | 23 29 | 00 09 30 | | W | [not too interesting at all] | |
| 714 | Flat (on timer) | platform | | 00 40 | | 0 0 | ND=20 | TUNG A=1/4 | 10,800 |
| see next page | | | | | | | | | |
| T.M. | CCD CASS MOUNT (using CCD pgm) | | | Dome turned west before start | | | | | |
| CCF01PIF | CCF Flexure TESTS | NOV 7/90 | | 19 48 | | 02 00 W | +40° | FeNe | 2 sec |
| CCF04PIF ² | | | | 20 05 | | 03 00 W | +40° | | |
| CCF05PIF ³ | | | | 20 10 | | 04 00 W | +40° | | |
| 06 | | | | 20 15 | | 05 00 W | +40 | | |
| 07 | | | | 20 19 | Dome moves 1st | 05 00 W | +20° | | |
| 08 | | | | 20 23 | | 04 00 W | +20° | | |
| 09 | | | | 20 26 | | 03 00 W | +20° | | |
| 040 | | | | 20 29 | | 02 00 W | +20 | | |
| 0011 | | | | 20 33 | | 01 00 W | +20 | | |

Spectr. Temp. ...

Focus.....

Spectr. Temp.

Exp. Mtr. Seeing

1/1300 4"

3/15

1/1400

Ba.

All movements
then us

530

Spectr. Temp. Dome Temp./Hum. +1°C ... 77% Transparency Conditions ... Cloudy now ... 58

Focus
Spectr. Temp. Dome Temp./Hum. +1°C ... 76%

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | E.H. | Program | Remarks | Quality |
|--|--------|-----------|----------|---|--------------|--------|----------|------|-------------|--|------------------|
| 4 | B | | | FF PTS | 1800/50.8 | BS | 4820Å | B | | | |
| 15 | 4" | B 4.22 | B9.5 III | | | | | | Sp Phot Std | * cuts 200 → 1800/sec in & out of thick cloud Ended by solid cloud | |
| 3 | | | | very hard to see HD 15318 through cloud | | | | | | * Thick cloud 2 2x Etched circle diam N of FF PTS ← maybe 5 or 6 Em lines at blue end | |
| Backed up on 315" to FIT00705.mki - → FIT00714.mki | | | | | | | | | | [on Perseus to 714 mki, Nov 7/90 | |
| (Hr Angle) All movements made gradually, ^{by hand wheel} slower | | | | | | | | Hα * | 1ci | H = 85.6° Dome T = +33°C | |
| then usual sets to objects. | | | | | | | | | 2 | | |
| 530 | 0 | 10 | 1024 | 7 | 1 | CCDFMT | | 3 | | * Wave length | |
| FOR ALL | | | | | | | | | 4 | | probably ≈ 8500Å |
| | | | | | | | | | 5 | | T ₄ |
| | | | | | | | | | 6 | | Nov 15/90 |
| | | | | | | | | | 7 | | |
| | | | | | | | | | 8 | | |

59

Date 1990 Nov 7 Wed Observers KK

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|--|---------------------|--------------|---------------------|-------------------------|--------------------------|-------------------|-------------|---------------------------|----------------|
| CCP001 | Hartmann test | | stellar | | | | | FeNe/clear | 2 ^s |
| CCP002 | " | | comparison | | | | | " | 2 ^s |
| Nov 7/8 Cont of previous pages Flexure Tests | | | | | | | | | |
| CCF12PIF | Flexure test | | | 20 ^m 36 | | 0000 | +20° | FeNe clear | 2 ^s |
| 13PIF | | | | 20 42 | Dome moved before exp | 01 E | +20° | " | 2 ^s |
| 14PIF | | | | 20 46 | | 01 E | +40° | " | 2 ^s |
| 15PIF | | | | 20 49 | | 00 | +40° | | 2 |
| 16PIF | | | | 20 53 | | 00 | -10° | | 2 |
| now CCD used same night NOV 7/8 C gain = 0 | | | | | | | | | |
| CC00001.FTS | BIAS(4) | | | 21 08 | | | | | |
| 2 | BIAS(4) DARK 15m | | } DARK BAT 1ci | 21 10 | | | | | |
| 3 | DARK BIAS(4) | | | 2ci | | | | | |
| 4 | DARK BIAS | | | 3ci | | | | | |
| 5 | DARK 15m | | | 4ci | ~ 21 40 | | | | |
| | | | | | | | | | |

Spectr. Temp. ...

Focus 4.9

Spectr. Temp. ...

Exp. Mtr. Seeing

Spectr. Temp. Dome Temp./Hum. $+3.8^{\circ}$

Transparency Conditions ①

Focus 4.95

Spectr. Temp. Dome Temp./Hum.

0 cgain

| Expansion ter Exp. | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/ Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|--------------------------|-----------|--------|--------------|-----|-------|------------------|-----------|---------------------|------|---------|----------------------------|---------|
| 2 ^s | | | | | BC | 830/4200 | 250 μ | CCD | | | | |
| 2 ^s | | | | | | | | | | | | |
| 2 ^s | | | | | | | | | | | | |
| 2 ^s | | | | | | | | | | | | |
| 2 ^s | | | | | | | | | | | | |
| 2 ^s | | | | | | | | | | | | |
| 2 ^s | | | | | BC | 830/4200* | 250 μ | 530 ^{Hx} O | 10 | 1024 7 | 1 CCD FMT | |
| | | | | | | | | | | | *G = 4210 on Sp controller | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
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Note: λ prob a 8500 Å for All.

61

Wed Thurs

Emulsion Batches:

Date 1.9.90 NOV. 7/8... Observers J.n.....K.K. p.kano..in

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination Filters | Comparison | | Exp. Mtr. | Seeing |
|-----------|-------------------------|--------------|---------------------|-------------------------|--------------------------------------|---------------------------|------------------------|---------------|----------------|-----------|------------|
| | | | | | | | | Type/Filter | Exp. | | |
| CC00006 | ^{PTS} Comp 5ci | | | ^{or} 22 | | | ORANGE | Fene clear | 2 ^s | | 0 |
| CC00007 | HD 8779 6ci | 01 21.4 | -00 55 | 22 16 | 22 26 | 00 09E | ORANGE | | 10 min | 2500 | 51 poor |
| CC00008 | HD 8779 7ci | " | " | 22 31 | 22 48 | 00 12W | ORANGE | | 24 min | 3900 | " |
| 9 | Comp 8ci | | | 22 54 | | | ORANGE | Fene clear | | | |
| 10 | HD 8779 8ci | 01 21.4 | -00 55 | 22 59 | 23 08 20 | 00 33W | ORANGE in beam | | 9 min | 1500 | poor * |
| 11 | Comp 9ci | | | 23 22 | | | ORANGE | | | | |
| 12 | FLAT 10ci | | | | | $\delta + 10^\circ$ 00 | ORANGE +ND20 | Tung H=1/2 | 60s | | |
| 13 | FLAT 11ci | | | | | 00 | " | " | 120s | | |
| 14 | BIAS (4) 1ci | Lights | OUT | 00 39 | [looks like CC00014 was not written] | | | | | | |
| 15 | BIAS (4) 1ci | | | 00 40 | | | | | | | |
| 16 | DARK 15m 2ci | | | | | | | | | | |
| 17 | BIAS (4) 3ci | | | | | | | | | | |
| 18 | DARK 15m 4ci | | | | | | | | | | |
| | <u>re clamp bridge</u> | | | | | | | | | | |
| 19 | Hartmann - compamin | | | | | | | | | | |
| 20 | Hartmann stellar | | | | | | | | | | |
| | | | | $T = 2.7^\circ C$ | $F = 5.72$ | | | | | | |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

Spectr. Temp. Dome Temp./Hum. $+2^{\circ}\text{C} \dots 82\%$

Focus

Spectr. Temp. Dome Temp./Hum. $+1^{\circ}\text{C} \dots 81\%$

Transparency Conditions *PARTIAL CLOUDY* (2)

530 0 10 1224 7 1 CCD FMT

stellar image guided on RH slit *mean*

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. Slit (L or R) | Program | Remarks | Quality |
|-----------|---------|-----------|-----|---|--------------|---------------|------------|--------------------|---------|--|---------|
| | 0 | CGAIN | | CCD CASS | 830 | 500 μ ble | H α | | | in sky on LHS slit | ADCU |
| 2500 | SI poor | V 6.4 | gKO | | | | | RH | std vel | Rack 12,00 for Both | 2200 |
| 3900 | " | " | " | | | | | RH | " | Slits max on stellar signal with exp meter | 3500 |
| 1500 | poor * | V 6.4 | gKO | (* slit length & seeing Dia & Length of slit) | | | | LH | std vel | CCD Temp = -129. Rack 12,100 equin star on RH slit. | 3000 |
| | | | | | | | | | | Topup after Flats T = -131C | 6000 |

Note Wavelength most likely $\approx 8500 \text{ \AA}$, not H α .
Th nov 15/90

63

Thurs / Fri

Date 1990 Nov 8/9..... Observers Pdr. / Tn.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison | | Exp. Mtr. | Seeing |
|-------------------|---------------------|-----------------------------------|---------------------|-------------------------|-----------------------|-------------------|---------------------|-------------|------|-----------|--------|
| | | | | | | | | Type/Filter | Exp. | | |
| CC000 | BIAS(4) | CC00021.FTS | | | | | | | | | |
| 21.PPF | BIAS(4) | lost BIAS(4) with CCD2 | | 17 45 | Dome | 19:52 | after | 30.FTS | | | |
| 22.FTS | DARK 15m | CC00022.FTS lost | BIAS(4) | | | | | | | | |
| 23.PIF | BIAS(4) | CC00023.FTS with CCD | DARK | | | | | | | 1200 | |
| 24.PIF | DARK 15m | CC00024.FTS | BIAS(4) | | | | | | | | |
| 25.PIF | Comp | | | 18 11 | | | FeNe clear | OG 550 | 2s | | |
| CC00027.FTS | 26.PIF HD 194071 | 20 18.5 | +27 55 | 18 16 | 18 30 | 01 03 W | | GG14 | | 800 | poor |
| ? 27.FTS | Comp | written | | 19 10 | | | FeNe clear | OG 550 | 2 | | |
| 28.FTS | Comp | written | | 18 32 | 18 43 | | FeNe clear | OG 550 | 2s | | |
| 29.FTS | HD 194071 | 20 18.5 | +27 55 | 19 11.5 | 19 46 | 2 17 W | | GG14 | | | |
| 30.FTS | Comp | | | | | | FeNe clear | OG 550 | 2s | | |
| 31.FTS | Comp | | | | | | " | " | " | | |
| 32.FTS | HD 216899 | 22 51.7 | +16 02 | 20 0430 | 20 4330 | 00 41 W | Dee Prism +16 37 | GG14 | | 1200 | |
| 33.FTS | Comp | | | | | | FeNe clear | OG 550 | 2s | | |
| 34.FTS | Comp | | | 20 51 | | | " | " | 2s | | |
| 35.FTS | HD 1326A | 00 12.7 | +43 27 | 20 5330 | 21 14 | 00 09 E | | GG14 | | 1200 | ok |

Spectr. Temp. Dome Temp./Hum. $+0.6^{\circ}\text{C}$ 67% Transparency Conditions ... Clear - Hazy 64

Focus

Spectr. Temp. Dome Temp./Hum. 440 0 32 1024 21 CCD FMT man (ADCU)

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|----------------|--------|-----------|---------|-------------|--------------|-------------|------------|----------------|-----------|---|---------|
| | | | | CCD CASS | 830/G4210 | 250u 061 | H α | 1 | | Topup @ 18 T=-1025 | |
| | | | | | | | | 2 | | | |
| | | | | | | | | 3 | | | |
| | | | | | | | | 4 | | | |
| | | | | | | | | 5ci | | | |
| 800 | poor | ✓ 8.13 | G8 III | | | | | 6ci | std vel | RH slit | 300 |
| | | | | | | | | 7ci | | CCD2 brought in | |
| 800 | | | | | | | | 8ci | | | |
| | | ✓ 8.13 | G8 III | | | | | 2ci | std vel | RH slit (steller) | |
| | | | | | | | | | | | |
| 1200 | | ✓ 8.65 | d m 2.5 | | | | | | Asm Sp-KK | Getting V Hazy RH slit Field drawn in Book | 700 |
| | | | | | | | | | | | |
| 1200 | OK | ✓ 8.07 | MIE | | | | | | Hsm Sp-KK | RH slit | 1100 |

65 #2

Date 1990 NOV 8/9 Observers T. n. / P. d. r.

Emulsion Batches:

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Spectr. Temp. ...

Focus.....

Spectr. Temp.

| 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. |
| 36.FTS | Comp | | | | | | FeNe clear | OG 550 | 2s |
| 37.FTS | HD 1326B | 00 12.7 | +43 27 | 21 18 40 | 21 54 30 | 00 32 W | GG 14 | GG 14 | |
| 38.FTS | Comp | | | | | | FeNe clear | OG 550 | 2s |
| 39.FTS | Comp | | | | | | " | " | 2s |
| 40.FTS | HD 3765 | 00 35.3 | +39 40 | 22 02 20 | 22 25 | 00 40 W | GG 14 | GG 14 | |
| 41.FTS | Comp | | | | | | FeNe clear | OG 550 | 2s |
| 42.FTS | Comp | | | | | | FeNe clear | OG 550 | 2s |
| 43.FTS | HD 9138 | 01 24.9 | +05 38 | 22 38 30 | 22 49 | 00 14 W | GG 14 | GG 14 | |
| 44 | Comp | | | | | | FeNe clear | OG 550 | 2s |
| 45 | Comp | | | 23 48 | | | " | OG 550 | 2s |
| 46 | HD 8779 | 01 21.4 | -00 55 | 23 49 | 00 06 | 1 35 W | GG 14 | GG 14 | |
| 47 | Comp | | | | | | FeNe clear | OG 550 | 2s |
| 48 | Comp | | | 00 24 | | | FeNe clear | OG 550 | 2s |
| 49 | HD 12029 | 01 53.0 | +28 54 | 00 29 30 | 00 54 | 1 51 W | GG 14 | GG 14 | |
| 50 | Comp | | | | | | FeNe clear | OG 550 | 2s |

Exp. Mtr. Seeing

230 550

500

400 500

750 550

Spectr. Temp. Dome Temp./Hum. -0.2°C 72% Transparency Conditions .. Hazy 66.

Focus

Spectr. Temp. Dome Temp./Hum.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|----------------------|-----------------------|-------|-------------|----------------|-----------|----------|------|-----------|------------------------------|---------|
| | | | | CCD CASS | 830/15 4210 | 250 μ | 172 | | | | |
| 230 | 5050 | \checkmark 11.04 | M6V | | | | | | Asm Sp Hk | Too Hazy, Prob too faint too | 300 |
| 500 | | \checkmark 7.36 | dk5 | | | | | | std vel | v cloudy | |
| | | \checkmark 4.84 | K4II | | | | | | std vel | v cloudy | |
| 4000 | \checkmark POOR | \checkmark 6.41 | gk0 | | | | | | std vel | part cloudy | 1200 |
| 2950 | 5050 | \checkmark 7.80 | K2III | | | | | | std vel | | |

61 #3

Date 1990 NOV 8/9 Observers Pdr/Tn

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|------------------------------|--------------|------------------------|-------------------------|-----------------------|-------------------|---------------|---------------------------|------|
| 51.FTS | FLAT | | Dec $\approx 29^\circ$ | 0105 | | 00 | TUNG | OG550 ND20 | 60s |
| 52.FTS | FLAT | | Dec $\approx 29^\circ$ | 0111 | | 00 | " | " | 90s |
| 53.FTS | FLAT | | Dec $\approx 0^\circ$ | | | 00 | " | " | 60s |
| 54.FTS | BIAS (4) | | | 0124 | | | | | |
| 55.FTS | DARK 15m | | | | | | | | |
| 56.FTS | BIAS (4) | | | | | | | | |
| 57.FTS | DARK 15m | | | | | | | | |
| 58.FTS | HDM +53935 (Comp) | | | | | | FeNe clear | OG550 | 2s |
| 59.FTS | HDM +53935 | 0532.7 | +5326 | 0215 | 0306 | 0020 W | | GG14 | |
| 60.FTS | Comp | | | | | | FeNe clear | OG550 | 2s |
| CCF00021 | Hartmann - | comp | | | | | | FeNe | 2 |
| CCF00022 | " - | stellar | | | | | | " | " |
| 23 | " | " | | | | | | " | " |
| 24 | " | comp | | | | | | " | " |
| 25 | " | " | | | | | | " | " |
| 26 | " | stellar | | | | | | " | " |

T = +2.4 C

F = 5.75

F = 5.65

F = 5.85

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

A=clear

n

n

200 5850

Spectr. Temp. Dome Temp./Hum. -1.5°C 77% Transparency Conditions *cloudy* 68....

Focus

Spectr. Temp. Dome Temp./Hum. -2°C 76%

| Comparison ter Exp. | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/ Tilt | Slit | Emulsion <i>H₂</i> | P.H. | Program | Remarks | Quality |
|---------------------------|-----------|--------|----------------|-----|-------------|------------------|-----------|----------------------------------|------|-----------|---|-----------------------|
| 60s | A=clear | | | | CCD CASS | 830/GA210 | 250 μ | <i>note</i> Lower slit stronger | | | upper 4600 MAX | ADCU |
| 95s | n | | | | | | | <i>note</i> Lower slit max=7600 | | | upper 6600 MAX | ' |
| 60s | n | | | | | | | | | | | |
| | | | | | | | | | | | Top up @ 0135 T= -102°C | |
| 0 3s | | | | | | | | | | | | |
| A | 200 | 5050 | 970 | dm2 | CCD CASS | 830/GA210 | 250 μ | H ₂ | 1ci | Asm Sp-KK | RH slit on guide view SI Hozy | \approx ADCU 260 |
| 2s | | | | | | | | | | | Image Aqu. Field of Obj I did is DRAWN in BOOK. CARD FIELD was no problem | |
| | | | | | | | | | | | after alignment of Newtonian flat | |
| | | | | | | | | | | | * Note Exp 59.Fts is of an object 25' NW of DM 153 935 Field drawn | |
| | | | | | | | | | | | Much fainter than intended object. | |
| | | | | | | | | | | | Identifies it. | |
| | | | | | | | | | | | Tn Nov 10 | |

69 #1

Mon - Tues

Date 1990. NOV. 12/13 Observers T. J. P. et al.

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|---------------|---------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CCF00027.PIF. | Flexure Tests | | | 20 13 | | 02 00 W | +40° | OG530 A=Clear | 25 |
| 28 | " | | | | | 04 E | +40° | " | 25 |
| 29 | " | | | 20 24 | | 03 E | | | |
| 30 | " | | | 20 26 | | 02 E | | | |
| 31 | " | | | 20 31 | | 01 E | | | |
| 32 | " | | | 20 35 | | 00 | | | |
| 33 | " | | | 20 37 | | 01 W | | | |
| 34 | " | | | 20 41 | | 02 W | | | |
| 35 | " | | | 20 43 | | 03 W | | | |
| 36 | " | | | 20 45.5 | | 04 W | | | |
| 37 | " | | | 21 09 | | 04 W | 00° | | |
| 38 | " | | | 21 11 | | 03 W | | | |
| 39 | " | | | 21 12 | | 02 W | | | |
| 40 | " | | | 21 14 | | 01 W | | | |
| 41 | " | | | 21 15.5 | | 00 | | | |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

Spectr. Temp. Dome Temp./Hum. +1.0° ... 77.8 Transparency Conditions ... Snow 70

Focus

Spectr. Temp. Dome Temp./Hum. CCD FMT [460 0 32 1024 21 CCD FMT]

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|-----|-------------|---------------|-------------------|----------------|------|----------|----------------------------|---------|
| | | | | CCD CASS | 830/* 40.2 | 250 um | H _α | | G = 4210 | Dome moved West after exp | |
| | | | | | | | | 1ci | | | |
| | | | | | | | | 2ci | | | |
| | | | | | | | | 3ci | | | |
| | | | | | | | | 4ci | | Dome moved West after exp | |
| | | | | | | | | 5ci | | | |
| | | | | | | | | 6ci | | Dome moved West after exp | |
| | | | | | | | | 7ci | | | |
| | | | | | | | | 8ci | | Dome moved West after exp | |
| | | | | | | | | 9ci | | | |
| | | | | | | | | 1ci | | Dome moved East before exp | |
| | | | | | | | | 2ci | | | |
| | | | | | | | | 3ci | | | |
| | | | | | | | | 4ci | | | |
| | | | | | | | | 5ci | | | |

71 #2

Emulsion Batches:

Date 1990 Nov 12/13... Observers T.V. / P.dr.....

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|-------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CF00042 | Flexure test | | | 21 17.5 | | 01 E | 00° | OG 550 A-clear | 2s |
| 43 | | | | 21 19 | | 02 E | | | |
| 44 | | | | 21 22 | | 03 E | | | |
| 45 | | | | 21 23,5 | | 04 E | | | |
| | DHAK. BAT started | | | 01 09 | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |
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| | | | | | | | | | |
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| | | | | | | | | | |
| | | | | | | | | | |

Spectr. Temp. ...
Focus
Spectr. Temp.

Exp. Mtr. Seeing

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions ... *C. cloudy... mostly... 72*

Focus

Spectr. Temp.

Dome Temp./Hum.

Comparison
Exp.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|--|--------|-----------|-----|-------|--------------|------|----------|------|---------|----------------------------|---------|
| | | | | | | | | 6a | | | |
| | | | | | | | | 7a | | Dome moved East after exp. | |
| | | | | | | | | 8a | | | |
| | | | | | | | | 9a | | | |
| <p><u>Note</u> I can see an obvious γ shift between 1c & 9c. T_{γ} primarily from 4 hrs W \rightarrow meridian (i.e. γ shift)</p> | | | | | | | | | | | |

Bpg #1

Date Nov 14/15, 1990 Observers Jn./Pdr.....

Emulsion Batches:

.....

| 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. |
|-----------|-----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC00061 | BIAS (4) | | | 17 33 | | | | | |
| 62 | DARK 15m | | | | | | | DARK.BAT | |
| 63 | BIAS (4) | | | | | | | | |
| 64 | DARK 15min | | | | | | | | |
| 65 | Comp (for Vega) | | | 18 23 | | | | | |
| | Vega | | | 18 25 20 | | | | | |
| CC00066 | HD 172107 (Vega) | 18 33 33 | +38 41 | 19 08 | 19:10 | 3 51 W | | | |
| 67 | Comp (for Vega) | | | | | | | FeNe OG550 | 100s |
| 69 | (Cyg X-1) HDE 226868 | 19 54.6 | +34 56 | 19 34 | 20 26 | 3 46 W | | RG1 | 500 |
| 68 | Comp (1st comp for Cyg X-1) | | | | | | | FeNe OG550 | 100s |
| 70 | Comp at end | | | | | | | " | 100s |
| 71 | HDE 226868 | 19 54.6 | +34 56 | 20 42 | 21 42 | 5 02 W | | | |
| 72 | Comp | | | | | | | FeNe OG550 | |
| 73 | Comp | | | | | | | " | |
| 74 | HD 15318 | 02 22.8 | +08 01 | 21 56 | 22 25 | 00 45 E | | RG1 | 850 |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

650

59400

500

560

850

Spectr. Temp. Dome Temp./Hum. $4^{\circ}\text{C} / 72\%$ Transparency Conditions *Some clouds* 74

Focus

30C @AIN

Spectr. Temp. Dome Temp./Hum.

CCDFMT [448 0 32 1024 21] cont ADCU

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emission | P.H. | Program | Remarks | Quality | |
|-----------|--------|-----------|---------|-------------|------------------------------|------|----------|------|-------------|---|---|--|
| | | | | CCD CASS | 831/ 44.5 44.0 | * | 10,100 Å | | | * dbl window slit Star guard in RH window | C=5300 T = ≈ 80 FOR IR WORK | |
| 6600 | | | | | | | | | | (Note in searching wrong λ region) (Absorption lines seen in Vega spectro ≈ 12000) | | |
| 59400 | | V=0 | A0V | | | | | | | Note (now 22) In Grating angle may have been 49.5° for ≈ 12000 Å (Actually another order blue of this region) | | |
| 500 | | B=9.78 | 09.7Iob | | 831/44.0 | | | | | cloud at end | 220 | |
| 560 | poor | B=9.78 | 09.7Iob | | | | | | | PART cloudy | 220 | |
| 7800 | | V=4.28 | B9.5III | | | | | | Sp Phot Std | | 330 | |

15 #2

Date . Nov. 14/15 (cont'd) Observers Tm / Pdr

Emulsion Batches:

.....

Spectr. Temp. ...
 Focus.....
 Spectr. Temp.

| 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. |
|---------------|--------------------|-------------------------------|----------------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| CC00075 | Comp | | | | | | | FeNe OG550 | |
| 76 | Comp | | | | | | | Fe Ar OG550 | |
| 77 | Flat | | | 22 42 | | | A=1/4 | Tung OG550 | 50sec |
| 78 | Flat | | | 22 48 | | | A=1/2 | " | 10sec |
| 79 | BIAS(4) | | | 22 58 | | | | | |
| 81 | HD 209975 | 22 02.1 22 02.5 | +61 48 62 14 | 23 32 30 | 00 17 | 5 31 W | | RG1 | |
| 80 | Comp Before #81 | | | 00 25 | | | clear | FeNe OG550 | |
| 82 | Comp after exp #81 | | | 00 22 | | | n | FeNe OG550 | |
| 83 | HD 209975 | 22 02.1 | +61 48 | 00 27 | 00 42 41 | 5 57 W | | RG1 | |
| 84 | Comp | | | 00 48 | | | | Fe Ne OG550 | |
| 85 | Dark | | | 00 52 30 | | | | | |
| 86 | Comp | | | | | | | Fe Ne NO FILTER | 15sec |
| 87 | DM +53 935 | 05 33 12 | +53 26 | 03 00 30 | 03 58 | 01 36 W | no filter | | |
| 88 | Comp | | | | | | | FeNe clear | 15s |
| 89 | DM +53 935 | " | " | 04 02 | 05 04 | 02 43 W | no filter | | |

Exp. Mtr. Seeing
 6000
 8300
 60
 1200

Spectr. Temp. Dome Temp./Hum. $+5^{\circ}\text{C}$ 73% Transparency Conditions ... *part cloudy* ... 76..

Focus

Spectr. Temp. Dome Temp./Hum.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|----------------------|----------------------|---------|-------|--------------|------|----------|--------|-------------|---------------|---------|
| | | | | | 831/44.0 | | | | | | |
| | | | | | " | | | | | | |
| | | | | | " | | | | | | 3000 |
| | | | | | " | | | | | | |
| | \checkmark poor | \checkmark 5.10 | | | " | | | | So | | |
| 6000 | \checkmark poor | \checkmark 5.10 | 09.5 Ib | | " | | | | Sp Phot Std | cloudy partly | |
| | | | | | " | | | | | | |
| | | | | | " | | | | | | |
| 8300 | | | | | " | | | | | | 1300 |
| | | | | | " | | | | | | |
| | | | | | " | | | | | | |
| | | | | | " | | | | | | |
| | | | | | 1800/47.4 | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| 1100 | poor | \checkmark 9.78 | dm2 | | 560 | 0 32 | 1024 21 | CCDFMT | | | 270 |
| | | | | | | | | | | | |
| 1200 | \checkmark poor | \checkmark 9.78 | dm2 | | | | | | | | 270 |

01 30
Topup during DARK
G = 50 20

T = -84°C @ 01 30
5232Å = 47.4
T = -102°C
5170Å = 47.2

T1 #3

Date 1990 Nov 14/15..... Observers Pdr. Jh.....

Emulsion Batches:

.....

| 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. |
|-----------|----------|---------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| 90 | Comp | | | | | | | FeNe 26552 | 15sec |
| 91 | Comp | | | | | | | n | 15sec |
| 92 | HD 65583 | 07 54.3 | +29 31 | 05 14 | 05 32 | 00 51 W | | | |
| 93 | Comp | | | | | | | FeNe | 15s |
| 94 | Comp | | | | | | | " | |
| 95 | HD 66141 | 07 57.1 | +02 36 | 05 47 | 05 51 40 | 01 10 W | | | |
| 96 | Comp | | | | | | | FeNe | 15s |
| 97 | Comp | | | | | | | FeNe | 15s |
| 98 | HD 92588 | 10 36.3 | -01 13 | 06 07 | 06 20 30 | E | | | |
| 99 | Comp | | | | | | | FeNe | 15s |
| 100 | Flat | | | | | | | A=1/8 Tung | 40S |
| 101 | Flat | | | | | | | A=1/4 Tung | 30S |
| 102 | Flat | | | | | | | A=1/4 | 60S |
| 103 | bias Ax | | | | | | | | |
| 104 | 15m dark | | | | | | | | |
| 105 | bias Ax | | | | | | | | |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

5500 ✓
poor

1500 ✓
poor

5500 ✓
poor

5500 ✓
poor

7A

Date Nov 15/16, 1990 Observers KK/Pdr

Emulsion Batches:

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|----------------------|--------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|---------------------|
| CC 00 106 | Comparison (test) | | | | | | | Ti Ne | 30 ^s |
| 107 | " " | | | | | | | Fe A | 60 ^s |
| 108 | NGC 7027 | | | | 18 31 | | | | |
| 109 | " | | | 18 33 | | | | | |
| 110 | Bias | | | | | | | | |
| 111 | NGC 7662 | | | 19 00 | 19 06 | | | | 360 ^s |
| 112 | " " | | | 19 09 40 | | | | | 90 ^s |
| 113 | " " | | | 19 12 30 | | | | | 90 ^s |
| 114 | " " | | | 19 31 51 | | | | | 90 ^s |
| 115 | " " | | | 19 35 52 | | | | | 90 ^s |
| 116 | " " | | | 19 39 20 | | | | | 90 ^s B&W |
| 117 | " " | | | 19:44 | 19:50 | | | | 360 ^s |
| 118 | GK Per | | | 20 40 35 | 20 44 52 | | | | 240 ^s |
| 119 | bias AX | | | | | | | | |
| 119a | mean of four flats | | | | | | | Tung 1/16 | 5 ^s |

Spectr. Temp.
 Focus
 Spectr. Temp.
 Exp. Mtr. Seeing

Spectr. Temp. Dome Temp./Hum. Transparency Conditions *Clear* 80

Focus

Spectr. Temp. Dome Temp./Hum.

| anion Exp. | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/ Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|------------------|-----------|--------|--------------|-----|-------|------------------|----------|----------|------|--------------|------------------------------|------------|
| 30 ^s | | | | | | 1800/4910 | 250μ | CCD | | | 445 0 32 1024 2 1 | |
| 60 ^s | | | | | | " | " | " | | | 30 gain | |
| | | | | | | 1800/4880? | slitless | | | Exp Ncb / KK | | 865 |
| | | | | | | | " | | | | | |
| | | | | | | | " | | | | | |
| 360 ^s | | | | | | | " | | | " | 90 c gain | 2200 |
| 90 ^s | | | | | | | " | | | " | | |
| 90 ^s | | | | | | | " | | | " | | |
| 90 ^s | | | | | | | " | | | " | Tlescope reverse mode | |
| 90 ^s | | | | | | | " | | | " | | |
| 360 ^s | | | | | | | " | | | " | | only stamp |
| 240 ^s | | | | | | | " | | | | | |
| | | | | | | | " | | | | | |
| 5 ^s | | | | | | | " | | | | back to 30 gain | 900 |
| | | | | | | | | | | | 550 0 25 1024 21 ccd fmr | |

81

Date Nov. 15/16 1990 Observers Plr/Huang

Emulsion Batches:

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

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|--------------------|------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|----------------|---------------------------|------------|
| CC 0120 | Comparison | | | | | | F13 stop in | FeAr A=1/4 | X 200 s |
| | | | | 22:04:25 | | | | | |
| CC00120 | FTS Comparison | | | 23:03:00 | | | | FeAr A=1/4 | X 200 s |
| CC00120 | FTS BM CASS | 0048.6 | +63.33 | 23:03:00 | 00:15:15 | | | | |
| CC0122 | FTS Comparison | | | | | | | FeAr A=1/4 | X 200 s |
| CC0123 | FTS Flat | | | | | | | Tung A=1/2 | X 30 s |
| CC00124 | FTS Bias (avg 4) | | | | | | | | |
| CC00125 | Comp | | | | | | no filter | FeAr clear | 60 s |
| CC00126 | Flat | | | | | | | Tung A=1/2 | 5 s |
| CC00127 | Bias (avg 4) | | | | | | | | |
| CC00128 | V471 Tau | 03 44.7 | +16 57 | 02 03 30 | 02 33 30 | | | yellow | 30 min. |
| CC00129 | FeAr | | | | 02 42 | | | | 60 s. |
| CC00130 | V471 Tau | 03 44.7 | +16 57 | 02 46 00 | 03 20 | 2 53 W | | | 34 min |
| CC00131 | FeAr | | | | | | | | 60 s |
| CC00132 | V471 Tau | 03 44.7 | +16 57 | 03 37 | 04 07 | 3 40 W | | | |

Spectr. Temp.

Focus

Spectr. Temp.

Exp. Mtr. Seeing

300.0 s

100 ?

600

85

Date Nov 15/16 Observers Mki/Schan/Pdr

Emulsion Batches:

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

Spectr. Temp.

Focus

Spectr. Temp.

| 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. |
| CC00133 | Comp. | | | | | | clear | Fe Ar A=1/2 | 60s |
| 134 | V471 Tau | 03 44.7 | +16 57 | 04 20 | 04 50 | 4 21 W | | | 30 mi. |
| 135 | Comp | | | | | | | Fe Ar A=1/2 | 60s |
| 136 | Flat | | | | | | Tung A=1/2 | clear | 5s |
| 137 | Comp | | | | | | | Fe Ar clear | 60s |
| 138 | HD62509 | 07 39 12 | 20 16 00 | 05 30 | 05 30 39 | 01 11 W | | | 39s |
| 139 | Comp | | | | | | | | 60s |
| 140 | Comp | | | 05 50 | | | | | 60s |
| 141 | HD87901 | 10 03 03 | 12 27.3 | 05 58 04 | | | | | 60s |
| 142 | HD87901 | | | 06 03 31 | | | | | 30s |
| 143 | Comp | | | 06 09 | | | | Fe Ar clear | 60s |
| 144 | Flat | | | | | | | Tung A=1/2 | 5s |
| 145 | Bias (Aug 4) | | | | | | | | |
| 146 | Dark | | | | | | | | 3600s |
| L 147 | Flat | | | | | | | Tung A=1/2 | 5s |

Exp. Mtr. Seeing

600 d/s

3000

Spectr. Temp. Dome Temp./Hum. $10^{\circ}\text{C} / 82.9\%$ Transparency Conditions *Clear* 84

Focus

Spectr. Temp. Dome Temp./Hum.

all copied to optical disk

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|---------|-----------|-----|-------------|--------------|-------------------|----------|------|---------|--------------------------------|---------|
| | | | | CCD Cass | | long 250 μ | | | | $T = -99^{\circ}2$ | |
| 60s | | | | | | | | | | | |
| 30min | 600 clg | | | | | | | | | | |
| 60s | | | | | | | | | | | |
| 5s | | | | | | | | | | | |
| 60s | | | | | | | | | | Top-up ($T \sim 97^{\circ}$) | |
| 39s | 20000 | | | | | | | | | R.V. Standard. | 7700 |
| 60s | | | | | | | | | | | |
| 60s | | | | | | | | | | Sp Phot Standard | |
| 60s | | | | | | | | | | | 7000 |
| 30s | | | | | | | | | | | 3000 |
| 60s | | | | | | | | | | | |
| 5s | | | | | | | | | | | 8000 |
| 3600 | | | | | | | | | | | |
| 5s | | | | | | | | | | decker out, full length | unknown |

85

Date Nov 17/18 Observers Schwarz/Millar/Pdr

Emulsion Batches:

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

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|---------------------|---------------|--------------|---------------------|-------------------------|-----------------------|-------------------|--------------|----------------------------------|------|
| CC 00148 | Comp | | | | | | no filter | FeAr A=1/4 | 200s |
| CC 00149 | Pu Vul | 20 16.8 | +21 15 | 20 05 | 20 52.5 | | | | |
| CC 00149 | Bias (avg 4) | | | | | | | | |
| CC 00151 | Comp | | | | | | | FeAr A=1/4 | 200s |
| CC 00152 | Flat | | | | | | | Tung A=1/2 | 20s |
| CC 00153 | Comp | | | | | | | FeAr FeAr Clear | 60s |
| CC 00154 | Pu Vul | | | 21 11.75 | 21 47.5 | | Yellow | | |
| CC 00155 | Comp | | | | | | | FeAr Clear | 60s |
| CC 00156 | Bias (avg 4) | | | | | | | | |
| CC 00157 | Flat | | | | | | | Tung A=1/2 | 5s |
| CC 00158 | Comp. | | | | | | | FeAr Clear | 60s |
| CC 00159 | Flat | | | | | | | Tung. A=1/2 | 5s. |
| CC 00160 | Bias (avg. 4) | | | | | | | | |
| CC 00161 | V471 Tau | 03 44.7 | +16.57 | 23 35.00 | 00:05:35 | $0^h 20^m W?$ | yellow | | |
| CC 00162 | Comp. | | | | | | | FeAr clear | 60s. |

Spectr. Temp.

Focus.....

Spectr. Temp.

Exp. Mir. Seeing

650 cts

360 cts

Spectr. Temp. Dome Temp./Hum. 00/71.0% Transparency Conditions Clear 86

Focus

Spectr. Temp. Dome Temp./Hum.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|-----|-------------|--------------|-----------|----------|------|---------|---|---------|
| 200s | | | | CCD Cass | | 250 μ | | | | 550 0 25 1024 2 1 ccd fmt | |
| 650 ds | | | | | | | | | | G = 4820 H β | |
| 200s | | | | | | | | | | | |
| 20s | | | | | | | | | | | |
| 60s | | | | | 1800/6035 | | | | | G = 6035 H α region Central H α Pixels Saturated | |
| 360 ds | | | | | | | | | | | |
| 60s | | | | | | | | | | | |
| 5s | | | | | | | | | | | |
| 60s | | | | | | | | | | | |
| 5s | | | | | | | | | | | |
| 60s | | | | | | | | | | spectrum shifted dramatically down in the window compared to 4 hrs W in H.A. | |

81

Date Nov 17/18 Observers Pdr/Milas

Emulsion Batches:

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.....

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|----------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| CC00163 | V471TAU | 03 44.7 | +16 57 | 00:15:00 | 00:45:00 | 25.30W | | | 30min |
| CC00164 | Comp. | | | | | | | FeAr Clear | 60s |
| CC00165 | V471TAU | 03 44.7 | +16 57 | 00:53:30 | 01:23:00 | 1 3 40W | | | 30min |
| CC00166 | Comp. | | | | | | | FeAr Clear | 60s |
| CC00167 | V471TAU Bias (Avg. 4) | | | | | | | | |
| CC00168 | flat | | | | | | | Tung. A=1/2 | 5s. |
| CC00169 | V471 Tau | 03 44.7 | +16 57 | 01 39.00 | 02 11 08 | 1 52 W | | | 30min |
| CC00170 | Comp. | | | | | | | FeAr Clear | 60s. |
| CC00171 | V471 Tau | 03 44.7 | +16 57 | 02 22.05 | 02.52:05 | 2 32 W | | | 30min |
| CC00172 | Comp. | | | | | | | FeAr Clear | 60s. |
| CC00173 | V471 Tau | 03 44.7 | +16 57 | 03:01:00 | 03:31:00 | 3 11 42W | | | 30min |
| CC00174 | Comp. | | | | | | | FeAr Clear | 60s. |
| CC00175 | Bias (Avg. 4) | | | 03:42:05 | | | | | |
| CC00176 | V471 Tau | 03 44.7 | +16 57 | 03:42:05 | 04 12:05 | 3 52 57W | | | 30min |
| CC00177 | Comp. | | | | | | | FeAr Clear | 60s. |

Spectr. Temp.

Focus

Spectr. Temp.

Exp. Mtr. Seeing

575

600

740

750

750

855

84

Date .. Nov. 17/18 Observers Pdr./Milas

Emulsion Batches:

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

| 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. |
|--------------------|---------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|--------|
| CC00178 | V471 Tau | 03 44.7 | +16 57 | 04:18:05 | 04:48:05 | 04 29 02W | | | 30 min |
| CC00179 | Comp. | | | | | | | Fe Ar clear | 60 s. |
| CC00180 | Flat | | | | | | | Tung. A-1/2 | 5 s. |
| CC00181 | Comp. | | | | | | | Fe Ar clear | 60 s. |
| CC00182 | Bias (Aug. 4) | | | | | | | | |
| CC00183 | Comp. | | | | | | | Fe Ar clear | 60 s. |
| CC00184 | HD 62509 | 07 32 12 | 28 16 00 | 05:33:40 | 05:34:10 | 01 21 W | | | 30 s. |
| CC00185 | Comp. | | | | | | | Fe Ar clear | 60 s. |
| CC00186 | Comp. | | | | | | | Fe Ar clear | 60 s. |
| CC00187 | | | | 05:56:32 | 05:57:12 | | | | |
| CC00187 | HD 87901 | 10 03 03 | 12 27.3 | 05:56:32 | 05:57:12 | 0:39:33E | | | 40 s. |
| CC00188 | Comp. | | | | | | | Fe Ar clear | 60 s. |
| CC00189 | Bias (Aug. 4) | | | | | | | | |
| CC00190 | Flat | | | | | | | Tung. A-1/2 | 5 s. |
| CC00191 | Dark | | | | | | | | 1 hr |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mir. Seeing

~820

a1

Emulsion Batches:

Date 18/19 Nov Observers LZZ/Pdr

.....

Spectr. Temp.

Focus

Spectr. Temp.

| 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. |
|-------------------|-----------------------|---|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 000192 | Comparison | | | | | | | | |
| 000193 | Tung Flat | | | | | | | | |
| 000192 | Flat | | | | | | | Tung A=1/2 | 60s |
| 000193 | Comparison | | | | | | | Fe Ar clear | 60s |
| 000194 | BD +46° 186 | 0 ^h 45 ^m 1 ^s | 46° 37' 3" | 22:34:30 | 23° 19:00 | 2:01:52W | | Fe Ar clear | 60s |
| 000195 | Comparison | | | | | | | Fe Ar clear | 60s |
| 000196 | Comp | | | | | | | | |
| 000196 | Comp | | | | | | | Fe Ar Clear | 60s |
| 000197 | Bias (Avg. 4) | | | | | | | Tung A=1/2 | 20s |
| 000198 | Flat | | | | | | | | |
| 000199 | HD 7927 | 1 ^h | 57° | 00:22:00 | 00:27:00 | | | | |
| 000200 | Comparison | | | | | | | Fe Ar Clear | 60s |
| 000201 | Comparison | | | | | | | Fe Ar Clear | 30s |
| 000202 | Comparison | | | | | | | Fe Ar Clear | |

Exp. Mtr. Seeing

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.....

Spectr. Temp. Dome Temp./Hum. $-0.08, +84.7$ Transparency Conditions Slightly cloudy
 Focus 92

Spectr. Temp. Dome Temp./Hum. ccdfmt | 570 0 25 1024 2 1

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|-----|------------|--------------|-------|-----------|------|----------------------------|-------------------------|---------|
| | | | | | | | | | | | |
| | | | | | | 250µm | 1800/6035 | | | | |
| 68 | | 10.4 | FI: | CCD CAS | | | | | Hi latitude Supergiants | Dim stars list b=-17 | |
| | | | | | | | | | | | |
| 500 | | 5.00 | F0 | | 1800/6035 | | | | NGC 457 RV | | 3000 |
| | | | | | 1800/6035 | | | | | | |
| | | | | | 1800/4520 | | | | | | |

93

Date 18/19 Nov

Observers JLT/Pdr

Emulsion Batches:

.....

| 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. |
|-----------|-----------------|--|---------------------|-------------------------|-----------------------|--|-------------|---------------------------|------|
| CC00201 | Comparison | | | | | | | FeNe Clear | 60s |
| CC00202 | Flat | | | | | | | Tung A-1/2 | 100s |
| CC00203 | Bias (Avg. 4) | | | | | | | | |
| CC00204 | HD 7927 | 1 ^h 13 ^m 47 ^s | 57° 42' | 01:54:00 | 01:59:00 | | | | |
| CC00205 | HD 7902 | 1 ^h 13 47 | 57° 42' | 02:09:40 | 02:38:00 | ~5 ^h W | | | |
| CC00206 | Comparison | | | | | | | FeNe Clear | 60s |
| CC00207 | Flat | | | | | | | Tung A=1/2 | 100s |
| CC00208 | bias (avg of 4) | | | | | | | | |
| CC00209 | Comparison | | | | | | | FeNe Clear | 60s |
| CC00210 | HD 62509 | 7 ^h 39 ^m .2 | 28° 16' | 03:28:25 | 03:33:25 | ~00 ^h 40 ^m W with red | | | |
| CC00211 | Comparison | | | | | | | FeNe Clear | 60s |
| CC00212 | Comparison | | | | | | | FeNe Clear | 60s |
| CC00213 | HD 29139 | 4 ^h 30 ^m .2 | 16° 19' | 03:54:30 | 03:55:20 | ~03 ^h W | | | |
| CC00214 | Comparison | | | | | | | FeNe Clear | 60s |
| CC00215 | Flat | | | | | | | Tung A=1/2 | 100s |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

~~2000~~

2000

4850

~~300~~

1500

~~300~~

95

Date 18/19 Nov Observers ZLT/PLr

Emulsion Batches:

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Spectr. Temp. ...

Focus

Spectr. Temp. ...

| 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. |
|----------------------------|---------------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----------------|
| CC00216 | Bias (Avg. 4) | | | | | | | | |
| CC00217 | Dark | | | | | | | | 3600 |
| ^{Persus} CCF00046 | Hartmann test - 'comparison' position | | | | | | | PerNe clear | 60 ^s |
| CCF00047 | Hartmann test - 'stellar' position | | | | | | | " | " |
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Exp. Mtr. Seeing

97

Date Nov 19/20 Observers Fds/Pdr

Emulsion Batches:

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Spectr. Temp. ...

Focus

Spectr. Temp. ...

| 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. |
|-----------|---------------------------|--|---------------------|---------------------------------|-----------------------|-------------------|-------------|---------------------------|-----------------|
| ce 01441 | ices | | | | | | | | |
| 01442 | comp | | | | | | | Th Ar | 30 ^s |
| 01443 | MD 172167 ^{vega} | | | 20:14:00 | 20:17:00 | | | No filter | |
| 01444 | comp | | | 20 22 54 | | | | Th Ar | 20 ^s |
| 01445 | comp | | | | | | | Th Ar | 20 ^s |
| ce 01446 | MD 22928' | 03 35 48 | 47 28 04 | 20:34:55 | 20:44:23 | 3 28 E | | No filter | |
| 1447 | comp | | | 20:47:35 | | | | | 20 ^s |
| ce 01448 | MD 22928 | 03 35 48 | 47 28 04 | 20:50:49 | 20:59:26 | 3 05 | | | |
| 1449 | comp | | | | | | | | 20 ^s |
| 1450 | " | | | 21:34:00 21:38:04 | | | | | 20 ^s |
| 1451 | MD 22928 | 03 35 48 | 47 28 04 | 21:35:00 | 21:45:20 | | | | |
| 1452 | comp | | | 21 47:05 | | | | | |
| 1453 | MD 22928 | 03 35 48 | 47 28 04 | 21:47:50 | 21:58:30 | | | | |
| 1454 | comp | | | 2200:00 | | | | | |
| 1455 | comp | | | | | | | | |
| 1456 | MD 34303 | 5 ⁿ 12 ^m 45 ^s | -6° 57' 09" | 22.09:00 | 22 39 12 | 3 3 42 E | | | |

Exp. Mtr.

Seeing

5000

5000

99

(cont'd)

Date ... Nov 19/20 ... Observers ... Fds/Pdr

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CE 01457 | comp | | | | | | | | |
| CE 01458 | comp | | | 22 48 04 | | | | | |
| CE 01459 | HD 22928 | 03 35 48 | 47 28 04 | 22 50 30 | 22:54:54 | | | | |
| CE 01460 | comp | | | 22 58 00 | | | | | |
| CE 01461 | comp | | | 23:02:21 | | | | | |
| CE 01462 | HD 34503 | 5 12 45 | -6 57 09 | 23 08 15 | 23 48 15 | 1 53 E | | | |
| 1463 | comp | | | 23:50:00 | | | | | |
| 1464 | comp | | | 23:54:00 | | | | | |
| 1465 | HD 22928 | 03 35 48 | 47 28 04 | 23 57 03 | 00 07 02 | 00 00 36 | | | |
| 1466 | comp | | | 00 08 08 | | | | | |
| 1467 | comp | | | 00 11 51 | | | | | |
| 1468 | HD 34503 | 05 12 45 | -6 57 09 | 00 15 24 | 00 48 04 | | | | |
| 1469 | comp | | | 45 00 | | | | | |
| 1470 | comp | | | 00 49 04 | | | | | |
| 1471 | HD 22928 | 03 35 48 | 47 28 04 | 00 52 13 | 01:02:13 | | | | |
| 1472 | comp | | | | | | | | |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

2000

101

Date Nov 19/20 (cont'd) Observers Fds/Pdr

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------------|----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|---------------|
| 1473 | comp | | | 01:07:00 | | | | | |
| 1474 | HD 29139 | 04 30 18 | 16 19 30 | 01:10:00 | 01:15:00 | | | | |
| 1475 | comp | | | 01:15:42 | | | | | |
| 1476 | comp | | | 01:19:06 | | | | | |
| 1477 | HD 34503 | 05 12 45 | -06 57 09 | 01:20:20 | 2:06:00 | 00 27 W | | | |
| 1478 | comp | | | | | | | | |
| 1478 | comp | | | | | | | | |
| 1480 | HD 22928 | 03 35 48 | 47 28 04 | 02:28:20 | 02:38:26 | 02 35 W | | | |
| 1481 | comp | | | 02:39:33 | | | | | |
| 1482 | comp | | | 02:47:55 | | | | | |
| 1483 | HD 34503 | 05 12 45 | -6 57 09 | 02:49:35 | 03 29 20 | | | | |
| 1484 | comp | | | 03:30:20 | | | | | |
| 1485 | comp | | | 03:33:34 | | | | | |
| 1486 | HD 22928 | 03 35 48 | 47 28 04 | 03:35:30 | | | | | |
| 1486 | BIAS (4) | | | | | | | | |
| 1487-1491 | 5 Fints @ 200s | | | dec = +47° | MA = 0 | | | | |
| 1492-1496 | 5 Fints @ 200s | | | dec = -60° | MA = 0 | | | | |
| | | | | | | | | 1497 bias x4 | 1499 bias x4 |
| | | | | | | | | 1498 DARK 15m | 1500 DARK 15m |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

103

Date .. Nov. 20/21... 1940 Observers ... Fds/Pdr

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|--|--------------|--------------|---------------------|-------------------------|----------------------------|-------------------|-------------|---------------------------|------|
| cecl501 | Bias (4) | | | | | | | | |
| cecl502 | Bias (4) | | | | | | | | |
| 1503 1504 1505 1506 1507 1508 1509 1510 | 4 flats 220s | dec = | +45° | HA = 0 | sit height = 600 ft = .205 | | | | |
| | 4 flats 220s | dec = | -6° | HA = 0 | " " " | | | | |
| 1511 | comp | | | 18:00:30 | | | | Th-Ar | 20s |
| 1512 | HD 172167 | 18 33 33 | +38 41 | 18:05:00 | 18:08:00 | | | | |
| 1513 | comp | | | 18:09:30 | | | | Th-Ar | 20s |
| 1514 | comp | | | 18:16:05 | | | | Th-Ar | 20s |
| 1516 | HD 22928 | 03 35 48 | +47 28 04 | 18:20:30 | 18:40:30 | E 5° 20 | | | |
| 1517 | comp | | | | | | | Th-Ar | 20s |
| 1518 | HD 22928 | 03 35 48 | +47 28 04 | 18 44 06 | 19 04 06 | 4 56 E | | | |
| 1519 | comp | | | | | | | Th-Ar | 20s |
| 1520 | HD 22928 | 03 35 48 | +47 28 04 | 19 07 15 | 19 27 15 | 4 34 E | | | |
| 1521 | comp | | | 19 03 03 | | | | Th-Ar | 20s |
| 1522 | HD 22928 | 03 35 48 | +47 28 04 | 19 30 03 | 19 49 03 | 4 11 E | | | |
| 1523 | comp | | | | | | | Th-Ar | 20s |

Spectr. Temp. ...

Focus

Spectr. Temp.

Exp. Mtr. Seeing

105

Date Nov. 20/21 Observers Fds/ Pdr

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|-----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 1524 | HD 22928 | 03 35 45 | +47 28 04 | 19 53 | 20 13 | 3 48 E | | | |
| 1525 | comp | | | 20 15 10 | | | | Th-Ar | 20x |
| 1526 | HD 22928 | 03 35 45 | +47 28 04 | 20 16 30 | 20 36 30 | 3 24 E | | | |
| 1527 | comp | | | 20 38 20 | | | | Th-Ar | 20x |
| | comp | | | | | | | | |
| 1528 | HD 22928 | 03 35 45 | +47 28 04 | 20 41 25 | 20 : 01 | | | | |
| 1529 | comp | | | 21 04 27 | | | | Th-Ar | 20x |
| 1530 | comp | | | 21 08 14 | | | | Th-Ar | 20x |
| 1531 | HD 29139 | 04 30 18 | 16 19 30 | 21 12 20 | 21 17 20 | 3 36 E | | | |
| 1532 | comp | | | 21 19 00 | | | | Th-Ar | 20x |
| 1533 | comp | | | 21 22 20 | | | | Th-Ar | 20x |
| 1534 | HD 34503 | 05 12 45 | -60 57 09 | 21 28 20 | 22 28 20 | 3 06 E | | | |
| 1535 | comp | | | 22 30 10 | | | | Th-Ar | 20x |
| 1536 | comp | | | 22 33 35 | | | | Th-Ar | 20x |
| 1537 | HD 22928 | 03 35 45 | +47 28 04 | 22 37 10 | 22 46 40 | | | | |
| 1538 | comp | | | 22 49 04 | | | | Th-Ar | 20x |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mir. Seeing

2"

3

Spectr. Temp. Dome Temp./Hum. 2.2/87.8 Transparency Conditions clear 106.

Focus

Spectr. Temp. Dome Temp./Hum.

panson
r Exp.
20s
20s
20s
20s
20s
20s
20s
20s

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | Slit P.H. Height | Program | Remarks | Quality |
|-----------|--------|-----------|--------|-------|--------------|--------------|---------------|------------------|------------|-----------------|---------|
| | 2" | 3.00 | BS III | | 18.60 | 50m -.269 | X-55 -4656 | 400m -.275 | Fds - 5 Pa | | |
| | | 3.00 | BS III | | | | | | Fds - 5 Pa | | |
| | | 3.00 | BS III | | | | | | Fds - 5 Pa | | |
| | | 0.85 | R2 III | | | | | | STD uel | | |
| | | 3.60 | BS III | | | | | | Fds - 2 pu | | |
| | | 3.00 | BS III | | | | | | Fds - 5 Pa | eye not washed! | |

107

(cont'd)

Date ~~Nov 19/80~~ Nov 20/71 Observers Fds/Pdr

Emulsion Batches:

.....

| 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. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 1539 | comp | | | 22 51 53 | | | | Th-Ar | 20s |
| 1540 | HD 29139 | 04 30 18 | 16 19 30 | 22 54 35 | 22 56 35 | | | | |
| 1541 | comp | | | 22 57 47 | | | | Th-Ar | 20s |
| 1542 | comp | | | | | | | Th-Ar | 20s |
| 1543 | HD 34503 | 05 12 45 | -6 57 09 | 23 02 20 | 23 32 20 | 02 03 E | | | |
| 1544 | comp | | | 23 33 38 | | | | Th-Ar | 20s |
| 1545 | comp | | | 23 38 20 | | | | Th-Ar | 20s |
| 1546 | HD 2928 | 03 35 45 | +47 28 04 | 23 40 20 | 23 50 20 | 0 10 E | | | |
| 1547 | comp | | | 23 51 14 | | | | Th-Ar | 20s |
| 1548 | comp | | | 23 54 48 | | | | Th-Ar | 20s |
| 1549 | HD 29139 | 04 30 18 | 16 19 30 | 23 56 45 | 00 00 00 | | | | |
| 1550 | comp | | | 00 01 08 | | | | Th-Ar | 20s |
| 1551 | comp | | | 00 03 50 | | | | Th-Ar | 20s |
| 1552 | HD 34503 | 05 12 45 | -6 57 09 | 00 06 30 | 00 41 30 | | | | |
| 1553 | comp | | | 00 43 30 | | | | Th-Ar | 20s |
| 1554 | comp | | | 00 48 50 | | | | Th-Ar | 20s |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

Spectr. Temp.

Dome Temp./Hum. 1.6/89.6

Transparency Conditions Clear 108

Focus

Spectr. Temp.

Dome Temp./Hum.

Focus = 222 f

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|------------------------|--------|-------|--------------|------|----------|------|--------------|---------|---------|
| 205 | | 0.85 | K2III | | | | | | Std Uel | | |
| 205 | | 3.60 BS III | | | | | | | | | |
| 205 | | 3.60 | BS III | | | | | | Fds - Cpu. | | |
| 205 | | 3.00 | BS III | | | | | | Fds - S Pen. | | |
| 205 | | 0.85 | K2III | | | | | | STD-Uel | | |
| 205 | | 8.60 | BS III | | | | | | Fds - Cpu. | | |

109

Date .. Nov. 20 / 21
Date .. Nov. 20 / 21 Observers ... F. J. S. / P. A. S.

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 1555 | HD 22928 | 03 35 45 | 47 28 04 | 00 52 40 | 01 07 42 | | | | |
| 1556 | comp | | | 00 08 30 | | | | Th-Ar | 20s |
| 1557 | comp | | | 01 12 37 | | | | Th-Ar | 20s |
| 1558 | HD 29139 | 04 30 18 | 16 19 30 | 01 14 00 | 01 17 00 | | | | |
| 1559 | comp | | | 01 17 45 | | | | Th-Ar | 20s |
| 1560 | comp | | | 01 19 50 | | | | Th-Ar | 20s |
| 1561 | HD 34503 | 05 12 45 | -6 57 08 | 01 21 15 | 02 01 15 | | | | |
| 1562 | comp | | | | | | | Th-Ar | 20s |
| 1563 | comp | | | 02 06 10 | | | | Th-Ar | 20s |
| 1564 | HD 22928 | 03 35 45 | 47 28 04 | 02 08 35 | 02 23 35 | 2 24 W | | | |
| 1565 | comp | | | 02 24 26 | | | | Th-Ar | 20s |
| 1566 | comp | | | 02 27 15 | | | | Th-Ar | 20s |
| 1567 | HD 29139 | 04 30 18 | 16 19 30 | 02 28 30 | 02 32 30 | 1 39 W | | | |
| 1568 | comp | | | 02 33 30 | | | | Th-Ar | 20s |
| 1569 | comp | | | 02 36 37 | | | | Th-Ar | 20s |
| 1570 | HD 34503 | 05 12 45 | -6 57 09 | 02 58 10 | 03 28 10 | 1 53 W | | | |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

Spectr. Temp. Dome Temp./Hum. Transparency Conditions ... *clear... (night) clear...
 Focus
 Spectr. Temp. Dome Temp./Hum. ... *92.1% RH, 92.1%
 110**

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|--------|-------|--------------|------|----------|------|--------------------|---------|---------|
| | | 3.00 | BS III | | | | | | Fels- δ Pen | | |
| | | 0.85 | K2 III | | | | | | STD UEL | | |
| | | 3.60 | BS III | | | | | | Fels-lpu | | |
| | | 3.00 | BS III | | | | | | Fels- δ Pen | | |
| | | 0.85 | K2 III | | | | | | STD UEL | | |
| | | 3.60 | BS III | | | | | | Fels-lpu | | |

111

Emulsion Batches:

Date Nov. 20/21..... Observers Fels. | Petr.....

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|----------------|----------------|--------------|----------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 1571 | comp | | | 03 29 08 | | | | Th-Ar | 20s |
| 1572 | MD34503 | 05 12 45 | -6 57 05 | 03 30 00 | 04 10 10 | | | | |
| 1573 | comp | | | 04 10 54 | | | | Th-Ar | 20s |
| 1574 | bias (4) | | | 04 16 00 | | | | | |
| 1575 | bias (4) | | | 04 19 00 | | | | | |
| 1576 Feb 27 | 4 flats @ 220s | MA=0 | $\delta = +45^\circ$ | | | | | | |
| 1580 Oct 31 | 4 flats @ 220s | MA=0 | $\delta = -6^\circ$ | | | | | | |
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Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

Spectr. Temp. Dome Temp./Hum. 0.6 / 92.1% Transparency Conditions . 1.0.3.4. → 5. 10. 11.

Focus

112

Spectr. Temp. Dome Temp./Hum.

an
Exp.

20

26

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/ Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|--|--------|-----------|-----|-------|------------------|------|----------|------|----------|-------------|---------|
| | | | | | | | | | | | |
| | | | | | | | | | FJS - Pp | clouded out | |
| <p>Nov 22/23 @ 23 EST noted that MIRN was sl fainter than δ Ceti is perhaps $\approx (V=4.3)$ binoculars and visually.</p> | | | | | | | | | | | |

113

Date Nov... 23/24.. 1990 Observers ... T.H. / NSR

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|--------------|--------------|--------------|---------------------|-------------------------|--------------------------|-------------------|--------------------------|---------------------------|-------------------------|
| CCF00048.FTS | Comp for MHP | | | (FeNe intended) maybe | OG 550 filter as well | 0 0 | Aperture Clear | FeNe RG1 | 100s 300s |
| CCF00049.FTS | Comp | | | 20 17 | | | Ap clear OG 550 | FeNe RG1 | 300s |
| CCF00050.FTS | Comp | | | 20 38 | | | Aperture clear OG 550 | FeNe | 200 |
| CCF00051.FTS | Flat | | | | | | 1/4 aperture OG 550 | TUNG | 30 |
| | | | | | | | | | |
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Spectr. Temp. ...

Focus

Spectr. Temp.

Exp. Mtr. Seeing

FeNe Comp

30,000

100,000

#1 Sun/Mon
 11/5 Date 1990 Nov 25/26... Observers T.N.....

Emulsion Batches:
 → all obs. copied to optical disk

 → Also copied to CCD/Perseus/CMS

| 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 |
|-----------|--------------------|--------------|---------------------|-------------------------|---|-------------------|-------------|---------------------------|------|
| CC00218 | Fls Comp for CGX-2 | | | 19 50 | Note (Filter TRAY stopped down with TAPE) | | FeNe | OG550 | 100s |
| CC00219 | Fls HDE 226868 | 19 54.6 | +34 56 | 19 57 | 20 18 | 4 22 W | | OG550 | |
| CC00220 | " | " | " | 20 20 | 20 29 | 4 32 W | | OG550 | |
| CC00221 | " | " | " | 20 30 | 21 04 | 5 07 W | | OG550 | |
| CC00222 | BIAS(1) | | | | | | | | |
| CC00223 | HDE 226868 | 19 54.6 | +34 56 | 21 06 | 21 20 | 5 23 W | | OG550 | |
| CC00224 | Comp | | | | | | FeNe | OG550 | 100s |
| CC00225 | Comp | | | | | | FeAr | OG550 | 100s |
| CC00226 | Comp for HD15318 | | | 21 38 | | | FeAr | | 100s |
| CC00227 | HD15318 | 02 22.8 | +08 01 | 21 40 | 22 02 | 00 24 E | | OG550 | |
| 228 | Comp | | | | | | FeAr | | |
| 229 | BIAS(4) | | | | | | | | |
| 230 | Flat. | | | | | | Tungsten | Ap. 1/2 OG550 | 10 |
| 231 | Comp. | | | | | | Fe-Ar | Ap. 1/4 OG550 | 100 |
| 232 | Flat ref | 19 Cep pos'n | | 22 30 | | 4 27 W | | | |

Spectr. Temp. ...
 Focus 585...
 Spectr. Temp. ...

Exp. Mtr. Seeing

3700 300 9

300

950

300

300

300

300

300

300

Spectr. Temp. $+2.0^{\circ}\text{C}$ Dome Temp./Hum. $+2^{\circ}\text{C}$ 62%

Transparency Conditions ... PARTIAL Clearing

Focus 5.85 < 1 pixel diff in Hartmann test (One line test)
Fast check

440 0 32 1074 2 1 116

Spectr. Temp. Dome Temp./Hum.

Tel Focus @ $+1.9^{\circ}\text{C}$ = 2670

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emission λ | P.H. | Program | Remarks | ADCU Quality | |
|--|--------|-----------|-----------|-------------|------------------|----------------|--------------------|------|---------|---|---------------|--|
| | | | | CCD CHSS | G=4689 831/44 | * 250 μ | 10,100Å | 5ci | ✓ | * Full Length CCD T = -80°C CGAIN = 30 | | |
| 2700 | 200 | B 9.78 | 09.7.1.0b | | | * 250 μ | " | 4ci | ✓ | * To Far L of center Guidel near center 226 | | |
| 300 | | | | | | | | 1ci | ✓ | cloud at end Guidel Right of center | | |
| 950 | | | | | | | | 2ci | ✓ | Guidel center between 1 & 2 | 250 | |
| | | | | | | | | 3ci | ✓ | | | |
| 5300 | | | | | | | | 5ci | ✓ | cloud at end (platform limit) | | |
| * forgot to change filter to Comp mode | | | | | | | | | 5ci | ✓ | | |
| Scene here. | | | | | | | | | 1ci | ✓ | | |
| 8000 | OK | 4.28 | B9.5 II | | | | | 1ci | ✓ | Sp photo STOP part cloudy Filter out. | | |
| | | | | | | | | | | Filter in | part. 8800 | |
| | | | | | | | | | | Filter in | | |

Emulsion Batches:

.....

#2
 117 Date 1990 Nov 25/26.. Observers M.Ki. - T.

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination <small>For All Comps AP Clear</small> Fe Ar | Comparison Type/Filter | Exp. |
|-----------|--------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|---|---------------------------|------|
| 233 | Comp | | | | | | | OG530 | 100s |
| 234 | HD 209975 | 22 02.1 | +61 48 | 22 36 | 22 53 | 4 50 W | | OG550 | |
| 235 | n | n | n | 22 54 | 23 09 | 5 06 W | | OG550 | |
| 236 | Comp | | | | | | Fe Ar | OG550 | 100 |
| 237 | Comp for BM Cass | | | 23 22 | | | n | * | 100 |
| 238 | BM Cass | 00 48.6 | +63 33 | 23 28 | 23 52 | 3 00 W | | OG530 | |
| 239 | BIAS(4) | | | | | | | | |
| 240 | Bm Cas | n | n | 23 57 | 00 20 | 3 28 W | | OG550 | |
| 241 | Comp. | n | n | 00 25 | 00 27 | | AP Clear Fe Ar | OG550 | 100. |
| 242 | Comp for HD 197433 | | | | | | Fe Ar | OG550 | 100 |
| 243 | HD 197433 | 20 39.8 | +75 14 | 00 40 | 01 32 | 8 58 W | | OG550 | |
| 244 | Comp | | | | | | Fe A | OG550* | 100 |
| 245 | Bias(4) | | | | | | | | |
| 246 | Comp w/ MIRA posh | | | | | | | OG550 | 100s |
| 248 | HD 14386 | 02 14.3 | -3 26 | 01 59 | 02 06 | | | n | |

Spectr. Temp.

Focus.....

Spectr. Temp.

Exp. Nr. Seeing

Spectr. Temp. Dome Temp./Hum. 0° 69.7° Transparency Conditions ... *PART* ... \rightarrow mostly cloudy ...

Focus 118
 Spectr. Temp. Dome Temp./Hum. MID
 A DUC

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|--------------------|------------|-------------|-------------------|--------------------|----------|------|-----------|---|---------|
| | | | | CCD CASS | 831/44 $^{\circ}$ | Full Length 250 | 10/100 | | | | |
| 8400 | OK | \checkmark 50 | 09516 | | | | | | | Tel REVERSE (East side) | 500 |
| 9000 | | 1 | " | | | | | | | | |
| 400 | | \checkmark 29 | | | | | | | | * Filter rack had fallen (no filter in) thin cloud (Tel still on East side) | |
| 800 | | \checkmark 29 | | | | | | | | cloudy filter IN. | |
| 8700 | | | | | | | | | | | |
| 350 | POOR | VAR 28 | G5+ KOL | | | | | 4ci | Hdy pgm * | cloudy (vw Cep) (filter holder slid down from date) | |
| 8000 | | | | | | | | | MIRA pgm | | 6000 |

119 #3

Date 1.9.90. Nov 25/26... Observers M.Ki. J.T.

Emulsion Batches:

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

| 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. |
|-----------|-------------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------------|---------------------------|------|
| 249 | HD 14386 | 02 14.3 | -3 26 | 02 02 | | | | OG550 | |
| 250 | " | " | " | 02 05 | | | | " | |
| 251 | Comp d'end | | | | | | Ap clear | FeAR " | 100s |
| 252 | Flat at Mira posn | | | | | | Ap 1/2 | FeAR | 20s |
| 253 | Comp | | | | | | | FeAR | 100s |
| 254 | Mira 560 Comp bras(4) | | | 02 06 | 02 46 | | | FeAR | |
| 255 | Comp | | | | | | Ap clear | OG550 | 100s |
| 256 | HD 22928 | 03 35.8 | +47°28 | 03 16 | 03 30 | 3 50 W | | OG550 | |
| 257 | Comp | | | | | | Aperture clear | FeA OG550 | 100s |
| 258 | Flat | | | | | | AP=1/2 | TUNG OG550 | 10s |
| 259 | Flat #2 | | | 03 40 | | | " | " | " |
| 260 | BRAS(4) | | | | | | | | |
| 261 | Comp | | | 03 52 | | | Ap clear | FeAR OG550 | 100s |
| 262 | HD 87901 | 10 03.1 | +12 27 | 04 04 | 04 08 | 1 58 E | | OG550 | |
| 263 | " | " | " | 04 08 30 | 04 12 | 1 53 E | | " | |

Spectr. Temp. ...

Focus ... #3

Spectr. Temp. ...

Exp. Mtr. Seeing

35

6000-7000
*

6000

7000

Spectr. Temp. Dome Temp./Hum. 0°C ... H-6670 Transparency Conditions ... Clear,

Focus #3 Nov 25/76

20

Spectr. Temp. Dome Temp./Hum.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|--------------------------------|--------|-----------|--------|----------|--------------|------|----------|------|---------------------------|--|--------------|
| | | =4.3 | M | CCD Cass | 83/44 | 250μ | 10,100 | | MIRH | Magnified HD 12486 by mirror Gaidel can left # | |
| | | | | | | | | | " | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| 35 | | | | | | | | | | At Mirc 360 posi. Very slow, | |
| 60000 cuts 10000 | 0 | V=3 | B5 III | | | | | | S per Sp phot std | (CCD, T) = -80°C still Tel still reversal (East side) | |
| | | | | | | | | | | | 8000 PAI |
| 60,000 70,000 | | V 1.4 | | | | | | | α Leo Sp phot std " | | mean 2000 |

121

#4

Date 1970 Nov 25/26 Observers MKJ/Tn

Emulsion Batches:

.....

| 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. |
|-----------|---------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 264 | AD Leo | | | ~04 14 | 04 35 | 01 30 E | | OG550 | |
| 265 | Comp | | | | | | Hp Clear | OG550 | 100s |
| 266 | " | | | | | | " | " | 100s |
| 267 | HD 52961 | 06 58.1 | +10 55 | 04 56 | 05 11 | 2 10 W | | OG550 | 100 |
| 268 | " | " | " | 05 12 | 05 31 | 2 30 W | | " | |
| 269 | Comp | | | | | | Hp Clear | OG550 | 100 |
| 270 | Comp for MWC 560 | 07 21.0 | -07 32 | ~06 ?? | | W | Ap Clear | FeAR No filter | 10s |
| 271 | MWC 560 | 07 21 | -07 32 | ~06 ?? | 06 17 | 2 54 W | | " | |
| 272 | " | " | " | 06 18 | 06 29 | 3 06 W | | " | 10 |
| 273 | Comp | | | | | | Hp Clear | FeAR " | 10s |
| 274 | FLAT | | | | | | Ap = 1/4 | TUNG no filter | 10. |
| 275 | FLAT | | | 06 43. | | | | | |
| 276. | BIAS (4) | | | | | | | | |
| 277. | SKY | | | 06 48. | | | | | |

Spectr. Temp. ...

Focus #4

Spectr. Temp. ...

Exp. Mtr. Seeing

000 ok

1800 ok

2100

150

400 ok

123 #45

Date 1990 Nov. 25/26... Observers M.K.I. / T.G.....

Emulsion Batches:

.....

Spectr. Temp. ...

Focus ... #5

Spectr. Temp. ...

| 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. |
|-----------|---------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 278 | BIAS(4) | | | 207 | | | | | |
| 279 | DARK 15m } DARK BAT | | | | | | | | |
| 280 | BIAS(4) | | | | | | | | |
| 281 | DARK 15m } | | | | | | | | |
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Exp. Mtr.

Seeing

#1 1990 Mon / Tues
 25 Date ... Nov. ... 26/27 Observers ... T.N. / NSR

Emulsion Batches:

.....
 All: This page copied to CCD/Perseus/Cass

| 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. |
|----------------|-----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|--------------------|-------------------------------|-------|
| CC00 | COMP. FOR | | | | | | | 06550 | |
| 282 | HDL 226868 | 19 59.6 | +39 56 | 17 40 | | | FeA | FeA 1005 | |
| 283 | HDL 226868 | " | " | 17 44 | 17 55 | 02 04 W | | R60 06550 ~6605 | 175 |
| 284 | " | " | " | 17 56 | 18 36 | 02 45 W | | " ~2400 | 481 |
| 285 | COMP. | | | 18 37 | 18 39 | | FeA | 06550 | |
| 286 | COMP | | | 18 43 | | | | | |
| 287 | HD 214923 | 22 36 30 | +10 19 00 | 18 46 | 18 53 | 00 17 W | | R60 | ~180 |
| 288 | COMP | " | " | 18 56 | 18 58 | 00 22 W | FeA | 06550 | |
| 289 | FLAT | " | " | 19 02 | 19 03 | | Aper = 1/4 TUNG | " 30s | |
| 290 | BIAS (4) | " | " | 19 05 | | | | | |
| 291 | HD 214923 | " | " | 19 07 | 19 15 | 00 39 W | | R60 | ~500 |
| 292 | DARK | " | " | 19 19 | 19 24 | 00 40 W | | | |
| 292 | HD 214923 | " | " | 19 28 | 19 32 | 00 56 W | | R60 | ~1050 |
| 293 | " | " | " | 19 32 | 19 38 | | | R60 | ~500 |
| 293 | BIAS (4) | | | | | | | | |
| 294 | DARK 15 min. | | | | | | | | |
| 295 | BIAS (4) | | | | | | | | |
| 296 | DARK 15 min | | | | | | | | |

DARK BAT

Spectr. Temp. ...

Focus ... #1

Spectr. Temp. ...

Exp. Mtr. Seeing

Spectr. Temp. Dome Temp./Hum. $0^{\circ}\text{C}/69.5\%$ Transparency Conditions ... HAZY ... + SOME ...
 Focus ... #1 Nov. 26/27 ... CLOUD, 126
 Spectr. Temp. Dome Temp./Hum. $+2^{\circ}\text{C}$ 78.6 CGAIN = 30
 440 0 32 1024 2/1 CCD FMT

3000
 arison
 Exp.

1005

~600

~2400

300

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|--|--------|-----------|----------|-------|--------------|-----------|----------|------|--------------------------|--|------------------|
| | | | | CCD | G=4689 | | | ci 2 | | | |
| | | | | CASS. | 831/44 | 250 μ | 10, 100A | | | CCDT = -80 $^{\circ}\text{C}$ | |
| ~175 | Fine | B 9.78 | 07.9 Lab | " | " | " | " | ci 2 | | Much cloud | |
| ~481 | " | " | " | " | " | " | " | ci 3 | | more cloud (Deneb not visible) improving! THEN STRONG CLOUD | |
| | | | | " | " | " | " | ci 4 | | | |
| ~180 | " | V= 3.4 | B8V | " | " | " | " | | | THICK CLOUD ENDED EXPOSURE | |
| | | | | " | " | " | " | | | | |
| | | | | " | " | " | " | | | | mean add ~500 |
| ~500 | | V =3.4 | B8V | " | " | " | " | | CGain 30 Had to Reset | HOLD IN CLOUD THOUGH VERY HAZY CLOUD. | |
| | | " | " | " | " | " | " | | Forgot to set CGAIN | KILLED (i.e. HOLD IN CLOUD) | |
| ~1050 | | V =3.4 | B8V | " | " | " | " | 1ci | CGain = 0 | | |
| ~500 | | " | " | " | " | " | " | | | CLOUD AGAIN! STOPPED. | |
| Note CGAIN = 0 FOR 292-296 1ci CGAIN = 0 | | | | | | | | | | | |

C

127 #2

Date 1990 Nov 26/27 Observers Jn..... (Tests).....

Emulsion Batches:

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.....
.....

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|----------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----------------|
| | DARK (lights out too) | | Lost. | 21 53 | 22 53 | | | | 3600 |
| 297 | BIAS (4) | | | 23 00 | | | | | |
| 298 | DARK 15m | | | 23 02 | | | | | |
| 299 | Bias (4) | | | | | | | | |
| 300 | DARK 15m | | | | | | | | |
| 301 | DARK | | (no lights either) | 23 38 | | | | | 1800s |
| 302 | Bias (4) | | | 00 15 | | | | | |
| 302 | DARK | | | 00 17 | | | | | 150s |
| | | | | | | | | | |
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Spectr. Temp.

Focus #2

Spectr. Temp.

Exp. Mtr. Seeing

CG

CG

pg #1
 29
 Date 1990 Nov. 29/30 Observers S.r.t./T.n./P.d.r.

Emulsion Batches:
 ✓ WORM
 ✓ perseus

| 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. |
|-------------|-------------------|------------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|--------|
| ce01584.FTs | DARK | +BIAS(A) = ce01585.FTS | | | | | | | 15 min |
| 1586 | Comp | | | 18 22 | | | | ThA | 5s |
| 1587 | HD 172167 | 18 33.6 | +38 41 | 18 23 | 18 26 | 03 48W | | | |
| 1588 | HD 172167 | " | " | 18 34 | 18 47 | 04 08W | | | |
| 1589 | Comp | | | 18 50 | | | | ThA | 5s |
| 1590 | Flat (.Drive off) | | | | | 04 34W | +38° | Tung | 35s |
| 1591 | Flat | " " | | 19 22 | | 04 34W | " | | 35s |
| 1592 | Comp | | | | | | | | |
| 1593 | HD 4614 | 00 4303.0 | 57 17 06 | 19 36 | 20 21 | 0 10 E | | | |
| 1594 | Comp | | | | | | | | |
| 1595 | HD 4614 | 00 43 03 | 57 17 06 | 20 29.7 | 21 14 40 | 0 44W | | | |
| 1596 | Comparison | | | 21 49 | | | | | |
| 1597 | HD 4614 | 00 43 03 | 57 17 06 | 21 19 | 22 04 | 1 33W | | | |
| 1598 | Comp | | | 22 06 | | | | ThA | 5s |
| 1599 | Comp | | | | | | | ThA | 5s |
| 1600 | HD 17878 | 02 47.2 | +52 21 | 22 13 | 22 5835 | 00 32W | | | |
| 1601 | Comp | | | | | | | ThA | 10s |

Spectr. Temp.
 Focus
 Spectr. Temp.

Exp. Mtr. Seeing

8800 post

11,600

195

195

100

1860 * 3050

B) p942

Date 1990 Nov 29/30... Observers ~~Srt~~ Srt/Tn./Pdr.....

Emulsion Batches:

.....

| 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. |
|----------------------|-------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce01602-F5 | HD 17878 | 02 47.2 | +52 21 | 23 04 30 | 23 49 25 | 1 15 W | | ThA | |
| 1603 | Comp | | | | | | | ThA | 5s |
| 1604 | HD 17878 | 02 47.2 | +52 21 | 23 54 | 00 39 | 2 04 W | | | |
| 1605 | Comp | | | | | | | ThA | 5s |
| ¹⁶⁰⁶ 1609 | Flatt x(40) | of HD 17878 | | 00 51 | | 2 22 W | | TUNG | 15s |
| 1610 | Comp | | | 01 07 | | | | ThA | 5s |
| 1611 | HD 28305 | 04 22.8 | +18 58 | 01 09 23 | 01 54 | 1 43 W | | | |
| 1612 | Comp | | | | | | | ThA | 5s |
| 1613 | HD 28305 | 04 22.8 | +18 58 | 01 56 | 02 41 | 2 31 W | | | |
| 1614 | Comp | | | | | | | ThA | 5s |
| 1615 | HD 28305 | 04 22.8 | +18 58 | 02 42 38 | 03 27 40 | 3 17 W | | | |
| 1616 | Comp | | | | | | | ThA | 5s |
| 1617 | Comp | | | 03 31 013 31 | | | | ThA | 5s |
| 1618 | HD 48329 | 06 37.8 | +25 14 | 03 39 24 | 04 20 | 1 55 W | | | |
| 1619 | Comp | | | | | | | | 5s |
| 1620 | HD 48329 | 06 37.8 | +25 14 | 04:21:10 | 05 06 00 | 2 41 W | | | |

Spectr. Temp. ...
 Focus
 Spectr. Temp. ...

Exp. Mtr. Seeing

6025 *
 4?
 6200
 776
 850
 950

133 #3

Date 1990 Nov 29/30

Observers Srt./PAr./Tq..... KK (next AM)

Emulsion Batches:

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

| 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. |
|---------------|------------------------|---------------------|---------------------|---------------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| 1621 | Comp | | | 05 06 | | | | Th-Ar | 5s |
| 1622- 1625 | Flats (4) | at HD48329 position | | | | | | Tung | |
| 1626 | Comp | | | | | | | Th Ar | |
| 1627 | HD 48329 | 06 37.8 | +25 14 | 05 23 | 06 04 | 3 39 W | | | |
| 1628 | Comp | | | | | | | | |
| 1629 | BIAS (4) | | | | | | | | |
| lef0021 | focus test | - IN | | Normal position | | | | ThA | 20 |
| 22 | focus | - OUT | | | | | | " | " |
| 23 | focus test | - IN | | 2 mounting screws on cable side | | | | dewar | |
| 24 | focus test | - OUT | | | | | | | |
| 25 | bias for above | | | | | | | | |
| FIT00715 | comparison for speckle | | | | | | | FeNe | 600 5 |

Spectr. Temp.

Focus.....

Spectr. Temp.

Exp. Mtr. Seeing

00500

Spectr. Temp. Dome Temp./Hum. Transparency Conditions ... *cloud at end*

Focus

134

Spectr. Temp. Dome Temp./Hum. ... *-2°C 70%*

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | slit P.H. <i>1.125</i> | Program | Remarks | Quality | |
|-----------|-----------------|-----------|-----|---|------------------|------------|----------|------------------------|------------------------|--------------------------------|---------|--|
| <i>55</i> | | | | <i>CCD Edelle</i> | <i>19.50</i> | <i>90u</i> | | <i>600u .205</i> | | | | |
| | | | | | | <i>*</i> | | <i>800u</i> | <i>micrometer .185</i> | | | |
| | | | | | | | | <i>600u .205</i> | | | | |
| | | | | <i>Tonight's) All backed up to CCD / perseus / edelle</i> | | | | | | | | |
| | | | | | | | | | | <i>00 128 1024 8 1</i> | | |
| | <i>100 send</i> | | | | | | | | | | | |
| <i>15</i> | | | | | <i>1800/47.0</i> | | | <i>4250A</i> | | <i>.040 entrance (16x obj)</i> | | |

135 #1 Fri-Sat
 Date 1990 Nov 30/Dec 1 Observers Srt/Tn/Pdr

Emulsion Batches:

| 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. |
|-----------|-----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|--------|
| ce01630 | Dark | | | 17:00 | | | | | 15 min |
| 1631 | Bias (4) | | | 17:30 | | | | | |
| 1632 | Comparison | | | 18:05 | | | | Th Ar | 5 sec |
| 1633 | HD 4614 | 00 43 03 | 57 17 06 | 18:05 | 18:50 | 1 36 E | | | |
| 1634 | Comp | | | 18:52 | | | | Th Ar | 5s |
| 1635 | HD 10700 Comp | | | | | | | Th Ar | 5s |
| 1635 | HD 10700 | 01 39 25 | -16 27 51 | 19:00 | 19:50 | 1 31 E | | | |
| 1637 | Comp | | | 19:51 | | | | Th Ar | 5s |
| 1638 | HD 10700 | " | " | 19:52 | 20 37 | 0 45 E | | | |
| 1639 | Comp | | | 20:38 | | | | Th Ar | 5s |
| 1640 | HD 10700 | 01 39 25 | -16 27 51 | 20:39 | 21 24 06 | 0 02 W | | | |
| 1641 | Comp | | | 21:25 | | | | Th Ar | 5s |
| 1642 | Comp | | | | | | | Th Ar | 5s |
| 1643 | HD 23249 | 03 38 27 | -10 06 06 | 21:30:26 | 22 15 | 01 06 E | | | |
| 1644 | Comp | | | | | | | Th Ar | 5s |

Spectr. Temp.
 Focus
 Spectr. Temp.

Exp. Mtr. Seeing

5500 ok

700

5500

7600

131
Pg #2

Fri Sat

Date 1990 Nov 30/Dec 1 Observers T.H. / Prd / Srt

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

| 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. |
|---------------|--------------------|------------------------------|--------------------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 1645 | HD 23249 | 03 38.5 | -10 06 | 22 16 | 23 01 | 00 20E | | | |
| 1646 | Comp | | | | | | | Th AR | 5s |
| 1647 | HD 23249 | 03 38.5 | -10 06 | 23 03 | 23 48 | 00 30W | | | |
| 1648 | Comp | | | | | | | Th A | 5s |
| 1649 | HD Comp | | | 23 55 | | | | " | 5s |
| 1650 | HD 21120 | 03 22.47 03 19.26 | +08 57.31 +08 40.37 | 23 56 | 00 33 | 1 31 W | | | |
| 1651 | Comp | | | | | | | Th AR | 5s |
| 1652 | FLAT | [Drive off] | | 00 58 | | 1 34W | +9 00 | Tung | 15s |
| 1653- 1654 | FLAT (2) | | | | | " | +9 00 | Tung | 40s |
| 1655 | FLAT | | | | | | | Tung | 90s |
| 1656- 1659 | FLATs (4) | Drive off | | 01 16 | | 0 0 | -13° | Tung | 40s |
| 1660 | Comp | | | 01 | | | | Th AR | 5s |
| 1661 | HD 21120 | 03 19.4 | +08 41 | 01 35 | 02 07 | 3 05W | | | |
| 1662 | Comp | | | | | | | Th AR | 5s |
| 1663 | HD 21120 | 03 19.4 | +08 41 | 02 20 | 03 05 | 4 04W | | | |

Spectr. Temp. ...
Focus.....
Spectr. Temp.

Exp. Mtr. Seeing

7410 1/2 slit height

7:

8:100

8:00

8:25

8:30 pop 4

Spectr. Temp. Dome Temp./Hum. $+3^{\circ}\text{C}$ 54% Transparency Conditions ... *Part cloudy* 138

Focus *P₁₇₂*

Spectr. Temp. Dome Temp./Hum. $+2^{\circ}\text{C}$ 61%
central

very gusty from west

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | Slit P.H. Height | Program | Remarks | Quality |
|-----------|---------------------------|------------|--------|-------------|--------------|-------------|----------|------------------|----------|------------------------------------|---------|
| 7410 | $\frac{1}{2}$ slit height | B- 4.46 | KO IV | CCD Echelle | 19.50 | 90u .265 | 3950A | 600u .205 | Srt pgrm | x grating 0.5000 FOR H11 | |
| 2100 | | | | | | | | | | cloud | |
| 2800 | | B 4.49 | G6 II | | | | | | Srt pgrm | part cloudy | |
| | | | | | | 90u | | 800u .185 | | ADUC MAX | 1500 |
| | | | | | | 90u | | 800u .185 | | ADUC MAX | 3900 |
| | | | | | | u | | " | | | |
| | | | | | | u | | h | | | |
| | | | | | | | | 600u .205 | | | |
| 3525 | | B 4.49 | G6 III | | | | | " | | entirely cloud | |
| 4000 | poor | B 4.49 | G6 III | | | | | u | Srt pgrm | CCD still T = -100°C thin cloud | |

139 #3

Emulsion Batches:

Date .1990 ~~Nov 30~~ Dec 1 Observers S.C. / T.G. / P.R.

.....

Spectr. Temp. ...
 Focus
 Spectr. Temp.

| 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. |
| 1664 | - Comp | for HD 211 20 | | | | | | Th Ar | 5s |
| 1665 | Bias (4) | | | ^m 0425 | | | | | |
| | Dec 1/2 | | | | | | | | |
| 1666 | | | | | | | | | |
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Exp. Mtr. Seeing

#1

141

Date 1990 Dec 1/2... Observers Srt./Pdr./Ta.....

Emulsion Batches:

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.....
.....

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. | Exp. Mtr. | Seeing |
|----------------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|--------|-----------|--------|
| ceo 1666fts | Bias (4) | | | | | | | | | | |
| 1667 | Dark | | | | 17 54 | 3 42 W | | | 15 min | 26600 | |
| 1668 | Comp | | | | | | | | | | |
| 1669 | HD 172167 | 18 33.6 | +38 41 | 17 49 | 17 54 | 3 42 W | | | | 22000 | |
| 1670 | Comp | | | | | | | | 5s | | |
| 1671 | Comp | | | | | | | | 5s | | |
| 1672 | HD 4614 | 00 43.1 | +57 17 | 18 04 | 18 14 | 2 10 E | | | | 3710 | OK |
| 1673 | Comp | | | 18 17 50 | | | | | | | |
| 1674 | HD 4614 | 00 43.1 | +57 17 | 18 21 | 18 31 | 1 53 E | | | | 3500 | |
| 1675 | Comp | | | | | | | | 5s | | |
| 1676 | Comp | | | | | | | | 5s | | |
| 1677 | HD 17878 | 02 47.2 | +52 21 | 19 04 30 | 19 30 | 2 58 E | | | | 3500 | |
| 1678 | Comp | | | | | | | | 5s | | |
| 1679 | Comp | | | | | | | | 5s | | |
| 1680 | HD 10700 | 01 39.4 | -16 28 | 19 38 | 20 14 | | | | | 1100 | |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

Spectr. Temp.

Dome Temp./Hum. $+4.4^{\circ}\text{C}$... 61%

Transparency Conditions ... Hazy - part cloudy

Focus

Spectr. Temp.

Dome Temp./Hum. $+4^{\circ}\text{C}$... 63%

142 MAX
A04

| Exposure | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|----------|-----------|--------|-----------|------------------|--------------|------------------------|--------------|----------------------|------|---------------|------------------|---------|
| 15 min | 21500 | | | | CCD Eddle | CCD 19.2 | 704 0.273 | 5167 5172 5183 | | X grating 389 | order #110 | |
| 5s | 22000 | | B -0 | A0V _a | | | | | | | SI saturati. | 16K+ |
| 5s | 3710 | OK | B 4.01 | G0V | | | | | | 21 Cas | | 11000 |
| 5s | 3500 | | B 4.01 | G0V | | | | | | | | |
| 5s | 3500 | | B 4.69 | G4III | | | | | | | | |
| 5s | 1600 | | B 4.22 | G8V | | | | | | T Cet | Cloud increasing | |

143 #2

Date 1990 Dec 1/2 ... Observers Srt./Tn./Pdr

Emulsion Batches:

.....

Spectr. Temp. ...

Focus

Spectr. Temp. ...

| 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. |
|---------------|-------------------|-----------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|----------------|
| ce01681.Fts | Comp for HD10700 | | | | | | | T _h AR | 5s |
| 1682- 1685 | Flats at -16° Dec | | | | | 00 55W | -16 01 | TUNG | 30s |
| 1686-1689.Fts | Flats at +55° | | | | | 02 00E | +55° | TUNG | 30s |
| 1690.Fts | BIAS(4) | Bias ₀ BAT | | 20 57 | | | | | |
| | | | | | | | | | |
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Exp. Mtr. Seeing

pg#1 Sun/Mon
 Date 1990 Dec 2/3

Observers *Tom/Polr*

Emulsion Batches:

.....

Spectr. Temp.
 Focus
 Spectr. Temp.

| 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. |
|--|------------|---------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|--------|
| ce01691- 01695 | Flats | | +10 00 | 17 47 | | 00 ^h | +10° | TUNG | 20 sec |
| ce01696 1695 | Comp | | | | | | | THAR | 20 sec |
| 1697 | HD 17 2167 | 18 33.6 | +38 41 | 18 09 45 | 18 12 12 | 4 04 W | | | |
| 1698 | HD 17 2167 | " | " | 18 14 55 | 18 16 45 | 4 07 W | | | |
| 1699 | Comp | | | | | | | THAR | 20s |
| 1700 1700 1701 1701 | HD 22 928 | 03 35 48 | +47 28 04 | 18 34 | 19 19 | 3 36 E | | | |
| 1702 1672 | Comp | | | | | | | THAR | 20s |
| 1703 1673 | Comp. | | | | | | | THA | 10s |
| 1704 1674 | HD 26912 | 04 10.1 | +08 39 | 19 43 38 | 20 27 | 3 19 E | | | |
| 1705 1675 | Comp | | | | | | | THA | 10s |
| 1706 1676 | Comp | | | | | | | THA | 10s |
| 1707 1677 | HD 22 928 | 03 35.8 | +47 28 | 20 36 | 20 48 | 2 25 E | | | |
| 1708 1678 | Comp | | | | | | | THA | 10s |
| 1709 | Comp | | | | | | | THA | 10s |
| 1710 | HD 29139 | 04 30.2 | +16 19 | 20 58 | 21 03 | 3 03 E | | | |

Exp. Mtr. Seeing
 15000
 8696
 1700 OK
 860 OK
 4200
 5200 OK

Spectr. Temp. Dome Temp./Hum. 1.5 / 52.3% Transparency Conditions Clear 146

Focus

0 0 256 1024 4 1

Spectr. Temp. Dome Temp./Hum.

90 c gain - CCD T = -100°C MAX

| Exp. Mtr. | Seeing | Prp. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|-------|-------------|--------------|-------------|----------|-----------------------|------------|------------------|---------|
| | | | | CCD Echelle | 18.60 | 80μ .269 | | 4100μ 600μ .205 | | xgrating @ .4555 | |
| | | | | | | 80μ .269 | | 450μ 400μ .225 | 400μ In | 4ci | |
| 15000 | | 0.04 | A0Vg | | | | | 2 | " Fds Std | 5ci | 14000 |
| 8646 | | 0.04 | A0Vg | | | | | 3 | " | 6ci | |
| | | | | | | | | 4 | " | 7ci | |
| 1700 | OK | 3.00 | B5III | | | | | 5 | " Fds pgrm | 5 Per | |
| | | | | | | | | | | | |
| 1860 | OK | 4.29 | B3IV | | | | | | Fds-pgrm | 2 Tau | |
| | | | | | | | | | | | |
| 4200 | | | | | | | | 3ci | | 5 Per | |
| | | | | | | | | 4ci | | | |
| 5200 | OK | 0.85 | K | | | | | | Fds std | 2 Tau | 2000 |

Cross grating setting??

pg#2 ¹⁴⁷ Sun - Mon

Date 1990 Dec 2/3... Observers J.v. / P.d.r.....

Emulsion Batches:

.....

| 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. |
|-----------|----------|--|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|--------|
| 1711 | Comp | | | | | | | ThA | 10s |
| 1712 | Comp | | | | | | | ThA | 10s |
| 1713 | HD 26912 | 04 10.1 | +08 39 | 21 11 | 22 08 | 1 40 E | | | |
| 1714 | Comp | | | | | | | ThA | 10s |
| 1715 | Comp | | | | | | | ThA | 10s |
| 1716 | HD 22928 | 03 35 48 | +47 28 | 22 17 30 | 23 06 | 0 07 E | | | |
| 1717 | Comp | | | | | | | | 10s |
| 1718 | Comp | | | 23 18 | 23 23 | | | | |
| 1719 | HD 29139 | 04 30.2 | +16 19 | 23 18 | 23 23 | 1 43 E | | | |
| 1720 | Comp. | | | | | | | | |
| 1721 | 1725 | 60s (9500 Arcu) ^{max} [80s (13000) x 4] | | | | 0 0 | +47° | | 80s |
| 1726 | 1727 | 13000 ADCU each | | | | 0 0 | +47° | | 80s |
| 1728 | 1734 | | | | | 0 0 | +10° | | 80s |
| 1735 | Bias (4) | | | 00 41 | | | | | |
| 1736 | Dark | | | | | | | | 15 min |
| 1737 | Bias (4) | | | | | | | | |
| 1738 | Dark | | | | | | | | 15 min |

Spectr. Temp.

Focus.....

Spectr. Temp.

Exp. Mtr. Seeing

1500 or

5380

8100

5100

15 min

15 min

Spectr. Temp. Dome Temp./Hum. -1°C 59% Transparency Conditions... Hazy - 7 Cloudy 148

Focus

Spectr. Temp. Dome Temp./Hum. *contrast slit* MAX ADUC

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. Height | Program | Remarks | Quality |
|-----------|--------|-----------|-------|-------------|--------------|------------------|-----------|------------------|----------|-------------------------------------|--------------|
| 10s | | | | CCD Eckelle | 600 18.60 | 80 μ .269 | AA71-4480 | 400 μ 225 | | | |
| 1500 | OK | V 4.29 | B3IV | | | | | | Fds pgrm | thin cloud | Max Tau 2000 |
| | OK | V 3.00 | B5III | | | | | | Fds pgrm | medium cloud | S Per |
| 2380 | | | | | * 18.59 | | | let | | * chk gratng, bumpel before exp? | |
| 5100 | | V 0.85 | K5III | | | | | | | | |
| | | | | | | | | 600 .205 | | | <u>1600</u> |
| | | | | | | | | 600 .205 | | | |

#13
KA

Sun - Mon

Date 19.90. Dec 2/3..... Observers Pdr./Tn.....

Emulsion Batches:

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

| 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. |
|-------------------------------------|-------------|--------------|---------------------|---------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| Ce01739.Fts | Comp | | | 01 34 30 | | | | ThA | 105 |
| 1740 | HD 26912 | 04 10.1 | +08 39 | 01 34 30 | 01 55 32 | 2 08 W | | | |
| 1741 | Comp | | | | | | | ThA | 105 |
| Dec 5/90 Tests | | | | | | | | | |
| FIT * 716.MK | Comp (test) | | | no f stop Diffuser OUT | no f stop 21 27 | 00 | -10° | FeNe clear | 999s |
| * 717.MK | Flat (test) | | | no f stop Diffuser IN | no f stop 21 36 | 00 | -10° | clear | |
| * These entries repeated next page. | | | | | | | | | |

Spectr. Temp. ...
Focus
Spectr. Temp. ...

Exp. Mtr. Seeing

200 / 500

MAX
A = B

15 415

400 300

1000

Spectr. Temp. Dome Temp./Hum. Transparency Conditions ... *part cloudy* 150

Focus

Spectr. Temp. Dome Temp./Hum. ... *16°C... 55%*

SLIT

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. <i>+light</i> | Program | Remarks | Quality |
|---|----------------------|-----------|-----|------------------------|-----------------|---------------------|-------------------------|--------------------|---------------------|---|------------|
| | | | | <i>CCD Echelle</i> | <i>1859</i> | <i>80μ :269</i> | <i>central 4480</i> | <i>*400μ</i> | | <i>slit height looked shorter than before</i> | |
| <i>405</i> | <i>5050</i> | | | | | | | | <i>Sci Feldspar</i> | <i>cloud again</i> | <i>500</i> |
| <i>All backed up to end on Perseus / echelle.</i> | | | | | | | | | | | |
| <i>only 115 mag left on E: (Hst)</i> | | | | | | | | | | | |
| <i>99%</i> | <i><15 <15</i> | | | | | | <i>4250A</i> | <i>*</i> | | <i>FeNe lines identified. control on</i> | |
| | <i>400 300</i> | | | <i>speckle PTS</i> | <i>1800/47°</i> | | <i>4250A</i> | | | <i>.040 entrance (16x obj)</i> | |
| <i>note</i> | | | | | | | | | | | |
| <i>Diffuser out for comp, gives sl higher signal</i> | | | | | | | | | | | |
| <i>Diffuser IN for Tung ≈ doubles signal in both A & B.</i> | | | | | | | | | | | |

151

Wed - Thurs

Date 1990 Dec 5/6 ... Observers ... Pdr - Tu

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|--------------------------|---|-----------|------------------|----------------------|--------------------|----------------|-------------|------------------------|--------|
| ce FIT 00716.kk 01742 | Comp | No f stop | Diffuser out | 21 10 | 21 27 | 0 0 | -10° | FeNe Clear | 999 |
| FIT 00717.kk | FLAT | No f stop | Diffuser IN | 21 36 | 23 25 | 0 0 | -10° | TUNG Clear | |
| Tag & FIT 00718.kk | HO 34029 Capella | 05 09.3 | +45 54 | 23 46 | 00 54 | 00 20W | +46° | | |
| Between these EXPS | Newtonian Flat adjusted to try to max signal A & B. Back to ORIGINAL setting is about it! | | | | | | | | |
| Tag & FIT 719.kk | HO 34029 | 05 09.3 | +45 54 | 01 02 30 | 01 26 | 00 53 W | +46° | | |
| 720.kk | Comp | No f stop | Diffuser OUT | 01 30 30 | 01 50 30 | | +46° | FeNe Clear | 20 min |
| 721. | Flat | No f stop | Diffuser IN | 02 08 | | 0 0 | platform | TUNG Clear | 3 hrs |
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Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. B Seeing

4.5 4.5

max
400/300

20/40

7.300

200/40

150+

250

4.5/4.5

20/30

Spectr. Temp.

Dome Temp./Hum. ... -1.8°C ... 72%

Transparency Conditions ... Part cloudy - Clear

152

Focus

Spectr. Temp.

Dome Temp./Hum.

Tel focus for speckle head = 2771 ^{mean}

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | cuts Quality |
|--|------------|-------------|---------------|---------------|--------------|-------|----------|------|---------|---|--------------|
| A B | | | | Fiber-fed PTS | 1800/47° | 300µ? | 4250A | | | speckle set up | |
| 400/300 | | | | | | " | | | | | 800 |
| 50/40 to 500/-300 | poor ** | B = +0.7 | G8III? FF PTS | speckle | 1800/47 | " | 4250A | | KK pgm | in & out of thin cloud. Large Dome Turn @ 00 EST | |
| 50/40 500/300 | ** poor | B +0.7 | G8III? FF PTS | speckle | 1800/47° | | 4250A | | KK pgm | Image of Capella is 50% larger than FF guiding hole, and with much scintillation (image jumping) more cloud Thick by end of exp | |
| 50/40 300/250 | poor | B +0.7 | G8III? FF PTS | speckle | 1800/47° | | 4250A | | KK pgm | | |
| <15 / <15 | | | | " | " | | " | | | | |
| 350/350 | | | | | | | | | | | |
| <p>Perseus</p> <p>716.kK To 720.kK backed upon PCS / speckle</p> | | | | | | | | | | | |

153

Date 1990 Dec 8/9 Observers Srt / Pdr

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-------------|----------|--------------|---------------------|---|-----------------------|-------------------|-------------|---------------------------|------|
| ce 01742 | Bias (4) | | | 16:07 | | | | | |
| 01743 | Dark | | | 16:08 17:55 79 | | | | | 15m |
| 01744 | Comp | | | 1751 | | | | Th Ar | 5s |
| 01745 | HD 10700 | 01 39 25 | -16 27 51 | 17 55 19 | 18 25 | 2 26 E | | | |
| 01746 | Comp | | | | | | | Th Ar | 5s |
| 01747 | HD 10700 | " " | " " | 18 31 | 19 01 | 1 49 E | | Th A | 5s |
| 01748 | Comp | | | | | | | Th A | 5s |
| 01749 | Comp | | | | | | | Th A | 5s |
| 01750 | HD 17878 | 02 47 10 | +52 21 12 | 19 21 | 19 46 | 2 16 E | | | |
| 01751 | Comp | | | | | | | Th A | 5s |
| 01752 | Comp | | | | | | | Th A | 5s |
| 01753 | HD 23249 | 03 38 27 | -10 06 06 | 20 13 | 20 44 | 2 05 E | | | |
| 01754 | Comp | | | | | | | Th A | 5s |
| 01755 | HD 23249 | " " | " " | 20 48 | 21 18 45 | 1 31 E | | | |
| 01756 | Comp | | | | | | | | |

Spectr. Temp. ...

Focus.....

Spectr. Temp.

Exp. Mtr. Seeing

Poor

150

228

220

547

155

(cont'd)

Emulsion Batches:

Date 1990 Dec 8/9 Observers Srt/Pdr

| 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. |
|-----------|-------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----------------|
| 01757 | Comp | | | | | | | | |
| 01758 | HD 21120 | 03 19 26 | 08 40 37 | 21 28 50 | 21 40 | 0 52 E | | | |
| 01759 | Comp | | | | | | | | |
| 01760 | Flat Fields | | | | | 02 ^h E | -13° 00 | | 30 ^s |
| 01763 | | | | | | | | | |
| 01764 | Flat Fields | | | | | 02 ^h E | +8° 00 | | 30 ^s |
| 01767 | | | | | | | | | |
| 01768 | Flat Fields | | | | | 02 ^h E | +52° 00 | | 30 ^s |
| 01771 | | | | | | | | | |
| | | EXABYTE | | | | | | | |
| 01772 | Comp | | | | | | | | |
| 01773 | HD 28305 | 04 22 46 | 18 57 31 | 01 17 00 | 01 34 21 | 1 59 W | | | |
| 01774 | Comp | | | 01 38 30 | | | | Th A | 5 ^s |
| 01775 | HD 28305 | " " | " " | 01 38 30 | 01 50 | 2 16 W | | | |
| 01776 | Comp | | | | | | | Th A | 5 ^s |
| 1777 | Comp | | | | | | | Th A | 5 ^s |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

411

560

560

Spectr. Temp. Dome Temp./Hum. $0.0^{\circ}\text{C} / 70.1\%$ Transparency Conditions *Clouded over* 156

Focus at $\approx 21^{\text{h}}40^{\text{m}}$ EST

Spectr. Temp. Dome Temp./Hum. *slit Height*

arison
Exp.

30s

30s

30s

5s

5s

5s

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|-------------|----------------|-----|-------------|--------------|-------------------|----------|---------------------|---------|----------------------------------|---------|
| | | | | CCD echelle | 19,10 | 70 μ 0.273 | | 600 μ 0.205 | | | |
| 411 | awful! → | | | | | | | 600 " | | at times image is 2X slit length | |
| | | | | | | | | " | | Clouds | |
| | | | | | | | | 800 μ 0.185 | | ↓ | |
| | | | | | | | | 800 μ 0.185 | | | |
| | | | | | | | | 800 μ 0.185 | | | |
| 3500 | | B 4.54 ↓ | | | | | | 600 μ 0.205 | E Tan | | |
| 3500 | | B 4.54 | | | | | | | | Focus: 2235 | |

157

(cont'd)

Date 1990 Dec 8/9 Observers Srt/Pdr

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|----------|--------------|---------------------|---------------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 01778 | HD 48329 | 06 37 47 | +25 13 49 | 01 ^h 58 ^m | 02 07 19 | 0 17 W | | | |
| 01779 | Comp | | | | | | | | |
| 01780 | HD 48329 | " " | " " | 02 09 | 02 18 13 | 0 28 W | | | |
| 01781 | Comp | | | | | | | th A | 5s |
| 01782 | Comp | | | | | | | th A | 5s |
| 01783 | HD 62509 | 07 39 12 | 28 16 04 | 02 24 55 | 02 26 55 | 0 24 E | | | |
| 01784 | HD 62509 | " " | " " | 02 27 35 | 02 29 04 | 0 22 E | | | |
| 01785 | Comp | | | | | | | th A | 5s |
| 01786 | Comp | | | | | | | th A | 6s |
| 01787 | HD 62509 | 07 39 12 | 28 16 04 | 03 00 | 03 04 33 | 0 13 W | | | |
| 01788 | HD 62509 | " " | " " | 03 07 37 | 03 16 21 | 0 25 W | | | |
| 01789 | Comp | | | 03 17 | | | | th A | 6s |
| 01790 | Comp | | | 03 23 | | | | th A | 6s |
| 01791 | HD 48329 | 06 37 47 | +25 13 49 | 03 25 | 04 00 | 2 10 W | | | |
| 01792 | Comp | | | | | | | th A | 6s |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

3500 fair

23/4
22/4

3500

500

500

6029

6500

4666

Spectr. Temp. Dome Temp./Hum. $0.0^{\circ}\text{C} / 67.2\%$ Transparency Conditions *Clear* 158

Focus

Spectr. Temp. Dome Temp./Hum. *slit height*

| Unison Exp. | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-------------|-----------|-------------------------|-----------|-----|----------------|--------------|-------------------|----------|--------------------|-------------|---|---------|
| | 3500 | fair | B 4.38 | | CCD echelle | 19.1 | 70 μ 0.273 | | 600 μ 0.205 | E Gem | X grating: 0.3962 Setting for Ca II K line | |
| | 3500 | <i>~3/4 slit length</i> | B 4.38 | | | | | | | | | |
| 5s | | | | | | | | | | | | |
| 5s | | | | | | | | | | | | |
| | 3550 | | B 2.14 | | | | | | | β Gem | | |
| | 3500 | | " | | | | | | | " " | | |
| 5s | | | | | | | | | | | | |
| 6s | | | | | | 19.2 | 90 μ 0.265 | | | | X grating: 0.50000 | |
| | 10029 | | | | | | | | | β Gem | | |
| | 20000 | | | | | | | | | " " | | |
| 6s | | | | | | | | | | | | |
| 6s | | | | | | | | | | | | |
| 6s | 14606 | | | | | | | | | E Gem | | |

159

Date P990 Dec 8/9 Observers Srl/Pdr

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter Exp. | |
|------------------|-----------------|--------------|---------------------|-------------------------|-----------------------|--------------------------------------|-------------|--------------------------------|-----|
| ce 01793 | Comp | | | | | | | ThA | 6s |
| 01794 | HD62509 | 07 39 12 | 28 16 04 | 04 23 | 04 43 | 1 ^h 52 ^m W | | | |
| 01795 | Comp | | | | | | | | |
| 01798 | Flat Fields | | | | | 1 ^h 52 ^m W +28 | | | 90s |
| 01800 | Bias (4) | | | 05:03 | | | | | |
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Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Secing

54660

Spectr. Temp. Dome Temp./Hum. $-0.1^{\circ}\text{C}/72\%$ Transparency Conditions *clear* (60).....

Focus

Spectr. Temp. Dome Temp./Hum. *slit height*

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|--------------------------|--------|-----------|-----|-------|--------------|-------------------|----------------------|--------------------|---------|------------------|---------|
| 6S | | | | | 19.2 | 90 μ 0.265 | N4030A order #141 | 600 μ 0.205 | | x grating 0.5000 | |
| 54000 | | | | | | | | 800 μ 0.185 | | | |
| 90S | | | | | | | | | | | |
| <i>Backed up to WORM</i> | | | | | | | | | | | |

161

Date 1990 Dec. 9/10 Observers Srt/Pdr

Emulsion Batches:

.....

| 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. |
|----------------------------|---------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce 01801 01802 01803 | Bias (L) Dark 15 min Comp | | | 18:09 | | | | Th A | |
| 01804 | HD 4614 | 00 43 03 | +57 17 06 | 18:11 | 18:41 | 1 11 E | | | |
| 01805 | Comp | | | | | | | Th A | |
| 01806 01809 | Flat Fields | | | | | 1 00 E | +54.5 | | 90s |
| 01810 | Comp | | | 21 43 | | | | Th A | 6s |
| 01811 | HD 21120 | 03 19 26 | 08 40 37 | 21 45 | 22 15 | 0 12 E | | | |
| 01812 | Comp | | | | | | | Th A | |
| 01813 | HD 21120 | " " | " " | 22 17 | 22 30 30 | | | | |
| 01814 | Comp | | | | | | | Th A | |
| 01815 01818 | Flat Fields | | | 22 35 | | 00 05 W | +9° | | 30s |
| 01819 | Comp | | | | | | | Th A | 5s |
| 01820 | HD 29139 | 04 30 11 | 16 18 30 | 23 03 | 23 05 24 | 0 33 E | | | |
| 01821 | HD 29139 | " " | " " | 23 06 | 23 07 49 | 0 30 E | | | |
| 01822 | Comp | | | | | | | Th A | 5s |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

2542 Per

2595

546

Spectr. Temp. Dome Temp./Hum. $5.5^{\circ}\text{C} / 61.5\%$ Transparency Conditions *Partly cloudy* 162

Focus

Spectr. Temp. Dome Temp./Hum. *Slit Height*

& cloudy

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|-----|-------------|--------------|-------------------|---|--------------------|--------------|------------------------------|---------|
| | | | | CCD echelle | 19.2 | 90 μ 0.265 | 4000 - 4053 \AA order #141 | 600 μ 0.205 | η Cas | x grating @ 0.5000 | |
| 2542 | Poor | | | | | | | | | | |
| | | | | | | | | 800 μ 0.185 | | clouded over | |
| | | | | | | | | | | Clear Patches. \rightarrow | |
| | | | | | 19.1 | 70 μ 0.273 | 5190 - 5150 \AA order #110 | 600 μ 0.205 | | x grating @ 0.3962 | |
| 2595 | | | | | | | | | α Tau | Mg lines setting | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | Clouds again! | |
| | | | | | | | | | α Tau | | |
| | | | | | | | | | " | | |
| | | | | | | | | | | | |
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anison
Exp.

90s

6s

30s

5s

5s

163

(cont'd)

Emulsion Batches:

Date 1990 Dec 7/10 Observers Srt/Pdr

| 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. |
|-----------|-------------------|--------------|---------------------|-------------------------|-----------------------|---------------------|-------------|---------------------------|------|
| 01823 | Comp | | | | | | | Th A | 6s |
| 01824 | HD 29139 | 04 30 11 | 16 18 30 | 23 17 10 | 23 29 25 | 0 ^h 12 E | | | |
| 01825 | HD 29139 | " " | " " | 23 25 30 | 23 37 22 | 00 ^h | | | |
| 01826 | Comp | | | | | | | Th A | 6s |
| 01827 | Comp | | | | | | | | 6s |
| 01828 | HD 21120 | 03 19 26 | 08 40 37 | 00 13 | 00:28 | | | | |
| 01829 | Comp | | | 00 29 | | | | Th A | 6s |
| 01830 | Comp | | | 01 46 | | | | Th A | 6s |
| 01831 | HD 29139 | 04 30 11 | 16 18 30 | 01 43 | 02 23 | 2 55 W | | | |
| 01832 | Comp | | | | | | | Th A | |
| 01833 | HD 29139 | " " | " " | 02 36 | 03 21 | 3 44 W | | | |
| 01834 | Comp | | | | | | | | |
| 01835 | Flat Fields | | | | | 3 ^h W | +16 30 | | |
| 01838 | Bias (4) | | | | | | | | |
| 01839 | Bias (4) | | | | | | | | |
| Cef 34/35 | Hardmann - IN/OUT | | | | | | | Th A | 20 |
| 36/37 | " | | | | | | | | |
| 38/39 | " | | | | | | | | |

} with 2mm GG13 filter
all bias subtracted before writing

Spectr. Temp.

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

5170

2500

1633

11630

5000

Spectr. Temp. Dome Temp./Hum. *4.7°C / 66.3%* Transparency Conditions *Partly cloudy* 161...

Focus

Spectr. Temp. Dome Temp./Hum. *slit Height*

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|----------------|-----|-------------|--------------|--------------|-----------------------------|---------------|---------|---------------------------------------|---------|
| 65 | | | | CCD Echelle | 19.2 | 90μ 0.265 | 4000- ₃ 4053A | 600μ 0.205 | | x grating @ 0.5000 Ca II K setting | |
| 5170 | | B 2.14 | | | | | order #141 | | α Tan | | |
| 25200 | | " | | | | | | | α Tan | | |
| 65 | | | | | | | | | | | |
| 65 | | B 4.49 | | | | | | | | clouded in | |
| 65 | | | | | | | | | | | |
| 65 | | B 2.14 ↓ | | | | | | | | | |
| 116630 | | | | | | | | | | | |
| 89000 | | | | | | | | | | | |
| | | | | | | | | | | | slit |
| 20 | | | | | | | | | | F = 0.225 | 1.17 |
| | | | | | | | | | | F = 0.200 | - .66 |
| | | | | | | | | | | F = 0.210 | - .31 |

Temp = +3.7°C

165

Date 1990 Dec 10/11 Observers Srt/Pdr

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|--------------------------------------|--------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 01840 01840 | Comparison Bias (4) | | | | | | | | |
| 01841 | Comparison | | | | | | | GG385 | 55 |
| 01842 | HD 4614 | 00 43 03 | 57 17 06 | 18:37 | 18:47 | 1 02 E | | GG385 | |
| 01843 | HD 4614 | " " | " " | 18:49:35 | 19:00 | 0 50 E | | " | |
| 01844 | Comp | | | 19:01 | | | | " | |
| 01845 | Comp | | | 19:12 | | | | " | |
| 01846 | HD 17878 | 02 47 10 | 52 21 12 | 19:14 | 19:39 | 2 14 E | | " | |
| 01847 | Comp | | | 19:40 | | | | " | |
| 01848 | Dark 15m | | | 19:53 | | | | " | 15m |
| 01849 | Comp | | | | | | | " | |
| 01850 | HD 29139 | 04 30 11 | 16 18 30 | 21:01 | 21:08 50 | 2 26 E | | " | |
| 01849 | Comp | | | | | | | " | |
| 01850 | HD 29139 | " " | " " | 21:13 | 21:15 | 2 20 E | | " | |
| 01851 | Comp | | | | | | | " | |

Spectr. Temp.

Focus... 0.210...

Spectr. Temp.

Exp. Mtr. Seeing

Poor

280

876

450

3

600

120

157

(cont'd)

Date 1990 Dec 10/11 Observers Sest/Par

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-------------|----------|--------------|---------------------|-------------------------|-----------------------|--------------------------------|-------------|---------------------------|------|
| ce 01852 | Comp | | | | | | Th A | GG285 | |
| 01853 | HD21120 | 03 19 26 | 08 40 37 | 21 27 | 21 51 | 0 33 E | | " | |
| 01854 | Comp | | | | | | Th A | " | |
| 01855 | Dark 15m | | | 21 56 | | | | " | |
| 01856 | Comp | | | 22 20 | | | Th A | " | |
| 01857 | HD 23249 | 03 38 27 | -10 06 06 | 22 30 | 23 00 | | | " | |
| 01858 | Comp | | | 23 07 | | | Th A | " | |
| 01859 | Comp | | | 23 09 | | | Th A | " | |
| 01860 | HD 28305 | 04 22 46 | 18 57 31 | 23 11 39 | 23 32 | 0 ^h 05 ^w | | " | |
| 01861 | Comp | | | | | | Th A | " | 5s |
| 01862 | Dark 15m | | | 23 37 | | | | | 15m |
| 01863 | Comp | | | 00 04 | | | Th A | | |
| 01864 | HD 48329 | 06 37 47 | 25 13 49 | 00 05 | 00 21 20 | 1 21 E | | | |
| 01865 | Comp | | | | | | Th A | | |
| 01866 | Dark 15m | | | | | | | | 15m |

Spectr. Temp.

Focus

Spectr. Temp.

Exp. Mtr. Seeing

111

1100

32

25

Spectr. Temp. Dome Temp./Hum. $-2.2^{\circ}\text{C}/56.8\%$ Transparency Conditions *Partly cloudy* 168

Focus

Spectr. Temp. Dome Temp./Hum. *Slit height*

parison
Exp.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-------------------------|-----|----------------|--------------|-------------------|------------------|--------------------|---------|-------------------|---------|
| | | 3.60 3.60 | | CCD echelle | 18.54 | 60 μ 0.277 | 6590 - 6719 Å | 600 μ 0.205 | | x grating: 0.2834 | |
| 77 11 | Poor | 3.60 | | | | | order #86 | | o Tau | | |
| 1100 | | ✓ 3.54 | | | | | | | f Eri | | 5000 |
| 632 | | ✓ 3.53 | | | | | | | e Tau | | |
| 125 | | ✓ 2.98 | | | | | | | e Glm | | |

5s

15m

15m

169

Date 1990 Dec 10/11 Observers Srt/Pdr

Emulsion Batches:

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Spectr. Temp. ...

Focus

Spectr. Temp. ...

| 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. |
|--------------------------|-------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce 01867 } 01870 } | Flat Fields | | | 01:55 | | 1 00 E | +55° | | |
| 01871 } 01874 } | Flat Fields | | | 02 05 | | 1 00 E | +20° | | |
| 01875 } 01878 } | Flat Fields | | | | | 1 00 E | 00° | | |
| 01879 | Dark 15m | | | 02:24 | | | | | |
| 01880 | Bias (4) | | | | | | | | |
| L Perseus ok | | | | | | | | | |
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Exp. Mtr. Seeing

171 pg #1

Thurs / Fri

service for Srt

Emulsion Batches:

Date 1990 Dec 13/14 Observers T.H. mki. c. lec. Rm

| 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. |
|-----------------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| ce 01881.FTS | Comp | | | 22 55 | | | | GG385 | 5 sec |
| 01882.FTS | 40 23249 | 03 3827 | -10 06 06 | 22 58 | 23 28 | 00 58 W | | | |
| 01883.FTS | Comp | | | | | | | | 5 sec |
| 1884 | Comp | | | | | | | | 5 sec |
| 1885 | HD 62509 | 07 3912 | +28 16 04 | 23 42 | 23 48 | 02 42 E | | | |
| 1886 | Comp | | | 23 57 | | | | | 5 sec |
| 1887 | Comp | | | | | | | | 5 sec |
| 1888 | HD 28305 | 04 2246 | +18 57 31 | 00 03 | 00 26 | 01 11 W | | | |
| 1889 | Comp | | | 00 28 | | | | | 5 sec |
| 1890 | Comp | | | 00 31 | | | | | 5 sec |
| 1891 | HD 48329 | 06 3747 | +25 13 49 | 00 34 | 00 55 | 00 36 E | | | |
| 1892 | Comp | | | | | | | | 5 sec |
| 1893 | Comp | | | | | | | | 4 sec |
| 1894 | HD 87901 | 10 0303 | +12 27 | 01 05 | 01 16 | 03 39 E | | | |
| 1895 | Comp | | | | | | | | 4 sec |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

1240 v*
page1780 v
page1400 v
page1500 v
page2760 v
page

Spectr. Temp. Dome Temp./Hum. -3°C ... 57% Transparency Conditions ... Clearing - gusty ...

Focus pg#1 cooling Fast 172

Spectr. Temp. Dome Temp./Hum. Slit height [90 C gain] CCD Temp $\rightarrow -100^{\circ}\text{C}$

| Exp. Mtr. | Seeing | Ex. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. Height | Program | Remarks | MAX Quality |
|-----------|------------|-----------|-------------------|-------------|--------------|-------------------|----------------|--------------------|------------|---|-------------|
| | | | | Echelle CCD | 18.54 | 60 μ 0.277 | 6590- 6719Å | 600 μ 0.205 | X gratings | * X gratings • 283A ORDER 86 centered | 14000 |
| 1240 | V* poor | V 3.54 | KO II | | | | | | Srt pgm | * image Dio \rightarrow slit height | 5200 |
| 1780 | VV poor | V 1.15 | KO III | | | | | | Srt pgm | | 8800 |
| 1400 | V poor | V 3.53 | KO III | | | | | | Srt pgm | Dome T = -65°C | 5500 |
| 1600 | VV poor | V 2.98 | G8 Ib | | | | | | | 66em | 5500 |
| | | | | | | | | | | Of course, a few Comp lines are saturated | |
| 2760 | VV poor | V 1.35 | B7 V _H | | | | | | | α Leo A | 5000 |

#2

173

Date .1990..Dec.13/14... Observers Jr......

Emulsion Batches:

| 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. |
| ce 01896 | Bias(4) | } | | 01 31 | | | | | |
| 1897 | DARK 15min | | | | | | | | |
| 1898 | Bias(4) | | | | | | | | |
| 1899 | DARK 15min | | | | | | | | |
| ce01900 - 1903 | Flats(x4) | | | 02 ^m 30 | | 0 0 | 0° | G6385 | 5 sec |
| ce01904 - 1907 | Flats(x4) | | | | | 0 0 | +20° | " | " |
| | | | | | | | | | |
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Spectr. Temp. ...
 Focus.....
 Spectr. Temp. ...

Exp. Mtr. Seeing

Spectr. Temp. Dome Temp./Hum. ~~6°C 55%~~ ^{6°C 55%} Transparency Conditions ... ~~still clear~~ ^{still clear} ... 174.

Focus P442

Spectr. Temp. Dome Temp./Hum. slit height

Echelle Focus all night.
still set @ 0.210
note: prob not ideal for this

inison
Exp.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Tempo | Quality |
|--------------------------------------|--------|-----------|-----|----------------|--------------|-------------|----------------|-------------|---------|---------|------------------|---------|
| | | | | Echelle CCD | 18.54 | 60μ .277 | 6590- 6719A | | | | x grating 0.2834 | |
| 5 sec | | | | | 18.54 | 60μ .277 | | 80μ .185 | | | | 10000 |
| " | | | | | | | | 80μ .185 | | | | 9500 |
| All backed up to Perseus CCD/Echelle | | | | | | | | | | | | |
| Good Geminid meteor shower | | | | | | | | | | | | |

175

Date 1990 Dec 14/15 Observers K.K. (afternoon) / Tm.

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|--|--------------------------|-------------------------|---------------------|-------------------------|-----------------------|-------------------|----------------|---------------------------|-----------------|
| Fit 722 | flat | — | — | | 17 12 | 0 0 | platform | w/clear | 3600 |
| 1990 Dec 16/17 Sun - mon ↓ Tm [speckle setup unchanged from Dec 14/15 setup] | | | | | | | | | |
| 723 KK Flat | Diffuser IN (no f stop) | | | 20 51 37 | 22 | 2 34 W | +16 34 | clear | 3700 |
| Cet 201 FTS | BIAS (4) | FOR Shen [bands] | | 90 C gain, T = -130°C | | | | | |
| Cet 202 FTS | BIAS (1 only) | | | 0 C gain T = -130 | | | | | |
| Fm 294 Tm | HD 25 022 | 03 53 4 | +39 44 | 22 22 | | | | | Int "N" make |
| Fit 724 | Comp | Diffuser OUT | | 22 27 | | | no f stop | FENE clear | ~600 |
| Fit TAG 725 | HD 34029 | 05 09.3 | +45 54 | 22 50 | 23 06 | 00 44 E | | | 947 |
| Fit 726 | Comp | Diffuser out | | 23 11 | | | no f stop | FENE clear | 660s |
| Cet 203 FTS | BIAS | @ 30 C gain, T = -130°C | | | | | | | |
| Cet 204 FTS | BIAS | @ 90 C gain, T = -130°C | | Bin of Column change | | | | | |
| Fit TAG 727 | HD 34029 | 05 09.3 | +45 54 | 00 08 | 00 23.5 | 00 32 W | cloud again | | 910 |
| Fm 295 Tm | HD 34029 (on Fiber hole) | 4 Frames | | 00 25 | | 00 33 W | | | Int x0 |
| Fit 728 | Comp | Diff out | | 00 30 | | | | FENE clear | 600s |
| Fit 729 | Flat | Diffuser IN | | 00 45 | 01 49 | no f stop | Diff IN | Tung clear | 3600 |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

160/400

A * B

200/510

Real Time

415/420

70/180 peak

415/420

80/300 * 50s

"i" make

415/420

80/470

Spectr. Temp.

Dome Temp./Hum.

Transparency Conditions .. Clouding in Fast at ..

Focus

fibers 0.05 , 355°

sun down.

176

Spectr. Temp.

Dome Temp./Hum.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|------------------|-----------|-------------|-----------------------------------|----------------|---------|----------|------------------------------|-----------------------------------|---|---------|
| 3600 | 160/400 | | | | 1800/47 | 300µ | 4250 | | | bad channel ratio | |
| 3700 | A * B 200/510 | | | PTS spackle CCD Ewell/10 | 1800/47 | 300µ | 4250A | | Dome T = 0°C Flat for Spectile | PART CLEAR * At ~ 3000 secs, Tel moved to Puak To open up At platform A = 140 cuts B = 360 cuts | |
| Int N | Real Time | V 7.84 | AOI | Dome SW | | | | Fiber Head @ Rack = 12000 | | seeing Test with EEV CCD Guide Camera | |
| 3800 | 215/420 | | | PTS spackle | 1800/47° | 300µ | 4250A | | | | |
| 3900 | 70/180 | poor | B = +0.7 | G8III + F | " | " | " | | Asm Sp Kk | Rack for guiding ideal at " 11600 " | |
| 6600 | 215/420 | | | CCD Ewell/10 | " | " | " | | | Cloud coming fast | |
| | | | | " | 0 0 | 128 | 1024 | 8 | | CCD FMT (after test were 4 1) | |
| 9100 | 80/200 | * 5050 | B = +0.7 | G8III + F | PTS spackle | 1800/47 | 300µ | 4250A | | * will take a frame on hole. | |
| Int X0 | " mode | | [single Dos | after rebo | to fmk m] | | | Fiber Head | | Optical Rack @ " 11,800 " for guide mode | |
| 6000 | 215/420 | | | PTS spackle | 1800/47 | 300µ | 4250A | | | | |
| 3900 | 180/470 | | | " | " | " | " | | | Dome T = 3°C H = 85% | |

177 pg#1

Emulsion Batches:

Date . 1940 Dec 19/20. Observers .. J.M. / M.K.I.

Diffuser: 1N. for all. ~~some~~ Flats

| 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. |
| FIT 00730 | MKI Flat | | | 16 06 | 17 08 | 0 0 | ND 2.2 | TUNG A=1/2 | |
| 731 | Comp | | | 17 19 | | | ND 0.2 | FeA A=1/2 | 200 |
| 732 | BMCas | 00 48 36 | +63 33 | 17 39 | 18 12 | 01 05 E | none | | |
| 733 | Comp | | | 18 14 | | | ND 0.2 | FeA A=1/2 | 200 |
| FM 2967n | BMCas (Seeing test) ^{Before previous comp} | 00 48 36 | +63 33 | 18 13 | | 01 04 E | none | "n" 1/2" x 4 | +117 |
| 734 | Comp | | | 18 23 | | | ND ^{0.6} +0.2 | FeNe A=1/16 | 200S |
| 735 | BMCas | 00 48 36 | +63 33 | 18 28 | 19 29 | 00 11 W | no filter | | |
| 736 | Comp | | | | | Dr | ND 0.8 | FeNe A=1/16 | 200S |
| FIT TAG 737 | V471 Tau | 03 44 33 | +16 57 06 | 19 42 | 20 19 | 01 54 E | no filter | | |
| FIT 738 | V471 Tau Comp | " | " | 20 19 | 21 09 | 01 04 E | no filter ND 0.8 | FeNe A=1/16 | |
| 739 | " | " | " | 21 09 | 21 39 | 00 35 E | " | | |
| 740 | " | " | " | 21 41 30 | 22 11 40 | 00 02 E | " | | |
| 741 | " | " | " | 22 12 12 | 22 42 30 | 00 29 W | " | | |
| 742 | Comp | | | | | | ND 0.8 | FeNe A=1/16 | 200S |
| FIT TAG 743 | MWC 560 | 07 21 | -07 32 | 22 51 | 23 38 30 | 02 9 E | no filter | | |

Spectr. Temp. ...

Focus.

Spectr. Temp. ...

Exp. Mtr. A B

Seeing

50 2350

5 110

10 200 poor

5 100

55/55 1/2" x 4

5 130

5/70

5/80

5/100

25/100 poor

25/100

25/100

20/105

5/110 poor

5/80

5/80 poor

171
py#2

Date ..1.9.90..D.ec.19/20 Observers ..M.Ki./T.H.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-------------|-----------------|--------------|---------------------|-------------------------|-----------------------|---------------------|-------------|---------------------------|-------|
| 744 | Comp | | | | | | ND 0.8 | FeNe A=1/6 | 200s |
| 745 | Comp | | | | | no filters | F18 stop | FeA clear | 200s |
| 746 | V47H Tau | 03 44 33 | +16 57 06 | 23 54 19 | 00 25 | 01 12W no filter | no filter | | |
| 747 | Comp | | | | | no filter | F18 stop | FeA clear | 200 |
| 748 | Comp | | | 00 55 | | | ND 0.2 | FeA A=1/2 | 200 |
| FIT TAG 749 | MWC 560 | 07 21 | +7 32 | 00 00 | 02 41 | 0056W | no filter | | |
| 750 | Comp | | | | | | ND 0.2 | FeA H=1/2 | 200 |
| 751 | Flat | | | 02 50 | 03 53 | | IND 2.2 | TUNG H 1/2 | |
| 752 | Comp | | | 04 07 | 04 12 | 0 0 | ND 2.2 | FeNe A=1/2 | |
| 753 | Flat (contimer) | | | 04 14 | | 0 0 | ND 2.2 | TUNG A 1/4 | 3 hrs |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

2/40

2/40

v
pear

200

200

5/200

200

5/120

8/90

3 hrs

15/1500

Spectr. Temp. Dome Temp./Hum. $-6^{\circ}C$ 75%

Transparency Conditions ... Clear - 2/19/26 180

Focus pg #2 Dec 19/26

Sudden complete cloud.

Spectr. Temp. Dome Temp./Hum. $+7^{\circ}C$ 78%

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-------------|--------|-----------|-----|--------------|--------------|------|----------|------|---------|---|---------|
| 205 2/140 | | | | PTS Red Coll | 1800/627 | BS | 6580A | | | | |
| 205 2/140 | | | | n | ii | u | n | | | | |
| | v poor | VHR = 10 | KOV | n | v | v | ii | | | | |
| 200 | | | | n | ii | n | n | | | | |
| 200 10/140 | | | | n | 1800/50.8 | n | 4820 B | | | | |
| 5/200 | | v = 10 | M | n | n | v | n | | | cloud @ 2:38 diminished signal. | |
| 200 5/120 | | | | n | n | n | n | | | | |
| 50/2700 | | | | n | v | n | n | | | | |
| 8/90 | | | | n | 1800/627 | n | 6580A | | | | |
| 315 25/1500 | | | | n | n | n | n | | | All Fits Tugs to date bucketed up on Perssons PCS/mki | |

All
 Bucket up on Perssons / PCS / mki
 TO FIT 752
 + All Fits Tugs to date bucketed up on Perssons PCS/mki

#1
181

Thurs - Fri

Date 1990 Dec 20/21 Observers M.Ki./Tn./Pdr.....

Emulsion Batches:

Diffuser 1n for sources

| 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. |
| FIT 00754 MKI | Flat (short one) | | | 20 05 | 20 18 | | ND 2.0 | Tung A-1/4 | |
| 755 | Comp | | | | | | F18 stop | F18A Clear | 200 |
| 756 | BM Cas | 00 48.6 | +63 33 | 20 27 | 21 29 | 2 15 W | no filter | | |
| 757 | Comp | | | | | | f18 stop | FeA Clear | 200 |
| 758 | V471 Tau | 03 44 33 | +16 57 06 | 21 39 | 22 09 | 00 17 W | | | |
| 759 | " | " | " | 22 09 | 22 39 30 | 00 48 W | f18 stop | FeA Clear | 200 |
| 760 | " | " | " | 22 40 | 23 10 | 01 18 W | | | |
| 761 | Comp | | | | | | f18 stop | FeA Clear | 200 |
| Fm. 297 Pdr | HD 29587 | 04 34.5 | +41 57 | 23 20 | (4 Frames) | 00 18 W | = +42° | Int x 4 | |
| 762 | HD 29587 | " | " | 23 22 | 23 35 | 00 33 W | | | |
| 763 | Comp | | | | | | f18 stop | FeA Clear | 200 |
| 764 | V471 Tau | 03 44 33 | +16 57 06 | 00 11 | 00 11 | 02 02 W | | | |
| 765 | " | " | " | 00 11 | 00 41 | 02 32 W | | | |
| 766 | Comp | | | | | | f18 stop | FeA Clear | 200 |
| FIT TAG | MWC 560 | 07 21.0 | -7 32 | 00 49 | 02 06 | 00 20 W | | | |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. B Seeing

30 1700

10 40

5 80 OK

8 80

5 100

10 110

30

OK

1600

45

300 < 3"

300 < 3"

45

100 4"

Spectr. Temp. Dome Temp./Hum. -1°C 90%

Transparency Conditions ... S1 Hazy

Focus pg#1 Dec 20/21

182

Spectr. Temp. Dome Temp./Hum. 0° 88%

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-------------------|-----|--------------|--------------|-----------------------|-----------------|------|-------------|--------------------------------------|---------|
| 30 1700 | | | | PTS Red Coll | 1800/62.7 | BS | 6580Å | IB | | | |
| 10 40 | | | | | | | | | | | |
| 5 80 | OK | VAR $\approx V=9$ | M6 | | | | | | | | |
| 8 80 | 5050 | VAR ≈ 9.5 | KOV | | | | | | | * seeing = 4 if 200µ hole is 2.4 dia | |
| 5 100 | | | | | | | | | | | |
| 10 110 | | | | | | | | | | | |
| 5 1600 | 3" OK | V 7.29 | dG2 | "N" mode | Regular Dome | Fairchild Camera West | 200µ Fiber Head | | Seeing test | Hazy, Medium East wind | |
| 5 45 | | | | | | | | | | | |
| 5 200 | <3" | VAR ≈ 9.5 | KOV | | 1800/62.7 | | 6580Å | | | | |
| 5 200 | <3" | " | " | | | | | | | | |
| 5 45 | | | | | | | | | | | |
| 10 100 | 4" | VAR ≈ 10 | M | | | | | | | part cloudy | |

#2

Thurs FRI

163

Date 1990 Dec. 20/21...

Observers ..Tn.../Pdr.....

Emulsion Batches:

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Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

| 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. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| FIT00768 | Comp. | | | | | | f18stop | FeA Clear | 200 |
| 769 | HD 86986 | 09 57 | 45 04 | 02 16 30 | 02 50 38 | 01 28 E | | | |
| 770 | Comp | | | | | | f18stop | FeA Clear | 200 |
| 771 | Flat | | | 03 18 | | 0 0 | ND 200 | TUNG A=1/4 | 3hrs |
| | | | | | | | | | |
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Exp. Mtr. B

Seeing

4 40

10 400 4"

5 45

35 200

Spectr. Temp. Dome Temp./Hum.

Transparency Conditions ... *Clouding in*

Focus *Py #2 Dec 20/21*

184

Spectr. Temp. Dome Temp./Hum. *+1°C 85%*

| Exp. | Exp. Mtr | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-------------|----------------|-----------|-----------|-----|---------------------|-----------------|-----------|-------------|------|---------|--|---------|
| <i>4</i> | <i>40</i> | | | | <i>PTS Red Coll</i> | <i>1800/627</i> | <i>BS</i> | <i>6580</i> | | | | |
| <i>10</i> | <i>400</i> | <i>4"</i> | | | | | | | | | | |
| <i>5</i> | <i>45</i> | | | | | | | | | | <i>FT 0077</i> | |
| <i>3/12</i> | <i>35 2200</i> | | | | | | | | | | <i>All fits backed up to floppy to hard,</i> | |
| | | | | | | | | | | | <i>to end now TA</i> | |

pg#1 Wed-Thurs
 Date 1990 Dec 26/27 Observers KK/Pdr./T.n.....

Emulsion Batches:

.....

| 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. |
|-----------|----------------------------------|--------------|---------------------|-------------------------|----------------------------|-------------------|-------------|---------------------------|------|
| FIT00772 | Flat [For speckle later on] | | | 15:27 | Diffuser IN no f18 stop | 0 0 | platform | Tung clear | 7200 |
| ce01908 | Comp [0 0 256 1024 4 1 CCD FWHM] | 90 CGAIN | | 19 12 | | 01 20 E | polaris | ThA | 20s |
| 1909 | HD 8890 | 01 22 06 | +88 46 | 19 16 40 | 19 33 33 | 0 57 E | | | |
| 1910 | " " | | | 19 39 13 | 20 05 | 0 29 E | | | |
| 1911 | Comp | | | | | | | ThA | 20s |
| 1912 | BIAS(4) | Average of 4 | | 20 15 | | | | | |
| 1913 | Comp | | | | | | | ThA | 20s |
| 1914 | HD 12929 | 02 01 32 | +22 59 | 20 23 30 | 20 45 | 00 41 W | | | |
| 1915 | Comp | | | | | | | ThA | 20s |
| 1916 | Comp | | | | | | | ThA | 20s |
| 1917 | HD 29139 | 04 30 11 | +16 18 | 20 56 15 | 21 07 29 | 01 25 E | | | |
| 1918 | Comp | | | | | | | ThA | 20s |
| 1919 | [Dark BAT] | BIAS(4) | | 21 13 05 | | | | | |
| 1920 | DARK 15m | | | | | | | | |
| 1921 | BIAS(4) | | | | | | | | |

Spectr. Temp. ...
 Focus
 Spectr. Temp. ...

Exp. Mtr. Seeing

20 600

200 10

1000 ok

1500 ok

2-3000

2000 OK

ok

Spectr. Temp. Dome Temp./Hum. $-6.9 / 53.2\%$ Transparency Conditions *Clear* 186

Focus *pg #2 Dec 26/27*

fibers 0.055 30° P.A.
Dome T = -11 at Sundown MAX

Spectr. Temp. Dome Temp./Hum.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | ADCU Quality |
|-----------|--------|-----------|-----|-------------|--------------|-----------|----------|-----------------------|--|--|--------------|
| 500 600 | | | | speckle | 1800/48.0 | 300 μ | 4250Å | | | | |
| | | | | CCD Echelle | 18.60 | 80 μ | 4500Å | Slit Height 400 μ | KK pgm | [Xgrating 4555] T = -12° Echelle focus ≈ 0.200 | |
| 10000 | *OK | ~2 | F | | | | | 400 μ = 0.275 | KK | 0 0 256 1024 9 1 | 5000 |
| 15000 | OK | ~2 | F | | | | | | * TV IMAGE out of focus but seeing good | | 10000 |
| ~3000 | | | | | | | | | LARI std vel | (1 cosmic ray spot) Km/sec -14.3 ± 0.2 | 161 |
| 12000 | OK | V 2.00 | K2 | | | | | | LARI std vel | -14.3 ± 0.2 | 7000 |
| | OK | V 0.85 | K5 | | | | | | std vel | +54.1 \pm 0.1 rec for (1401) intensity 0.15 | 8400 |

py #2 Wed-Thurs

Date 1990 Dec 26/27 Observers Pdr./T.h.....

Emulsion Batches:

.....

| 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. |
|-----------|-----------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CE01922 | DARK 15min | | | | | | | | |
| FIT00773 | Comp | Diffuser OUT | | | | 01 08E | no F18 stop | FeNe clear | 60s |
| FIT00774 | HD34 029 | 05 09.3 | +45 54 | 22 17 03 | 00 17 03 | 01 06W | | | |
| FIT00775 | Comp | Diffuser out | | | | | no F18 stop | FeNe clear | 600s |
| FM 298 | HD 52860 | 06 57 39 | +47 55 21 | 00 50 | | 00 00 | +47 51 | Int x 4 | |
| CE01923 | BIAS (4) | | | 00 49 | | | | | |
| 1924 | Comp at Capella pos'n | | | | | | | ThA | 20s |
| 1925 | HD 34029 | 05 09.3 | +45 54 | 01 19 42 | 01 25 50 | 02 14W | | | |
| 1926 | Comp | | | | | | | ThA | 20s |
| 1927 | Comp | | | | | | | ThA | 20s |
| 1928 | HD 47105 | 06 31.9 | +16 29 | 01 34 40 | 02 06 | 01 33W | | | |
| 1929 | Comp | | | | | | | ThA | 20s |
| 1930-1933 | Flats 4 (echelle cd) | | | 02 25 | | 01 34W | +16 29 | JUNG | 40s |
| 1934-1937 | Flats 4 | | | 02 47 | | 00 00 | +65 00 | | |
| FIT00776 | Flat for speckle | | | Diffuser IN | | | | JUNG clear | 3hrs |

backed up to insert

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. #12

A/B

20/20

150/150

15/15

11 made 50s

11 000

800 ok

55/150

Spectr. Temp. Dome Temp./Hum. -13°C 62% RH
 Focus py #2 Dec 26/27
 Spectr. Temp. Dome Temp./Hum. -14°C 65%

Transparency Conditions *S! hazy - cloudy* 188

CCD Temp = -100°C

| Exp. | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-------|----------------|--------|------------|----------|----------------------------|----------------------------|-----------|--|---------------------|--------------------------------|--------------------------------|-----------------------------|
| | A/B | | | | PTS Speckle | CCD Edeltestill | | | | | | |
| 600s | A/B 20/20 | | | | PTS Speckle | 1800/480 | 300 μ | 4250A | | Fibers 9055"; 30 $^{\circ}$ PA | | |
| | 120/150 | poor | B- 0.58 | G4 +F | " | " | " | " | | AsmSp-KK | * Counts to 300 (both A&B) | |
| 600s | 15/15 | | B- 0.80 | | " | " | " | " | | | | |
| 4 | 'N' made" | so so | | | 4 frames Echelle CCD | Echelle tilt 18060 | 80 μ | speckle Fiberhead control 4500A | slit # 400 μ | Seeing test | Dome WNW | [Light med west WIND] |
| 1000s | 10000 | | B- 0.88 | G4 +F | | | | | | AsmSp-KK | Clouding in | 8000 |
| 2000s | 7800 | OK | B 1.9 | H0IV | | | | | | AsmSp-KK | | 6000 |
| 4000s | | | | | | | 40 μ | | 600 μ 2059et | | CCD T = -102°C | 12000 |
| 3hr | 550/650 | | | | PTS Speckle | PTS Speckle 1800/480 | 300 μ | 4250A | | | | |

189

Date Thu/Fri 1976 Dec 27/28 Observers KK/Pclv

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|----------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----------------|
| ce0039 | Hartmann test - IN | | | | | | | ThA | 30 ^s |
| 40 | " - OUT | | | | | | | | 30 ^s |
| ce0041 | Hartmann - IN | | | | | | | " | " |
| 42 | - OUT | | | | | | | " | " |
| ce01938 | Comparison | | | | | | | ThA | 20 ^s |
| ce01939 | HD 34029 | 05 09.3 | +45 54 | 18:48 | 19:04 | | | | |
| ce01940 | Comp | | | | | | | ThA | 20 ^s |
| ce01941 | 4 flats | | | | | | | Tung | 40 ^c |
| ce01945 | bias 4x | | | | | | | | |
| ce01946 | bias 4x | | | | | | | | |
| ce01947 | Dark 15 min | | | | | | | | |
| ce01948 | bias 4x | | | | | | | | |
| ce01949 | Dark 15 min | | | | | | | | |
| | backed up to Plesens | | | | | | | | |

Spectr. Temp. ...

Focus . See below

Spectr. Temp. ...

Exp. Mtr. Seeing

8290 2.5

pg #1
A1

Thurs - Fri

Date ... Jan. 3/4 ... (1991). Observers F.S. | Tn.

Emulsion Batches:

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.....

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|--|---------------------------------------|---------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|--------|
| 1950 | Bias (4) | | | 17:30:00 | | | | | |
| 1951 | Th-AR | | | 17:41:32 | | | | Th-AR | 20s |
| 1952 | HD 27516 ^{53 Per} | 04 14 19 | 46 16 30 | 17:41:20 | 18 41 1* | 3 04 E | | | |
| 1953 | Th-AR [SAO 93228 + Vestg] | | | 19 12 * | 19 51 | 00 32 E | | Th-AR | 20s |
| Image Acquisition view taped with Shen's Beta Video Recorder, occultation predicted for 1991 | | | | | | | | | |
| 1954 | Th-AR | | | 20 08 30 | | | | Th-AR | 20s |
| 1955 | HD 27396 ^{53 Per} | 04 14 19 | +46 16 30 | 20 10 15 | 20 59 46 | 00 44 E | | | |
| 1954 | Th-AR | | | 20 01 30 | | | | Th-AR | 20 sec |
| 1957 | Th-AR | | | 21:29:06 | | | | " | 20 sec |
| 1958 | HD 22928 ^{5 Per} | 03 35 48 | +47 28 | 21 30 30 | 21 35 46 | 00 39 W | | | |
| 19 | Th-AR | | | | | | | Th-AR | 20 sec |
| | Th-AR | | | | | | | | |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

567

For Rehid
Camera Glass

ST: Very T

501

300

193 pg 42

Thurs - Fri

Date JAN. 3/4. 1971..... Observers F.S. - T.?

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison | |
|---------------|-------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|-------------|-------|
| | | | | | | | | Type/Filter | Exp. |
| 1961 | ^{53 Per} HD 27396 | 04 14 19 | +46 16 30 | 21 49 37 | 22:30:39 | 0 46 W | | | |
| 1962 | Th-AR | | | 22:31:37 | | | | Th AR | 20sec |
| 1963 | HD 27396 | 04 14 19 | +46 16 30 | 22:32:14 | 23:13:01 | 1 28 W | | | |
| 1964 | Th-AR | | | 23:13:44 | | | | Th AR | 20sec |
| 1965 | HD 27396 | 04 14 19 | +46 16 30 | 23 14 | 00 06 30 | 2 21 W | | | |
| 1966 | Th AR | | | 00:07:30 | 00 | | | Th AR | 20sec |
| 1967 | HD 27396 | 04 14 19 | +46 16 30 | 00:10:09 | 00 31 40 | 2 46 W | | | |
| 1968 | Th AR | | | | | | | Th AR | 20s |
| 1969 | Th AR | | | 00 41 34 | | | | n | 20s |
| 1970 | ^{5 Per} HD 22928 | 03 35 48 | +47 28 | 00 41 34 | 01:28:14 | 4 31 W | | | |
| 1971 | Th AR | | | 01 29 30 | | | | Th AR | 20s |
| 1972 | BIAS x4 | | | 01 35 00 | | | | | |
| 1973- 1983 | 10 Flat @ 60s | MA=0 | Dec = +47° | slit | height = 600 μ. | | | TUNG | 60s |
| 1984 | Th-AR | | | 02:26:20 | | | | | 20s |
| 1985 | HD 27396 | 04 14 19 | +46 16 30 | 02 28 06 | 02 57 19 | 05 12 W | | | |
| 1986 | Th-AR | | | 02 58 30 | | | | Th-AR | 20s |

Spectr. Temp. ..

Focus.....

Spectr. Temp. ..

Exp. Mtr. Seeing

1400 OK

500 OK

2000 OK

5:3

2743

354

Spectr. Temp. Dome Temp./Hum. -8.8°C 69% Transparency Conditions ... Clear again PH

Focus page #2

Spectr. Temp. Dome Temp./Hum. -8.7°C 66%

Echelle slit

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit width | Emulsion | P.H. Height | Program | Remarks | Quality |
|-----------|--------|-----------|---------------------------|-------------|--------------|-------------|----------|--------------|---------|---------------------------|-----------------|
| 1400 | OK | ✓ 4.85 | B4 IV B6 IV | CCD Echelle | 18.59 | 60μ 1277 | 4471A | 450μ 1220 | | X gratng. 4555 | MAX ADX 1200 |
| 1500 | OK | ✓ 4.85 | B4 IV B6 IV | | | | | | | | MAX 1360 |
| 2000 | OK | ✓ 4.85 | B4 IV B6 IV | | | | | | | | |
| 503 | | ✓ 4.85 | B4 IV B6 IV | | | | | | | CCD T = -103°C | |
| 2743 | | ✓ 3.00 | B5 III | | | | | | | Too Cloudy | |
| | | | | | | | | | | Top up @ 01 32 T = -103°C | |
| | | | | | | | | 600μ 1805 | | | |
| | | | | | | | | 450μ 1220 | | | |
| 294 | | ✓ 4.85 | B4 IV B6 IV | | | | | | | cloud at end | |

AS pg #3

Emulsion Batches:

Date 1991 JAN 3/4..... Observers ..Eds...Tn.....

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Spectr. Temp.

Focus.....

Spectr. Temp.

| 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. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 1987 | Th Ar | | | | | | | Th Ar | 205 |
| 1988 | HD62509 | 07 39.2 | +28 16 | 03 02 58 | 03 10 43 | 2 02W | | | |
| 1989 | Th Ar | | | 03:11:21 | | | | Th-Ar | 205 |
| 1990 | BIAS (x4) | | | 03:18:55 | | | | | |
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Exp. Mir. Seeing

2600 peak

197

Fri - Sat pg#1

Date JAN. 4/5, /91..... Observers Fels./T.N.....

Emulsion Batches:

| 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. |
|-----------|------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|------------------|---------------------------|------|
| 1991-2000 | 10x flat @ 60s | | | 16 55 30 | | 0 ^h | +45 ^o | Tung | 60s |
| 2001 | BIAS (4x) | | | 17 20 58 | | | | Th Ar | 20s |
| 2002 | Th-AR | | | | | | | | |
| 2003 | HD 27396 | 04 14 19 | +46 16 30 | 17 35 50 | 18 05 50 | 3 37 E | | | |
| 2004 | Th AR | | | 18 06 40 | | | | Th Ar | 20s |
| 2005 | HD 27396 | 04 14 19 | +46 16 30 | 18 08 00 | 18 33 00 | 3 09 E | | | |
| 2006 | Th AR | | | | | | | Th Ar | 20s |
| 2007 | HD 22928 Th AR | | | | | | | Th Ar | 20s |
| 2008 | HD 22928 | 03 35 48 | +47 28 | 18 38 05 | 18 42 13 | 2 31 E | | | |
| 2009 | Th Ar Comp | | | | | | | Th Ar | 20s |
| 2010 | Th AR | | | | | | | Th Ar | 20s |
| 2011 | HD 27396 | 04 14 19 | +46 16 30 | 18 47 22 | 19:11:33 | 2 31 E | | | |
| 2012 | Th AR | | | | | | | Th Ar | 20s |
| 2013 | HD 27396 | 04 14 19 | +46 16 30 | 19 13 14 | 19:37:25 | 2 05 E | | | |
| 2014 | Th-AR | | | 19:38:30 | | | | Th Ar | 20 |
| 2015 | Th-AR | | | 19:41:28 | | | | | |

Spectr. Temp.
 Focus.....
 Spectr. Temp.
 Exp. Mtr. Seeing

380 OK

380

25

200

200

199

Fri-Sat Pg#2

Date JAN. 4/5. / 9.1..... Observers F.C.S./T.C.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 2016 | HD 22928 | 03 35 48 | +47 28 | 19 42 55 | 19:48:06 | 01 26 E | | | |
| 2017 | Th-Ar | | | 19:48:52 | | | | Th-Ar | 20s |
| 2018 | Th-Ar | | | 19:51:17 | | | | Th-Ar | 20s |
| 2019 | HD 27396 | 04 14 19 | +46 16 | 19:53:07 | 20:20:28 | 01 22 E | | | |
| 2020 | Th-Ar | | | 20:21:36 | | | | Th-Ar | 20s |
| 2021 | HD 27396 | 04 14 19 | +46 16 | 20:22:48 | 20:57:57 | 00 45 E | | | |
| 2022 | Th-Ar | | | 20:58:55 | | | | Th-Ar | 20s |
| 2023 | Th-Ar | | | 21:01:44 | | | | Th-Ar | 20s |
| 2024 | HD 22928 | 03 35 48 | +47 28 | 21:04:08 | 21:10:36 | 00 04 E | | | |
| 2025 | Th-Ar | | | 21:11:22 | | | | Th-Ar | 20s |
| 2026 | Th-Ar | | | 21:13:35 | | | | Th-Ar | 20s |
| 2027 | HD 27396 | 04 14 19 | +46 16 | 21:15:55 | 21 56 10 | 00 13 W | | | |
| 2028 | Th-Ar Comp | | | | | | | Th-Ar | 20s |
| 2029 | HD 27396 | 04 14 19 | +46 16 | 21 57 41 | 22 37 41 | 00 55 W | | | |
| 2030 | Th-Ar | | | | | | | Th-Ar | 20s |
| 2031 | Th-A Comp | | | | | | | Th-Ar | 20s |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

3000

3000

3000

3000

3000

201 P₃ 43

Date .19.9.1. JAN. 4/5... Observers . F.d.S. - T.H.

Emulsion Batches:

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Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

| 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. |
|--------------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce. 02032 | HD 22928 | 03 35 48 | +47 28 00 | 22 42 08 | 22 50 15 | 1 27 W | | | |
| 2033 | | | | | | | | Th Ar | 20s |
| 2034 | | | | | | | | Th Ar | 20s |
| 2035 | HD 27396 | 04 14 19 | +46 16 30 | 23 53 50 | 23 28 14 | 1 46 W | | | |
| 2036 | | | | | | | | Th Ar | 20s |
| 2037 | HD 27396 | 04 14 19 | +46 16 30 | 23 29 50 | 00 04 24 | 2 23 W | | | |
| 2038 | Th Ar | | | | | | | Th Ar | 20s |
| 2039 | Th Ar | | | | | | | Th Ar | 20s |
| 2040 | HD 22928 | 03 35 48 | +47 28 00 | 00 08 50 | 00 18 16 | 03 15 W | | | |
| 2041 | Th - Ar | | | | | | | Th Ar | 20s |
| 2042 | Th - Ar | | | | | | | Th Ar | 20s |
| 2043 | HD 27396 | 04 14 19 | +46 16 30 | 00 21 25 | 01 01 25 | 3 20 W | | | |
| 2044 | Th - Ar | | | | | | | Th Ar | 20s |
| 2045 | HD 27396 | 04 14 19 | +46 16 30 | 01 03 00 | 01 33 00 | 3 52 W | | | |
| 2046 | Th - Ar | | | | | | | Th - Ar | 20s |

Exp. Mtr. Seeing

1000000

3000

1900

286

Spectr. Temp. Dome Temp./Hum. -7.8°C 66%

Transparency Conditions *v. sl. hazy*

Focus *p4 #3*

202

Spectr. Temp. Dome Temp./Hum.

| Exp. Mir. | Seeing | Mag. | Sp. | Inst. | Grating/ Tilt | Slit | Emulsion | P.H. Height | Program | Remarks | Quality |
|-----------|------------|------|--------|----------------|------------------|----------|--------------------|----------------|---------|-------------------------------------|--------------|
| | | 3.00 | B5 III | CCD Echelle | 18.75 | 70 μ | 448/A ^D | 4.50 μ | | x grating = 0.4555 | |
| | | 4.85 | B4 IV | | | | | | | | |
| | 21000 cuts | | | | | | | | | | |
| | 3000 | 4.85 | B4 IV | | | | | | | | |
| | | 3.00 | B5 III | | | | | | | | |
| | 2900 | 4.85 | B5 III | | | | | | | | PIAX 3600 |
| | 1286 | 4.85 | B5 III | | | | | | | CCD T = -102.8 Thin cloud coming | |

20³ pg 24

Emulsion Batches:

Date 1991 JAN 4/5..... Observers ... Fds - Tm.....

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|---------------|------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 2047 | Comp Th-Ar | | | | | | | | 20 |
| 2048 | HD 22928 | 03 3548 | +47 2800 | 01 3633 | 02 16 33 | 5 14 W | | | |
| 2049 | Th - Ar | | | | | | | | 20 |
| 2050 | Th Ar | | | | | | | | 20 |
| 2051 | HD 62509 | 07 392 | +28 16 | 02 21 39 | 02 29 55 | 01 25 W | | | |
| 2052 | Th Ar | | | | | | | | 205 |
| 2053- 2062 | Flats x10 | | | 02 41 57 | | | | 0 0 +45° | |
| | | | Slit Height = 600μ | | | | | | |
| 2063 | BIAS (4) | | | | | | | | |
| 64 | BIAS (4) | JAN 5/6 | | 21 30 | | | | | |
| 65 | DARK 15m | | | | | | | | |
| 66 | DARK 15m | | | | | | | | |
| 67 | DARK 15m | | | | | | | | |
| 68 | DARK 40m | | | | | | | | |
| 69 | BIAS (4) | | | | | | | | |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

2367

3000

Spectr. Temp.

Dome Temp./Hum. $-7.9^{\circ}C$ 67%

Transparency Conditions ... Cloudy ... 12 ... 204

Focus

PS # 4

Spectr. Temp.

Dome Temp./Hum.

parison
Exp.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|--------|----------------|--------------|----------|--------------------|-----------|---------|---------|---------|
| | | | | CCD Echelle | 18.75 | 70 μ | 4481A ^o | 450 μ | | | |
| 2369 | | ✓ 3.00 | B5(II) | | | | | | | cloudy | |
| 3000 | | B 2.14 | KOIIIb | | | | | | std vel | | |
| | | | | | | | | 600 μ | | | |

205
Pg #1 mon-Tues

Date 1991 JAN 7/8 Observers Fds-Tn

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|------------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| ce02070.75 | BIAS | | | 16 2010 | | | | | |
| 2070-80 | Flats x10 | @60s | | | | | | Tung | 60sec |
| ce02081 | Th-Ar | | | 17 26 53 | | | | Th-Ar | 20s |
| 2082 | HD 27396 | 04 14 19 | +46 16 30 | 17 32 25 | 18 32 27 | 2 58 E | | | |
| 2083 | Th-Ar | | | | | | | Th-Ar | 20s |
| 2084 | Th-Ar | | | | | | | " | 2s |
| 2085 | HD 22928 | 03 35 48 | +47 28 30 | 18 38 10 | 18 59 20 | 1 52 E | | | |
| 2086 | Th-Ar | | | | | | | Th-A | 20s |
| 2087 | Th-Ar | | | | | | | Th-A | 20s |
| 2088 | HD 27396 | 04 14 19 | +46 16 30 | 19 03 22 | 20 03 22 | 01 27 E | | | |
| 2089 | Th-Ar | | | | | | | Th-A | 20s |
| 2090 | HD 27396 | 04 14 19 | +46 16 30 | 20 06 16 | 21 06 16 | 00 24 E | | | |
| 91 | Th-Ar | | | 21:0713 | | | | Th-Ar | 20s |
| 92 | Th-Ar | | | 21:1142 | | | | Th-Ar | 20s |
| 93 | HD 22928 | 03 35 48 | +47 28 30 | 21 14 00 | 21 26 35 | 00 38 W | | | |
| 94 | Th-A | | | | | | | Th-Ar | 20s |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

1639 v poor

3000 poor

1307 poor

62

3000

Spectr. Temp. Dome Temp./Hum. -10°C 53% Transparency Conditions FIRE 206

Focus pg#1

Spectr. Temp. Dome Temp./Hum.

90 (gain 0, 0, 256, 1024, 4, 1) CCD FMT

| Exp. Mtr. | Seeing | Mag. | Sp. | Inst. | Grating/Tilt | Slit width | Emulsion | slit P.H. Height | Program | Remarks | Quality |
|-----------|--------|------|--------|----------------|--------------|----------------------------|----------|------------------|-------------|-----------------------------------|-----------|
| | | | | | | | | | | CCD Temp = -102°C | unl. file |
| 60sec | | | | CCD Echelle | 18.75 | 70 μ 274 | 4481A | 800 μ 185 | x grating = | 4555 | |
| 20s | | | | " | " | " | " | 600 μ 205 | | | |
| | 1639 | poor | 4.85 | B4 IV | | | | | | | 1423 |
| 3000 | poor | 3.00 | B5 III | | | | | | 5 Per | | 2712 |
| | 1307 | poor | 4.85 | B4 IV | | | | | 53 Per | | 1513 |
| | 1612 | | 4.85 | B4 IV | | | | | 53 Per | | 1603 |
| 3000 | | 3.00 | B5 III | | | | | | 5 Per | | 4163 |

207 p.m. 2 Mon - Tues

Date .1991 JAN 7/8..... Observers .Fds.-Tn.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CP 002095 | Th Ar | | | | | | | Th-Ar | 20s |
| 96 | HD 27396 | 04 14 19 | +46 16 30 | 21 32 29 | 22 32 30 | 01 03 W | | | |
| 97 | Th-Ar | | | | | | | Th-Ar | 20s |
| 98 | HD 27396 | 04 14 19 | +46 16 30 | 22 34 00 | 23 34 00 | 02 04 W | | | |
| 99 | Th-Ar | | | | | | | Th-Ar | 20s |
| 2100 | Th-Ar | | | | | | | Th-Ar | 20s |
| 2101 | HD 22928 | 03 35 48 | +47 28 30 | 23 47 55 | 23 57 24 | 03 07 W | | | |
| 102 | Th-Ar | | | | | | | | 20s |
| 103 | Th-Ar | | | | | | | | 20s |
| 104 | HD 27396 | 04 14 19 | +46 16 30 | 00 07 54 | 01 07 57 | 03 38 W | | | |
| 105 | Th-Ar | | | | | | | | 20s |
| 106 | HD 27396 | 04 14 19 | +46 16 30 | 01 10 27 | 02 03 00 | 04 33 W | | | |
| 107 | Th-Ar | | | | | | | | 20s |
| 108 | Th-Ar | | | | | | | | 20 |
| 109 | HD 22928 | 03 35 48 | +47 28 30 | 02 06 00 | 02 34 44 | 05 45 W | | | |
| 110 | Th-Ar | | | | | | | | 20 |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

2658 3.50

2880 OK

3000

2195

1773

1413

20^a pg #3

Date 1991 JAN 7/8... Observers Fds-Th.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|--------------|------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce 002111 | Th Ar | | | 02 39 | | | | ThA | 20s |
| '112 | HD 34029 | 05 09.3 | +45 54 | 02 40 39 | 03 01 04 | 4 37W | | | |
| 113 | Th Ar | | | | | | | ThA | 20s |
| 114-123 | Flats (10) | | | 03 09 | | 0 0 | 45° | TUNG | 50s |
| 124 | BIAS(4) | | | 03 38 | | | | | |
| 125 | n | | | 03 42 40 | | | | | |
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Spectr. Temp. ...
 Focus
 Spectr. Temp. ...
 Exp. Mtr. Seeing

7472

211 Pg 1 Sat-Sun

Date JAN. 21.13... 1991... Observers ... Fels./ Pcl.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|----------------------|
| ce02126 | BIAS (4) | | | 20:04 03 | | | | | |
| 2127 | BIAS (4) | | | 20:08 55 | | | | | |
| 2128 | Th-Ar | | | 20:21 58 | | | | Th-Ar | 20s |
| 2129 | HD 22928 | 03 35 48 | +47 28 | 20 25 50 | 20 39 14 | | | | 3000 3000 |
| 2130 | Th-Ar | | | 20 40 00 | | | | | |
| 2131 | Th-Ar | | | 20 42 27 | | | | | |
| 2132 | HD 27396 | 04 14 19 | +46 16 30 | 20 45 10 | 21 45 0 | 00 35 W | | | 2558 2558 |
| 2133 | Th-Ar | | | 21 46 00 | | | | Th-Ar | 20s |
| 2134 | HD 27396 | | | 21 46 45 | 22 46 45 | 01 36 W | | | 2365 |
| 2135 | Th-Ar | | | 22 47 25 | | | | | 20s |
| 2136 | Th-Ar | | | 22 49 40 | | | | | 20s |
| 2137 | HD 22928 | 03 35 48 | +47 28 | 22 52 34 | 23 12 18 | | | | 500 |
| 2138 | Th-Ar | | | 23 13 00 | | | | | 20s |
| 2139 | Th-Ar | | | 23 14 35 | | | | | 20s |
| 2140 | HD 27396 | 04 14 19 | +46 16 30 | 23 15 53 | 00 15 53 | 03 06 W | | | |

Spectr. Temp.

Focus.....

Spectr. Temp.

Exp. Mtr. Seeing

122V

3000

2558

2365

500

3

Spectr. Temp. Dome Temp./Hum. ... 8.2 / 70% Transparency Conditions ... clear 212 ..

Focus

Spectr. Temp. Dome Temp./Hum. ... 10.8 / 73.1%

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-------------------------|--------|------------|-------|----------------|--------------|------|----------|------------------|---------|------------------------|---------|
| | Poor | | | CCD echelle | 18.75 | 70μ | 4481A | 600μ 50thrgwt | | | |
| 3000 3000 | | V= 3.00 | BSIII | | | | | | 8 Per | Tel focus 2236 T=-9.08 | |
| 2558 2558 | | V= 4.85 | B4IV | | | | | | | | |
| 2369 | | | | | | | | | | | |
| 4500 | | V= 3.00 | B5III | | | | | | 8 Per | | |

213 Pg 2 Sat-Sun

Date Jan. 12/13... 1991 Observers Fds / Pdr

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|---------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 202141 | Th-Ar | | | 00:16:30 | | | | | 20s |
| 2142 | HD27396 | 04 14 19 | +46 16 30 | 00:17:10 | 01:17:10 | | | | |
| 2143 | Th-Ar | | | 01:17:52 | | | | | 20s |
| 2144 | Th-Ar | | | 01:20:46 | | | | | 20s |
| 2145 | HD22928 | 03 35 48 | +47 28 | 01:22:13 | 01:36:35 | 05 05 W | | | |
| 2146 | Th-Ar | | | 01 37 12 | | | | | 20s |
| 2147 | Th-Ar | | | 01 38 44 | | | | | 20s |
| 2148 | HD27369 | 04 14 19 | +46 16 30 | 01 40 14 | 02 40 14 | 05 31 W | | | |
| 2149 | Th-Ar | | | | | | | | 20s |
| 2150 | Th-Ar | | | | | | | | 20s |
| 2151 | HD34029 | 05 09.3 | +45 54 | 02 44 25 | 02 48 46 | 04 44 W | | | |
| 2152 | Th-Ar | | | 02 49 26 | | | | | 20s |
| 2153 | Th-Ar | | | 02 52 01 | | | | | 20s |
| 2154 | HD62509 | 07 39 14 | +28 16 | 02 53 06 | 02 59 07 | | | | |
| 2155 | Th-Ar | | | 03 00 23 | | | | | 20s |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

360

955

60

60

60

2

215 Pg 3 Sat-Sun

Date Jan. 12/13/91 Observers ... Fds./Pdr.....

Emulsion Batches:

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.....

Spectr. Temp. ...

Focus.....

Spectr. Temp.

| 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. |
|-------------------|---------------------|--------------------|----------------------|-------------------------|-----------------------|-------------------|-----------------|---------------------------|------|
| | HD 84441 | 9 45 22 | +23 48 49 | | | | | | |
| CE02156 | Bias (4) | | | 03:10:00 | | | | | |
| CE02157- 02166 | 10x Flats | | ~ | 03 20 | | 00h | +45° | | 35s |
| 167 | BIAS(4) | | | 03 43 05 | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | JAN 18/19/92 | PCS | Cloudy | Night | | | | | |
| FIT00777mki | Flat | | | 20 47 | 23 47 | 0 0 | TUNG DIFF IN | AP 1/4 NP 2.0 | 3hrs |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Exp. Mtr. Seeing

F B

30 / 600

Spectr. Temp. Dome Temp./Hum. $11.2 / 73.9\%$ Transparency Conditions 216

Focus

Spectr. Temp. Dome Temp./Hum.

slit

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/ Tilt | Slit | Emulsion | P.H. height | Program | Remarks | Quality |
|-----------|--------|-------------------------|-------------------|-----------------|------------------|----------|----------|-------------------|---------|---|---------|
| | | $v=$ 2.98 | 6111ab | | | | | | | Slit! Flare!! | |
| | | | | | 18.75 | 70 μ | 4481A | 850 μ .185 | | | 14000 |
| A B | | | | Red Coll PCS | 1800/62.7 | BS | 6540A* | | | * Actual central λ indicated as 6580 \AA in header. | |
| 3bis | 30 | 1600 | | | | | | B | | | |

217

SAT/SUN

Date 1991 JAN. 19/20 Observers T.J. / M.K. ~~Stacy~~...

Emulsion Batches:

f18 stop. & Diffuser in for all sources

| 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. |
|-----------------|-----------------------------------|--------------------------------|--------------------------------|-------------------------|-----------------------|-----------------------|----------------------|---------------------------|----------|
| FIT00778 | MKI Flat | | | 17 3520 | 18 18 | | DIFF IN Ap=1/4 | TUNG ND200 | |
| 779 | Comp | | | | | | DIFF IN No Filter | FeAr clear | 200s |
| 780 | HD 23735 ? VATT Tag | 03 42.3 03 44.43 | +16 39 +16 57.06 | 18 28 | 18 58 08 | From Circle 01 12E | * Doc Drum +17 01 | | |
| 781 | Comp | | | | | | no filter | FeAr clear | 200s |
| TAG CFIT 782 | HD 23735 ? VATT Tag | 03 42.3 | +16 39 | 19 03 | 19 47 | 00 23E | +17 01 | | 2600s |
| 783 | Comp | | | | | | no filter | FeAr clear | 200s |
| TAG CFIT 784 | MWC 560 | 07 21.0 | -07 32 | 20 06 | 20 23 40 | 04 02E | -07 38 | | 1018s |
| 785 | Comp | | | | | | no filter | FeAr clear | 200s |
| TAG FIT 786 | MWC 560 | 07 21.0 | -07 32 | 20 52 | 21 07 30 | 03 17E | | | 2900s |
| 787 | Comp | | | | | | no filter | FeAr clear | 200s |
| 788 | Comp (Long) | NOTAG | | 21 22 | | 0 0 | " | " | 990 |
| FM000299.TJ | HD 40722 | 05 55 40 | +43 22 39 | 22 00 | | 00 22E | 4 frames | Int X4 | "Ninale" |
| 789 | HD 40722 | " | " | 22 04 | 22 17 | 00 07E | | | |
| 790 | Comp | | | | | | no filter | FeAr clear | 200s |
| 791 | FLAT | | | 22 36 40 | | 0 0 | ND200 | TUNG Ap=1/4 | |

Spectr. Temp. ...

Focus.....

Spectr. Temp.

Exp. Mtr. Seeing

31 1330

5 40

10 350 poor

5 40

10 100 500 poor

5 40

F 50 v poor

10-7 60 poor

10-7 60 poor

5 40

x31 5050 6

400 3"

5 35

1/1500

Spectr. Temp. Dome Temp./Hum. $+3^{\circ}\text{C}$ 76% H Transparency Conditions Part Cloudy..... 9.18..

Focus

Spectr. Temp. Dome Temp./Hum. $+3^{\circ}\text{C}$ 75%

Gusty SW wind

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|------------------------------------|--------|-----------|------|---|------------------------|------|------------------|------|-----------------|---|---------|
| 30 1350 | | | | Red Coll PC5 | Fiber Fed 1800/6207 | BS | 6540A | CHB | | 6540A actual central d | |
| 5 40 | | | | | " | | ** " | | | ** indicate as 6580 in Header | |
| 10 350 | poor | 8.4 | F2 | | " | | ** " | | prob wrong star | * Dec Drum Field Drum note - not using encoder | |
| 5 40 | | | | | " | | ** " | | | | |
| 10 /100 500 | poor | 8.4 | F2 | | " | | 6540A | | prob wrong star | 2.2 mag TAG Very gusty. Tel hard to guide | |
| 5 50 | poor | 10 | | | | | 6540A | | Mki pgn | note Dec Circle (Orum) read +16 33 for α Tau centered. posn logged too @ 19 30. V471 off take a few minutes (116K for TAG) clouding in | |
| 10 60 | poor | 10 | | | | | | | | All FITs backed up to FIT00779.mki best cnts 2100 \rightarrow 2107 LAST BIT of clear sky | |
| 5 40 | | | | | | | | | | | |
| 31 x 31 | 5050 | 6.42 | KO1U | DOME SW, West edge of obscured fiber head (view above hole) | | | | | | [V gusty SW] Thin Cloud | |
| 10 400 | 3" | " | " | | | BS | 6540A | | | Thought it was also a sd vel. It isn't. SIMILAR spectra to prob wrong star Taken at start of flight. | |
| 5 35 | | | | | | | | | | | |
| 30 /1500 | | | | | | | | | | | |
| Backed up to end on 3.5" floppy Tr | | | | | | | | | | | |

219

Sun / mon

Date 1991 JAN 20 / 21... Observers .. T.n

Emulsion Batches:

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.....
.....

Spectr. Temp. ...

Focus

Spectr. Temp. ...

| 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. | Exp. Mtr. A B | Seeing |
|----------------------|---------------------|----------------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|----------|------------------|--------|
| FIT00792 MKI | FLAT | | | 18 26 18 | | 0 0 | pl/4 foam | ND1.8 AP-1/4 | 3 hrs | 40 | 200 |
| 793 | DARK [no lights on] | | | 23 15 10 | 01 51 | | | | | 45 | 45 |
| JAN 21/22 Mon / Tues | | Pdr / T ₆ / MKI | | | | | | | | | |
| FIT00794 MKI | FLAT | | | 16 15 22 | 18 07 | | TUNG | ND1.8 AP-1/4 | 6700s | 35 | 1600 |
| FIT00795 MKI | Comp | | | | | | f18 stop | Fe A clear | 200s | 1 | 35 |
| FIT00796 | BM Cass | 00 48.6 | +63 33 | 18 17 | 19 00 | 1 51 W | | | | 5 | 100 |
| 797 | Comp | | | | | | f18 stop | Fe A clear | 200s | | |
| TAG EELT 798 | V471 Tau | 03 44 | +16 57 06 | 19 16 | 20 17 40 | 0 14 W | | | | 1 | 50 |
| 799 | Comp | | | | | | f18 stop | Fe A clear | 200s | | |
| FM000300 PDR | HD 29587 | 04 34.5 | +41 57 | 21 20 | | 00 33 W | 4x frames | Int x4 | 'N' mode | 150 | 100 |
| 800 | HD 29587 | " | " | 21 29 26 | 22 09 | 01 14 W | | | | 150 | 100 |
| 801 | Comp | | | | | | f18 stop | Fe A clear | 200s | | |
| TAG CAT 802 | HD 50138 | 06 46.7 | -06 51 | 22 16 | 22 27 | | | | | 200 | 100 |
| 803 | Comp | | | | | | f18 stop | Fe A clear | 200 | 200 | 100 |
| | | | | | | | f | | | 200 | 100 |

Spectr. Temp. Dome Temp./Hum. Transparency Conditions 220

Focus

Spectr. Temp. Dome Temp./Hum.

| Comparison Exp. | Exp. Mtr | Seeing | Ptg. Mag. | Sp. | Inst. <i>Rel Cell</i> | Grating/ Tilt | Slit | Emission λ | P.H. | Program | Remarks | Quality |
|--------------------|-------------|--------|--------------|-----|--------------------------|------------------|------|-----------------------|------|---------|--------------------------------|-------------|
| 3hr | 40 2000 | | | | PCS Fiber Fed | 1800/62.7 | BS | 6540Å | CHB | | | |
| | 25 25 | | | | " | " | " | " | " | | | |
| | | | | | | | | | | | Dome T -11°C H= 47% | part cloudy |
| 1700s | 35/1600 | | | | PCS Fiber Fed | 1800/62.7 | BS | 6540Å | CHB | | | |
| 200s | 4/35 | | | | | | | | | | Diffuser in for All sources | |
| | 5/100 | | 29 | M | | | | | | | | |
| 200s | 25/50 | poor | 9.5 | | | | | | | | Dome T -15°C, clouds coming in | |
| 200s | 39x39 | v | 7.29 | dG2 | Dome SW | | | | | | clouds Dome West | |
| | 5 150 | poor | 11 | " | | | | | | | clouds | |
| 200s | 500 -500 | poor | 6.7 | B | | | | | | | | |
| 0.5hr | 500 -500 | poor | 6.7 | B | | | | | | | part cloudy - v hazy | |

20 pg 82 Mon/Tues

Date 1991 JAN 21/22 Observers Pdr./Aa.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter Exp. |
|-----------------|-----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|--------------------------------|
| 804 | Comp | | | | | | f18 stop | FeA clear 200s |
| TAG CFIT 805 | HD 50138 | 06 46.7 | -06 51 | 22 39 | 23 00 | 00 05 E | | FeA clear 1/2 200s |
| 806 | Comp | | | | | | f18 stop | FeA A=1/2 200s |
| TAG CFIT 807 | MWC 560 | 07 21.0 | -07 32 | 23 06 | 20 30 40 | 00 52 W | | 501538 |
| TAG CFIT 808 | MWC 560 | " | " | 00 31 | 02 32 | 02 54 W | | |
| 809 | Comp | | | | | | f18 stop | FeA 1/2 200s |
| TAG CFIT 810 | MWC 560 | " | " | 02 38 | 02 56 | 03 16 W | | 4215 |
| 811 | Comp | | | | | | | FeA |
| 812 | SAD AD Leo? | 10 03 03 | +12 27 | [~] 03 16 | 04 23 | 82 03 W | | 4045S |
| 813 | Comp | | | | | | | FeA 200- |
| 814 | HD 87901 | 10 03 03 | +12 27 | 04 33 | 04 53 | 02 32 W | ND 2.0 | |
| 815 | Comp | | | | | | | FeA A=1/2 200 |
| TAG CFIT 816 | AD LEO | 10 14 28 | +20 21 | 05 27 | 07 01 | 04 30 W | | |
| 817 | Comp | | | | | | | FeA A=1/2 200s |
| 818 | Flat (on firmer) | | | not done | | | | |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

1/20

50/1000

5/40-110

50/100-200 S850

10/120

5/100

2000

130

140

Spectr. Temp. Dome Temp./Hum. -16°C : 56% Transparency Conditions ... Part cloud - Hazy ...

Focus pg. #2

Spectr. Temp. Dome Temp./Hum. -18°C : 60% 222

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. Coll | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------------|------------|------|---------------|--------------|------|----------|------|---------|---|---|
| 2005 | 10/140 | | | PCS Fiber Fed | 1800/50-8 | BS | 4820A | ChB | | | |
| | 50/1000 | V 6.7 | B8e | | | | | | | in and out of clouds | |
| 2005 | | V =10 | M | | | | | | | | |
| 5005 | 5/40-100 | | | | | | | | | ins out of cloud | |
| | 40/100-200 | SOSD | n | n | | | | | | Te1 Focus @ -1728 clearer -2809 | |
| 2005 | 10/120 | | | | | | | | | | |
| 2005 | 5/100 | V =10 | M | | | | | | | | |
| | | | | | | | | | | someone told me that Regulus was the brt star in polaris part | |
| 4005 | | | | | | | | | | Actually SHO 09 | Rel brt star to NW of Leo a 500x minikes |
| 2005 | | | | | | | | | | | |
| | 40/2000 poor | V =1.35 | BTVm | | | | | | | d Leo Teluric Std. | |
| 500 | | | | | | | | | | | |
| | 10 130 | | | | | | | | | yr Leo nearby | |
| 2005 | 10 140 | | | | | | | | | (backed up on 3.5" to 81x ^B Tn) | |

223

Date 1991 Jan 22/23 Observers

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|--------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|----------------------------------|
| FIT 818 | Flat | | | 18 15.5 | 21 15.5 | | | ND 2.0 A = 1/4 | 2 ^h 1 ^h |
| | | | | | | | | | |
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Spectr. Temp. ...
Focus
Spectr. Temp. ...

Exp. Mtr. Seeing
150 / 1800

22⁵ py#1

Thurs / Fri

Date 1991 JAN 24/25...

Observers T.n. / p.d.r. [K.K.] tests

service

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|--------------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|--------------------------------------|----------------|
| C00303 | fts Comp | | | | 18 33 | | | [f18 stop for comp] clear FeAr | 444s |
| 304 | Comp | | | | 18 45 | | | clear FeNe | 15s |
| 305 | 18 Tau | 03 39 12 | +24 32 | 18 50 15 | 19 04 22 | 00 43 E | | | |
| 306 | HD 23324 | " | " | 19 08 | 19 41 06 | 00 04 E | | clear | 15s |
| 307 | comp | | | | | | | clear | 15s |
| 308 | BIAS (4) | | | | | | | | |
| FM000301.pdr | HD 23324 | 03 39 12 | +24 32 | 20 00 | | 00 14 W +24 54 | | 'N' made 1/2 ING | 4 frames |
| 309 | FLAT | | | 20 12 | | 00 26 W | f18 | clear | 60sec |
| 310 | Comp | | | 20 26 | | | f18 | FeNe A-1/2 | 20s |
| 311 | HD 23324 | 03 39 12 | +24 32 | 20 30 30 | 20 57 20 | 1 10 W | | | |
| 312 | Comp | | | | | | f18 | FeNe A-1/2 | 20s |
| 313 | comp | | | | | | f18 | FeAr clear | 90s |
| 314 | Flat | | | | | | f18 | TUNG clear | 40s |
| 315 | Comp | | | | | | f15 | FeNe A-1/2 | 20s |
| 316 | HD 23324 | 03 39 12 | +24 32 | 21 23 | 21 45 | 1 58 W | | | |
| 317 | Comp | | | | | | f18 | FeNe A-1/2 | 20s |

Spectr. Temp. ...

Focus 5.5

Spectr. Temp. ...

Exp. Mtr. Seeing

2033

10,200 v pack

26 000 poor

4x integration

29x39ms poor

5050

26000 5050

20400 poor

227 py#2

Date .19.91.JAN.24.125. Observers .P.d.r./T.n.....

Emulsion Batches:

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Spectr. Temp.
 Focus.....
 Spectr. Temp. ...

| 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. |
|----------------|-----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|----------------|---------------------------|------|
| 318 | Comp | | | | | | f18 | FeAr Clear | 90s |
| 319 | FLAT | | | | | | f18 | TUNG Clear | 40s |
| 320 | Comp | | | | | | f18 | FeNe A=1/2 | 20s |
| 321 | HD23324 | 03 39 12 | +24 32 | 21 59 30 | 22 19 | 2 32 W | | | |
| 322 | Comp | | | | | | f18 | FeNe H=1/2 | 20s |
| 323 | Comp | | | | | | f18 | FeAr Clear | 60s |
| 324 | FLAT for 5170Å | | | | | | f18 | TUNG Clear | 20s |
| 325 | Comp | | | | | | f18 | FeAr Clear | 60s |
| 326 | Comp | | | | | | f18 | FeNe A=1/16 | 20s |
| 327 | HD23324 | 03 39 12 | +24 32 | 22 38 | 22 56 | 3 09 W | | | |
| 328 | Comp | | | | | | f18 | FeNe H=1/16 | 20s |
| 329 | FLAT for 5890Å | | | | | | f18 | TUNG H=1/16 | 20s |
| 330 | Comp for 6560Å | | | | | | f18 | FeNe A=1/16 | 10s |
| 331 | Comp for 6560Å | | | | | | f18 | FeAr Clear | 60s |
| 332 | HD23324 | 03 39 12 | +24 32 | 23 14 | 23 31 | 3 44 W | | | |
| 333 | Comp | | | | | | f18 | | |

Exp. Mtr. Seeing

20 200 500

40 200

17 500

25 200

Spectr. Temp. Dome Temp./Hum. -15°C 70% Transparency Conditions .. 51 Hazy 228

Focus

Spectr. Temp. Dome Temp./Hum. central

CCD Temp = -100°C

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion- λ | P.H. | Program | Remarks | Quality |
|-------------------|--------|-----------|-----|-------------|--------------|-----------|---------------------|------|---------|--|---------|
| 90s | | | | CCD CASS | 1800/45.0 | 250 μ | 4810A | | | | |
| 46s | | | | " | " | " | " | | | MAX HDU 14000 MID HDU 10000 | |
| 20s | | | | " | 1800/46.5 | " | 5170A | | | | |
| 20,200 | 50SD | 5.65 | B8V | | " | " | " | | UBV std | MAX ADU = 2250 MID λ ADU = 2200 | |
| 20,200 | | | | | | | | | | | |
| 6s | | | | | | | | | | | |
| 20s | | | | | | | | | | MAX ADU = 14000 MID λ ADU = 12000 | |
| 6s | | | | | 1800/51.5 | | 5890A | | | | |
| 20s | | | | | | | | | | 7500 HDU MAX | |
| 19,500 | | | | | | | | | | MAX ADU = 2550 MID λ ADU = 2550 | |
| 20s | | | | | 1800/51.5 | | 5890A | | | MAX ADU = 5000 MID λ 5000 ADU | |
| 6s | | | | | 1800/56.0 | | 6560A | | | 4470 HDU MAX | |
| 6s | | | | | " | | 6560A | | | | |
| 20,000 | | | | | " | | " | | | MAX ADU = 2000 MID λ ADU = 1800 | |

229 #3

Date 1991 JAN 24/25 Observers P.d.r. / J.n.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|--------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 333 | FTS Comp | | | | | | f18 | FeAr clear | 60s |
| 334 | Flat for | 6560A | | | | | f18 | TUNG A-1/4 | |
| 335 | FLAT for | 3980A | | | | 0200E | +2837 | TUNG clear | 90s |
| 336 | Comp for | 3980A | | | | | f18 | FeAr clear | 200s |
| 337 | Comp | | | | | | f18 stop | FeNo clear | 15s |
| 338 | HD 90861 | 10 24 18 | 29 05 | 00 37 | 01 17 15 | 01 13 E | | | |
| 339 | Comp | | | | | | f18 stop | FeNo clear | 15s |
| 340 | BIAS(4) | | | 01 31 | | | | | |
| 341 | DARK 15m | | | | | | | | |
| 342 | BIAS(4) | | | | | | | | |
| 343 | DARK 15m | | | | | | | | |
| CCF00052 | Hartmann - comp | | | | | | f/18 | FeNo clear | 20 |
| 53 | Hartmann - stellar | | | | | | " | " | " |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

500 OK

Spectr. Temp. Dome Temp./Hum. -16°C ... 72% Transparency Conditions ... FINE ... cloudy 230

Focus

Spectr. Temp. Dome Temp./Hum. -17°C ... 74%
mid

Top up @ 0015 EST

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|---------------------|--------|-------------|--------------|-----------|-------------------|------|--|---|---------|
| | | | | CCD CASS | 1800/56.0 | 200 μ | 6560 \AA | | | | |
| | | | | | | | " | | | 6000 MAX MID 5800 | |
| | | | | CCD CASS | 1800/39.9 | | 3980 \AA | | MAX ADU = 4000 MID λ = 3000 | T = -102°C after top up | |
| | | | | " | 1800/39.9 | | 3980 \AA | | | prob closer to 3960 \AA center | |
| | | | | " | " | | " | | | . | |
| 10500 | OK | \checkmark 7.2 | K2 III | " | " | | " | | std vel | MAX ADU = 290 MID λ = 240 | |
| | | | | " | " | | " | | std vel | Cloud by 01 EST | |
| | | | | BC | 1800/4501 | | | CCD | | T = -9.3 F = 7.10 | |
| | | | | " | " | | | " | | bias sub mical | |

pg#1 Fri - Sat

Date 1991 JAN 25/26... Observers Pdr.../Tn.....

Emulsion Batches:

.....

| 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. |
|-----------|----------|--|---------------------|----------------------------------|-----------------------|-------------------|-------------------------|---------------------------|------|
| CC00344 | HS Comp | | | | | | DIFF OUT f18 stop | FeNe CLEAR | 15s |
| 345 | Comp | | | | | | DIFFUSER IN NOW | FeAr CLEAR | 200s |
| 346 | HD 26162 | 04 03.3 | +19 21 | 18 3530 | 18 55 | 01 12 E | | | |
| 347 | Comp | | | | | | DIFF IN f18 | FeAr CLEAR | 200s |
| 348 | Comp | | | | | | " | FeNe CLEAR | 15s |
| 349 | FLAT | | | | | | " | TUNG CLEAR | 90s |
| 350 | BIAS (4) | | | 1930 | | | | | |
| 351 | Comp | | | | | | DIFFUSER IN f18 stop | FeAr CLEAR | 90s |
| 352 | HD Comp | | | | | | " | FeNe CLEAR | 15s |
| 353 | HD T3665 | 0834 21 | +20 22 | 22 37 40 | 23 25 00 | 1 12 E | | | |
| 354 | Comp | | | | | | f18 stop | FeNe CLEAR | 15s |
| 355 | FLAT | [Diffuser out gives even illumination] | | [Diffuser Taken out now] | | 1 05 E | f18 stop | TUNG CLEAR | 50s |
| 356 | Comp for | 4800 Å | | Diffuser out for All sources now | | | | | 15s |
| 357 | HD 73665 | 08 34 21 | +20 22 | 23 43 30 | 00 15 30 | 00 23 E | | | |
| Fm.00 302 | Tn | " | " | 00 18 | | 00 18 E | " 11" mode | [4x Int] | |

Spectr. Temp. ...

Focus.....7.10

Spectr. Temp. ...

Exp. Mtr. Seeing

28.800 OK

2000 32"

21000 OK

3x3, 11

Spectr. Temp.

Dome Temp./Hum. ... -10°C ... 62%Transparency Conditions . Clear \rightarrow rapidly cloudy ...

Focus 7.10

Spectr. Temp.

Dome Temp./Hum.

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

232

parison
Exp.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/ Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|--------|--|------------------|-----------|----------|------|---------------|---------------|--|
| 15s | | | | CASS CCD Blue foil 1800 | 1800/39.4 | 250 μ | 3920A | | *G4190 | | |
| 20s | OK | 5.50 | K11II | | | | | | | MAX ADU = 800 | |
| 28,800 | OK | 5.50 | K11II | | | | | | st/vel | cloud attend | MAX ADU = 520 MID λ ADU = 420 |
| 20s | | | | | | | | | | | |
| 15s | | | | | | | | | | | |
| 90s | | | | | | | | | | | MAX ADU = 4400 MID λ ADU = 3000 |
| 90s | | | | | 1800/42.0 | 250 μ | 4350A | | G4468 | | |
| 15s | OK | 6.29 | K0 | | | | | | | | |
| 30000 | OK | 6.29 | K0 III | | | | | | UBVRI std | B-V +0.98 | MAX ADU = 1450 MID λ = 1300 |
| 15s | | | | | | | | | | | |
| 50s | | | | | | | | | | | MAX ADU = 5500 MID λ = 4000 |
| 15s | | | | | 1800/45.0 | | 4810A | | G4776 | | |
| 21000 | OK | 6.29 | K0 III | | | | | | UBVRI std. | | MAX ADU = 2200 MID λ = 1900 |
| 31x31 | " | " | " | 4 Frames - Dome SSW | | | | | Light SW wind | | |

CENTRAL

23³ #2 Fri Sat

Date 1991 JAN 25/26... Observers P.d.r./T.m.....

Emulsion Batches:

.....

| 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. |
|-------------|----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|----------------|
| CC00 358 | fts Comp | | | | | | F18 stop | FeNe CLEAR | 15s |
| 359 | Comp | | | | | | | FeAr CLEAR | 90s |
| 360 | FLAT | | | | | | Ap=1/4 | TUNG CLEAR | 40s |
| 361 | Comp for 5170A | | | | | | F18 stop | FeAr CLEAR | 90s |
| 362 | HD 73665 | 08 34 21 | +20 22 | 00 36 | 00 58 | 00 21 W | | | |
| 363 | Comp | | | | | | | FeAr CLEAR | 90s |
| 364 | Comp | | | | | | | FeNe CLEAR | 15 |
| 365 | FLAT | | | | | | Ap 1/2 | TUNG Ap 1/4 | 30s |
| 366 | Comp for 5890A | | | | | | | FeAr CLEAR | 60s |
| 367 | HD 73665 | 08 34 21 | +20 22 | 01 14 | 01 38 30 | 01 01 W | | | |
| 368 | Comp | | | | | | | FeAr CLEAR | 60s |
| 369 | Comp | | | | | | | FeNe A=1/16 | 20 |
| 370 | FLAT | | | | | | | TUNG A=1/4 | 30s |
| 371 | Comp for 6560A | | | | | | | FeNe A 1/16 | 10sec |
| 372 | HD 73665 | 08 34 21 | +20 22 | 01 50 30 | 02 16 30 | 01 39 W | | | |

Spectr. Temp. ...
 Focus.....
 Spectr. Temp. ...

Exp. Mtr. Seeing

8000 OK

5sec

5000

8700 3"

Spectr. Temp. Dome Temp./Hum. -12°C 67% Transparency Conditions ... *sl. hazy* ... 234 ...

Focus

Spectr. Temp. Dome Temp./Hum.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. <i>Blue cell</i> | Grating/ Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|----------------------|--------|---------------------------|------------------|-----------|----------|------|------------|---|---------|
| 155 | | | | CASS CCD | 1800/450 | 250 μ | 4810A | | G=4776 | | |
| 90s | | | | | | | " | | | | |
| 40s | | | | | | | " | | | MAX ADU = 10000 MID λ ADU = 7500 | |
| 90s | | | | | 1800/465 | | 5170A | | G=5021 | MAX ADU 600 μ + 1/2 | |
| 18000 | OK | \checkmark 6:29 | KO III | | | | " | | UBUR1 STD. | MAX ADU = 3400 MID λ = 3200 | |
| 90s | | | | | | | " | | | | |
| 15 | | | | | | | " | | | | |
| 20sec | | | | | | | " | | | MAX ADU = 15000 9000 MID ADU = 12000 7500 | |
| 60s | | | | | 1800/51.5 | | 5890A | | G=5527 | | |
| 15000 | | \checkmark 6:29 | KO III | | | | " | | UBUR1 STD. | MAX ADU = 4200 MID λ = 4200 | |
| 60s | | | | | | | | | | | |
| 20 | | | | | | | | | | MAX ADU = 8000 MID λ = 8000 | |
| 30s | | | | | | | | | | | |
| 10sec | | | | | 1800/560 | | 6560A | | G=6027 | MAX ADU = 2150 MID ADU = 2100 image $\frac{2}{3}$ slit length | |
| 8700 | 3" | \checkmark 6:29 | KO III | | " | | " | | | Some Cloud | |

235 P9#3 Fri SAT

Date 1991 JAN 25/26... Observers J.S./Pdt.....

Emulsion Batches:

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.....

Spectr. Temp. ...

Focus ... 7.10

Spectr. Temp. ...

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|------------|-----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| cc 373.fts | Comp for 6560A [?] | | | | | | | FeNe A=11/16 | 10s |
| 374 | Comp for 6560A | | | | | | | FeAr CLEAR | 60s |
| 375 | FLAT | | | | | | | TUN6 A=1/4 | 20s |
| 376 | BIAS(4) | Bias.BAT | (Average of 4 bias) | | | | | | |
| | | | | | | | | | |
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Exp. Mtr. Seeing

Spectr. Temp. Dome Temp./Hum. ... -12.5°C 68% Transparency Conditions *cloudy* 236

Focus *F.10*

Spectr. Temp. Dome Temp./Hum.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|------------|--------|-----------|-----|---------------------|-----------------|----------------------------|--------------|------|---------|----------------------------|---------|
| <i>10s</i> | | | | <i>CASS CCD</i> | <i>1800/560</i> | <i>250μ</i> | <i>6560A</i> | | | | |
| <i>60s</i> | | | | | | | <i>"</i> | | | | |
| <i>20s</i> | | | | | | | <i>"</i> | | | <i>MAX 6200</i> | |
| | | | | | | | | | | <i>MID 6000</i> | |
| | | | | | | | | | | <i>MAX 6200</i> | |
| | | | | | | | | | | <i>MID 6000</i> | |

237

SAT SUN

Date 1991 JAN 26/27 Observers Pdr/Tn

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-------------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|---------------|
| CC00377-fts | Comp | | | | | | | DIFFIN FIBS/tp | FeNe Clear |
| 378 | HD 95735 | 10 57 54 | +36 38 | 01 23 | 02 05 | 00 51 E | | | |
| 379 | Comp | | | | | | | FeNe Clear | 20s |
| 380 | FLAT | | | | | 00 46 E | | A=1/2 | 20s |
| 381 | Comp | | | | | | | FeNe A=1/8 | 20s |
| 382 | HD 95735 | 10 57 54 | +36 38 | 02 17 15 | 02 47 | 00 01 E | | | |
| 383 | Comp | | | | | | | FeNe A=1/8 | 20s |
| 384 | FLAT | | | | | | | TUNG A=1/4 | 30s |
| 385 | BIAS(4) | | | | | | | | |
| 386 | Comp | | | | | | | FeAr Clear | 90s |
| 387 | HD 95735 | 10 57 54 | +36 38 | 03 24 | 03 35 | 00 39 W | | | |
| 388 | Comp | | | | | | | FeAr Clear | 90s |
| 389 | FLAT | | | | | | | TUNG A=1/4 | 20s |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

20sec

11500 3"

0900 3"

0080 23"

Spectr. Temp. Dome Temp./Hum. -8°C 71%Transparency Conditions ... PART Cloudy ... 239
Gusty SW

Focus

Spectr. Temp. Dome Temp./Hum. -9°C 74%30 CGAIN $T = -100^{\circ}\text{C}$

| Exposure | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|----------|-----------|-------------------|-----------|-----|---|--------------|-----------|-------------------|------|------------|--|---------|
| 20secs | | | | | | 1800/465 | 250 μ | 5170 \AA | | | G = 5021 | |
| 11500 | 3" | \checkmark 7.60 | mb | | CASS CCD Blue Coll | | | | | Asm Sp Kit | MAX ADU = 1400 MID λ = 1300 | |
| 20s | | | | | | | | | | | MAX ADU = 9000 MID λ = 7000 | |
| 20s | | | | | | | | | | | | |
| 9900 | 3" | \checkmark 7.60 | mb | | | 1800/51.5 | 250 μ | 5890 \AA | | Asm Sp Kit | MAX ADU = 2200 MID λ = 1900 | |
| 20s | | | | | | | | | | | MAX ADU = 8800 MID λ = 7000 | |
| 30s | | | | | | | | | | | Cloud | |
| | | | | | (CC FTS Backed up to here on Porcosas and WORM) | | | | | | | |
| 70s | | | | | | 1800/560 | 250 μ | 6560 \AA | | | | |
| 2080 | 2.3" | \checkmark 7.60 | mb | | | " | " | " | | Asm Sp Kit | MAX + MID λ = 1000 ADU Clouds | |
| 70s | | | | | | | | " | | | | |
| 20s | | | | | | | | " | | | MID λ = 6000 ADU | |
| | | | | | all backed to WORM - KK | | | | | | | |

139

Mon - Tues

Date 1991 JAN 28/29... Observers ..T.n. / (M.Ki. phone.in.).

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------------|--------------------------|--------------|---------------------|-------------------------|-------------------------|-------------------|--------------------------|---------------------------|------|
| CC00 390.545 | Comp | | | | | | Diffuser [F18stop] 1X | FeAr Clear | 90s |
| 391 | HD 14386 | 02 14.3 | -03 26 | 18 20 30 | 18 34 30 | 00 29 W | | | |
| 392 | Comp | | | | | | | FeAr Clear | 90s |
| 393 | Flat | | | | | | | TUNG A=1/2 | 40s |
| 394 | BIAS(4) | | | | | | | | |
| 395 | HD 14386 | 02 14.3 | -03 26 | 19 04 | 19 24 ² 30 | 01 19 W | | | |
| 396 | Comp | | | | | | | FeAr Clear | 90s |
| 397 | Comp | | | 19 38 | | | | FeAr Clear | 90s |
| 398 | HD 14386 | 02 14.3 | -03 26 | 19 42 | 19 52 | 01 47 W | | | |
| 399 | Comp | | | | | | | FeAr Clear | 90s |
| 400 | Flat (redone after DARK) | | | 20 56 | 20 03 redout | | | TUNG A=1/4 | 30s |
| 401 | DARK | | | 20 14 | 20 44 | | | | 1800 |
| 402 | DARK | | | 21 07 | | | | | 1800 |
| CCF00054 | Hartmann - comp | | | | | | | FeA clear | 30s |
| 55 | Hartmann - stellar | | | | | | | " | |

Spectr. Temp. ...

Focus.....

Spectr. Temp.

Exp. Mir. Seeing

14700 OK 2"

2000 OK 2"

760 2"

Spectr. Temp. Dome Temp./Hum. -1°C 55%

Transparency Conditions ... Clouding ... 17 240

Focus

CGAIN = 30 CCD Temp -102°C Spectr. Temp. Dome Temp./Hum. -2°C 70%

510 0 40 1024 2 1 CCD FMT

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|-------------|-----------|-----|-----------------------|--------------------|-----------|----------|------|--|--|---------|
| 90s | | | | CASS CCD Blue Cell | G=4776 1800/450 | 250 μ | 4810A | | | medium cloud | |
| 4900 | OK 2"-3" | | M | | | | | | Mira pgn | min 171 } H β emission MAX 229 } AREA | |
| 90s | | | | | | | | | | 1100 ADU for strongest line | |
| 40s | | | | | | | 4810A | | | MAX 11300 ADU MID 7500 ADU | |
| 2000 | OK 2" | | M | | | | 4810A | | Mira pgn | uniform cloud cloudy | |
| 90s | | | | | G=6027 1800/560 | 250 μ | G560A | | | CCD FMT changed to 505 0 40 1024 2 1 | |
| 760 | 2" | | M | | " | " | " | | 350 ADU continuum 701 ADU H α | for better centering still cloudy strongest str line 306 ADU 11500 MAX ADU 7000 MID ADU | |
| 1800 | | | | | | | | | | | |
| 1800 | | | | | | | | | | | |
| 30s | | | | | 1800/ 5050 | | 5170 | | | Backed up to here on Persous / CCD / Cass | |
| | | | | | " | | | | | T = -3.9 F = 7.10 | -1.00 |
| | | | | | | | | | | VOT = 4.2 | |

241

Date 1991 Jan 29 Tues Observers .KK.....

Emulsion Batches:
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Spectr. Temp. ...
Focus.....
Spectr. Temp.

| 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. |
| <u>CCFAO 56</u> | <u>Havtmann - comp</u> | | | | | | | <u>Fe A</u> | <u>30^s</u> |
| <u>57</u> | <u>" stellar</u> | | | | | | | <u>"</u> | <u>"</u> |
| <u>58</u> | <u>" comp</u> | | | | | | | <u>"</u> | <u>"</u> |
| <u>59</u> | <u>" stellar</u> | | | | | | | <u>"</u> | <u>"</u> |
| <u>60</u> | <u>" comp</u> | | | | | | | <u>"</u> | <u>"</u> |
| <u>61</u> | <u>" stellar</u> | | | | | | | <u>"</u> | <u>"</u> |
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Exp. Mtr. Seeing

243

Thurs - Fri

Date 1991 Jan 31 / Feb 1 Observers Jn. / P.d.r.

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|------------|-----------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|----------------|
| CC00403 | Flats | | | 16:40 | | | | Tungsten A 1/2 | 5 ^s |
| → 406 | | | | | | | | fish stop | " |
| CCF00062 | Comp Hartman test (Comp for MASK) | | | 489.4 | 518.4 | 01 50E | +42 12 | FeNo A-Clear | 30s |
| CCF00063 | Comp " 9 (Stellar for mask) | | | 488.8 | 517.6 | 01 42E | " | FeNo A-Clear | 30s |
| CC00407 | Comp for Obs | | | | | | | " | 30s |
| CC00408 | HD 29587 | 04 34.5 | +41 57 | 184010 | 1902 | 01 14E | | | |
| 409 | Comp for | | | | | | | FeNo A-Clear | 30s |
| Fm00303.Tn | HD 29587 88 | " | " | 1927 | | 0049E | +42 13 | " N [?] made | |
| 410 | Comp | | | | | | | FeNo Clear | 30s |
| 411 | MIRA HD 14386 | 07 14.3 | → 03 26 | 192245 | 1947 | 1 54W | | | |
| 412 | Comp | | | | | | | FeNo Clear | 30s |
| 413 | Comp | | | | | | | " | 30s |
| 414 | HD 23324 ^{18 Tau} | 03 39.12 | +24 32 | 2036 | 2048 | 1 29 W | | | |
| 415 | Comp | | | | | | | FeNo Clear | 30s |
| 416 | Comp for ORION nebula | | | | | | | " | 30s |

Spectr. Temp. ...
Focus ... 7.15.
Spectr. Temp.

Exp. Mtr. Seeing

7500 3"

3x30s OK

7200 OK

200 2-3" 5"

Spectr. Temp. Dome T = -65°C Dome Temp./Hum. -4.4 57.6% Transparency Conditions Clearing - clouds 117
 Focus 7.15 244
 Spectr. Temp. Dome Temp./Hum. 30 cgain 546 0 40 1024 2 1 CCD FMT

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------------------|-----------|-----|-------------------------|--------------|-------------------------------|------------|------|---|---|---------------------|
| | | | | BlueCall CASS CCD | 600/ 25.8 | 250μ | 4350Å | | | Flats done in calibrator | max 3000 |
| | | | | | " | " | " | | | because ↓ broke lamps so hot | |
| | | | | | " | " | G2675 4 | | Actual Grating Angle 25.5° Actual λ Center = 4300Å | CCD FMT 546 0 40 1024 2 1 | |
| | | | | | | | " | | | | |
| 7500 | 3" | 7.99 | dG2 | | | | " | | std vel | MIDADU 1260 ≈ 10000 e ⁻ MAX 1628 10000 e ⁻ | |
| | | | | | | | | | | | |
| | 31x31 pixels OK | 7.99 | dG2 | 4 frames | 250μ slit | HeadK (above slit, dacker in) | | | | Done South med NW wind | |
| 7200 | OK | 2.8 | M | | | | 4350Å | | MIRA pgn | cloud. | 1000 e ⁻ |
| | | | | | | | | | | CCD FMT change | |
| | | | | | | | | | URVRI std | 530 0 40 1024 2 1 CCD FMT | |
| 8,200 | 2-3" | 5.65 | B8V | | | | 4350Å | | URVRI std | cloud MIDADU 2200 MAX 404 2500 | |
| | | | | | | | 4350Å | | | CCD FMT changed back to 546 0 40 1024 2 1 | |

245 #2

Emulsion Batches:

Date 1991 JAN 31 / Feb 1 Observers Pdr. / J.N.

| 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. |
|-----------|--------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 417 | ORION nebula | 05 30.3 | -05 28 | 21 29 | 21 44 | 00 34 W | -5 17 | | |
| 418 | Comp | | | | | | | FelNe CLEAR | 30s |
| 419 | SKY | | | 21 50 | 22 20 | 01 08 W | -9 13 | | |
| 420 | Comp | | | | | | | FelNe CLEAR | 30s |
| 421 | Comp | | | | | | | " | " |
| 422 | HD 73665 | 08 34.3 | +20 22 | 22 34 45 | 23 02 30 | 01 11 E | | | |
| 423 | Comp | | | | | | | FelNe CLEAR | 30s |
| 424 | Comp | | | | | | | " | " |
| 425 | HD 65934 | 07 56 05 | +26 55 | 23 13 30 | 23 49 | 00 13 W | | | |
| 426 | Comp | | | | | | | FelNe CLEAR | 30s |
| 427 | Comp | | | | | | | FelNe CLEAR | 30s |
| 428 | HD 90861 | 10 24 18 | +29 05 | 23 57 30 | 00 32 50 | 01 31 E | | | |
| 429 | Comp | | | | | | | FelNe CLEAR | 30s |
| 430 | Comp | | | | | | | " | 30s |
| 2ci 431 | HD 95735 | 10 57 54 | +36 38 | 00 42 | 01 15 | 01 22 E | | | |

Spectr. Temp. ...

Focus ... 7.15...

Spectr. Temp. ...

Exp. Mtr. Seeing

10 30 6

3500 30 7

30 7

30 7

Spectr. Temp. -7.5°C Dome Temp./Hum. -7.5°C 62% Transparency Conditions *Part cloudy* 246

Focus 7.15

Spectr. Temp. Dome Temp./Hum. -7.6°C 65%

30 CGAIN

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|----------------------|-------|--------------------------|--------------------|----------|--------------------------------|------|------------|--|---------|
| | | | | Blue Cell CASS CCD | G 2625 600/25.5 | 25 μ | 4300A | | | thin hazy | |
| 139 | | | | | | | | | | clear to thick haze | |
| 7110 | 2-3" | \checkmark 6.29 | K0III | | | | | | URVAR1 std | NW star - slightly brighter Thin cloud MID = 900 ADU MAX = 1900 | |
| 3500 | 3" | \checkmark 7.94 | G8III | | | | MID ADU = 660 MAX ADU = 900 | | std vel | thick haze to cloud | |
| 9700 | | \checkmark 7.2 | K2III | | | | | | std vel | MID λ = 1200 ADU MAX = 1800 ADU | |
| 10000 | 2-3" | \checkmark 7.60 | M6 | | | | | | Asm Sp-KK | MID λ = 650 ADU MAX = 1300 ADU | |

247
pg #3

Date 1991 JAN 31 / Feb 1 Observers T.H. P.D.R.

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|----------------|-------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC00 432.95 | Comp for HD 95735 | | | | | | | Felc CLEAR | 30s |
| 433 | Comp | | | | | | | " | 30s |
| 434 | BIAS (4) Bias Bat | | | 01 29 | | | | | |
| 435 | DARK | | | 01 32 | | | | | 180s |
| CCF000 64 | Comp comp posn | | | | | | | | |
| CCF000 65 | Comp stellar posn | | | | | | | | |
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Spectr. Temp. ...
Focus
Spectr. Temp. ...
Exp. Mtr. Seeing

249

Fri/Sat

Date 1991 Feb 1/2 Observers Mki/Pdr

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-------------|----------------------|--------------|---------------------|-------------------------|-----------------------|---------------------|-------------|---------------------------|------------------|
| CC00 436 | Comp | | | | | | | | |
| 437 | Bias (4) | | | | | | | | |
| 438 | Comp | | | 22 48 | | 3 ^h 29 W | | Fe A clear | 100 ^s |
| 439 | V 471 Tan | 03 44.7 | +16 57 | 22 52 20 | 23 22 20 | 4 03 W | | | |
| 440 | Comp | | | | | | | " | 100 ^s |
| 441 | V 471 Tan | " " | " " | 23 27 55 | 23 57 55 | 4 37 W | | | |
| 442 | Comp | | | 00 01 30 | | | | Fe A clear | 100 ^s |
| 443 | Bias | | | | | | | | |
| 444 | Flat | | | | | 4 37 W | | Tung A=1/4 | 10 ^s |
| 445 | Flat | | | | | 4 37 W | | " " | " " |
| 446 | Flat Flat | | | | | 1 31 W | | Tung A=1/4 | 10 ^s |
| 447 | Comp | | | 00 27 | | 1 31 W | | clear Fe A A=1/4 | 100 ^s |
| 448 | MWC 560 | 07 21 | -07 32 | 00 32 10 | 01 02 10 | 2 07 W | | | |
| 449 | Comp | | | | | | | | |

Spectr. Temp. ...

Focus 7.15

Spectr. Temp. ...

Exp. Mtr. Seeing

799

950

700

251 #2

Date 1991 Feb 1/2 Observers MK1 / Pdr

Emulsion Batches:

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Spectr. Temp. ...

Focus ... 7.15 ...

Spectr. Temp. ...

| 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. |
|----------------|-------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 450 | Comp | | | | | | | F ₂ clear | 50s |
| 451 | MWC560 | | | 01 25 | | | | | |
| 451 | Comp | | | | | | | | |
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Exp. Mtr. Seeing

253

Date 1991 Feb 2/3 Observers Fich/Pdr

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison | |
|-------------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|----------------|------------------|
| | | | | | | | | Type/Filter | Exp. |
| CC00 451 | Comp | | | | | | | Fe A Clear | 100 ^s |
| 452 | " | | | | | | | Fe Ne Clear | 100 ^s |
| 453 | Flat | | | | | | | Tung Clear | 50 ^s |
| 454 | S 217 3ci | 4 51 02 | +47 49 | 20 15 | 20 45 | 0 20 W | | | |
| 455 | Comp | | | | | | | Fe Ne Clear | 100 ^s |
| 456 | SKY 4ci | | | 21 04 | 21 34 | 0 36 W | | | |
| 457 | Comp | | | | | | | Fe Ne Clear | 100 ^s |
| 458 | Bias (4x) | | | | | | | | |
| 459 | Comp | | | 22 05 | | | | Fe Ne Clear | 100 ^s |
| 460 | Flat | | | | | 04 ^h W | | Tung Clear | 50 ^s |
| 461 | HD 17520 | 2 43 32 | +59 58 | 22 12 15 | 22 42 | 04 25 W | | | |
| 462 | Comp | | | | | | | Fe Ne Clear | 100 ^s |
| 463 | Comp | | | 23 08 | | 02 46 W | | Fe Ne | 100 ^s |
| 464 | S 219 1ci | 4 48 40 | 47 13 51 | 23 14 | 23 44 | 03 22 W | | | |
| 465 | SKY 3ci | | | 23 57 30 | 00 27 30 | 03 34 W | | | |

Spectr. Temp. ...

Focus.....7

Spectr. Temp. ...

Exp. Mtr. Seeing

89

87

120

95

80

Spectr. Temp. Dome Temp./Hum. $\pm 0.7 / 79.6\%$ Transparency Conditions ... *Clear* 254
 Focus *7.15* 490 0 90 1024 2 1
 Spectr. Temp. Dome Temp./Hum. *0.0 / 84.7*

| Exposure | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|------------------|-----------|--------|-----------|-----|----------|--------------------------------|-------------|----------|------|--------------|--|---------|
| 100 ^s | | | | | CCD Cass | 600/24.5° | 250 μ | 3700K | | | G=2503 | |
| 100 ^s | | | | | | | Full length | | | | | |
| 50 ^s | | | | | | | | | | | MAX ADU = 14000 MID = 5000 | |
| 100 ^s | 89 | | | | | | | | | HII Reg | Brightest line MAX = 183 ADU | |
| 100 ^s | 87 | | | | done | 30 ^m East of Neb | | | | | | |
| 100 ^s | | | | | | | | | | | | |
| 50 ^s | 4120 | ~3" | V = 8.26 | | | | | | | Specphot Std | MAX ADU = 14000 MID λ = 5000 AIR MASS = 1.27 MAX ADU = 860 MID λ = 295 (Belmer jump) | |
| 100 ^s | | | | | | | | | | | | |
| 100 ^s | 95 | | | | | | | | | HII Reg | AIR MASS = 1.21 MAX = 185 | |
| 100 ^s | 100 | | | | done | 30 ^m East of Nebula | | | | | | |

#2

255

Date 1991 Feb 2/3

Observers

Fich/Pdr

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison | |
|-----------|------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------|------------------|
| | | | | | | | | Type/Filter | Exp. |
| 00466 | Comp | | | 00 33 | | 3 40 W | | FeNe Clear | 100 ^s |
| 467 | Flat | | | | | 3 43 W | +47 23 | Tung Clear | 50 ^s |
| 468 | Comp | | | 01 22 | | 3 01 W | -00 29 | FeNe Clear | 100 ^s |
| 469 | S 285 baib | 50 10 | -0 23 | 01 27 15 | 01 57 15 | 3 37 W | | | |
| 470 | SKY Tai | | | 02 05 40 | 02 35 40 | 3 43 W | -00 31 | | |
| 471 | Comp | | | | | | | FeNe Clear | 100 ^s |
| 472 | Flat | | | | | 3 46 W | -00 31 | Tung Clear | 50 ^s |
| 473 | Bias (4x) | | | | | | | | |
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Spectr. Temp. ...

Focus.....7.

Spectr. Temp. ...

Exp. Mtr.

Seeing

229

224

257

Date 1991 Feb 3/4 Observers Fridh/Pdr

Emulsion Batches:

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.....

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-------------------------|--------------------------|--------------|---------------------|-------------------------|-----------------------|---------------------|-------------|---------------------------|----------------------------|
| CCF000 66 | Comp comp position | | | | | | | FeNe Clear | 100 ^s |
| CCF000 67 | comp stellar position | | | | | | | " | " |
| CC00 474 | Comp | | | 18 39 | | | | FeNe Clear | 100^s |
| CC00 474 | Bias (4x) | | | | | | | | |
| CCF00 68 | Comp comp part | | | | | | | FeNe Clear | 50 ^s |
| 69 | comp stellar posit | | | | | | | " | 50 ^s |
| CC00 475 | Comp | | | 19:17 | | | | FeNe Clear | 100 ^s |
| 476 | HD17520 α_1 | 2 43 32 | +59 58 | 19:26 | 19:56 | 1 ^h 50 W | | | |
| 477 | Comp | | | | | | | FeNe Clear | 100 ^s |
| 478 | Flat | | | | | 1 ^h 52 W | | Tung Clear | 25 ^s |
| 479 | Comp | | | | | 0 34E | -5 22 | FeNe Clear | 100 ^s |
| 480 | Orion Neb α_1 | 5 30 23 | -5 28 | 20 27 35 | 20 42 35 | 0 15E | | | |
| 481 | SKY α_1 ? | | | 20 47 30 | 21 02 30 | 0 13E | | | |
| 482 | Comp | | | | | | | FeNe Clear | 100 ^s |
| 483 | Flat | | | | | | | Tung Clear | 20 ^s |
| 484 | Bias (4x) | | | | | | | | |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

9500?

327

325

Spectr. Temp. ~~7.15~~ Dome Temp./Hum. $+4.0/69.5\%$ Transparency Conditions *Clear, Vertical \rightarrow Cloudy*

Focus *7.15*

A90 0 45 1024 4 1 258
ccd smt

Spectr. Temp. Dome Temp./Hum.

| Exposure | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|------------------------|-----------|--------|-----------|-----|--|-----------------|--|--------------|------|---------|--|------------------------|
| <i>100^s</i> | | | | | <i>CCD-Cass</i> | <i>600/24.5</i> | <i>250μ Full length</i> | <i>3700A</i> | | | <i>30 c gain</i> | |
| <i>100^s</i> | | | | | | | | | | | | |
| <i>50^s</i> | | | | | | | | | | | <i>Camera refocused to</i> | |
| <i>50^s</i> | | | | | | | | | | | <i>7.00</i> | |
| <i>100^s</i> | | | | | | | | | | | | |
| <i>~ 2500?</i> | | | | | | | | | | | <i>AIRMASS = 1.09</i> | |
| <i>100^s</i> | | | | | | | | | | | | |
| <i>25^s</i> | | | | | | | | | | | <i>MAX ADU = 14400</i> | |
| <i>100^s</i> | | | | | | | | | | | <i>MID λ = 4900</i> | |
| <i>327</i> | | | | | <i>(1 arc min North of Trapezium)</i> | | | | | | <i>Clouds</i> | |
| <i>325</i> | | | | | | | | | | | <i>Cloudy</i> | |
| <i>100^s</i> | | | | | <i>All CC files backed up to Perseus</i> | | | | | | | |
| <i>20^s</i> | | | | | <i>& WORM to CC00484.fts.</i> | | | | | | | <i>MAX ADU ~ 12500</i> |

254

Date 1991 Feb 4/5 Observers Fich/Pdr

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|---------------|--------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------------------|
| CCF 000 68 | comp pos. n/a | | | | | | | FeNe clear | 20 ^s |
| CCF 000 69 | stellar position | | | | | | | FeNe clear | 100 ^s |
| CC 00 485 | Comp | | | | | | | | |
| 486 | Bias (4x) | | | | | | | | |
| 487 | HD 17520 | 2 43 32 | +59 58 | 20 02 | 20 26 | 2 16 W | | | |
| 488 | Comp | | | | | | | | |
| 489 | Flat | | | | | | | 1 hrs clear | 20 ^s |
| 490 | Flat | | | | | 1 39 W | +51 | " | 20 ^s |
| 491 | Comp | | | | | | | | |
| 492 | S 209 | 4 03 32 | 50 54 | 21 13 30 | 21 43 30 | 2 13 W | | | |
| | No comparison done | | | | | | | | |
| 493 | Comp | | | | | | | FeNe C clear | 100 ^s |
| 494 | Flat | | | 22 12 | | 0 49 W | +30 15 | | |
| 495 | S 241 | 05 57 33 | 30 15 33 | 20 20 50 | 20 43 30 | | | | |
| 496 | Comp. | | | | | | | | |

Spectr. Temp.

Focus 7.00

Spectr. Temp.

Exp. Mtr. Seeing

2070 3"

176

Spectr. Temp. Dome Temp./Hum. $+6.4/68.5\%$ Transparency Conditions *Partly cloudy* 260

Focus *7.00*

Spectr. Temp. Dome Temp./Hum.

490 0 45 1024 4 1
30 c gain *ccd fnt*

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|---|-----------|-----------|-----|-----------------|-----------------|----------------------------|--------------|------|--|---|---------|
| <i>20^s</i> | | | | <i>CCD Cass</i> | <i>600/24.5</i> | <i>250μ</i> | <i>3700Å</i> | | | <i>T=+6.0 F=7.00</i> | |
| <i>100^s</i> | | | | | | <i>full length</i> | | | | <i>focus correct</i> | |
| <i>2070</i> | <i>3"</i> | | | | | | | | <i>MAX ADU = 830</i> <i>MID λ = 639(!!)</i> <i>(no balmer jump)</i> | <i>1.02 airmass</i> <i>clear sky</i> | |
| <i>20^s</i> | | | | | | | | | | <i>MAX ADU = 13500</i> | |
| <i>20^s</i> | <i>B</i> | | | | | | | | | <i>MAX ADU = 13500</i> | |
| <i>176</i> | | | | | | | | | <i>H II Reg</i> | <i>Clouds</i> | |
| <i>Backed up to Perseus all CC files to</i> | | | | | | | | | | | |
| <i>+ WORM</i> | | | | | | | | | | | |
| <i>CC00496.FTS</i> | | | | | | | | | | | |

261

Emulsion Batches:

Date Observers

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|-------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CEF 43 | Hartmann IN | | | | | | | ThA | 20 |
| CEF 44 | OUT | | | | | | | | 20 |
| CEF 45 | Hartmann IN | | | | | | | | 20 |
| CEF 46 | OUT | | | | | | | | 20 |
| C | | | | | | | | | |
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Spectr. Temp.

Focus.....

Spectr. Temp.

Exp. Mtr. Seeing

263
pg 41

Thurs - Fri

Date 1991. Feb. 7/8... Observers Sr. + Pdr. Tn.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|----------------|-------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|--------|
| ce 2168.Fts | BIAS(4) | | | 18 10 | | | | | |
| 2169 | DARK 15 min | | | | | | | | |
| 2170 | DARK 15 min | | | | | | | | |
| 2171 | BIAS (4) | | | 20 35 | | | | | |
| 2172 | BIAS(4) | | | 20 40 | | | | | |
| 2173 | Comp | | | 22 37 | | | | Th A | 5 sec |
| 2174 | HD 48329 | 06 37 46.7 | +25 13 49 | 22 45 | 23 30 | 01 40 W | | | |
| 2175 | Comp | | | | | | | Th A | 5 sec |
| 2176 | Comp | | | 23 40 | | 01 34 W | | Th A | 5 sec |
| 2177 | HD 62509 | 07 39 11.8 | +28 16 04 | 23 42 | 00 27 | 01 36 W | | | |
| 2178 | Comp | | | 00 28 | | | | Th A | 5 sec |
| 2179 | Comp | | | 00 30 | | | | | 5 sec |
| 2180 | HD 74442 | 08 39 00 | +18 31 19 | 00 33 | 01 18 | 01 27 W | | | |
| 2181 | Comp | | | | | | | | 10 sec |
| 2182 | HD 74442 | 08 39 00 | +18 31 19 | 01 23 | 02 08 | 02 18 W | | | |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

910 BIA
SH

295 Peak

400 243
SH400 243
SH

Spectr. Temp. Dome Temp./Hum. $+2^{\circ}\text{C}$ 81% Transparency Conditions ... Hazy - Cloudy ... 264...

Focus

Pg #1

Spectr. Temp.

Dome Temp./Hum.

CGAIN = 90

CCD T @ $\approx -101^{\circ}\text{C}$

B

Echelle

CENTRAL SLIT

Person
Exp.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating Tilt | Slit WIDTH | Emulsion | P.H. Height | Program | Remarks | Quality |
|-----------|----------------------------|-----------|--------|-------------|--------------|-------------------|----------|-------------------|-----------------------------|--|---------|
| | | | | CCD Echelle | 16.55 | | | | X Grating 1200lms 0.4150 | 0 0 256 1024 4 1 CCDFAST | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| 5sec | | | | | | | | | | Cleaning again | |
| 910 | DIA \approx SIH | 4.38 | G8I | | 16.55 | 90 μ 0.265 | 3934A | 600 μ .205 | E Gen Srt-pgm | Dome T = 0 $^{\circ}$ C | |
| 5sec | | | | | | | | | | | |
| 5sec | | | | | | | | | | | |
| 6295 | POOR | 2.14 | KOIII | | | | | | B Gen Srt pgm | | |
| 5sec | | | | | | | | | | MAX here [Lightly touched on table tilt adj when moving to Comp prism mark] | |
| 5sec | | | | | | | | | S Gen | | |
| 400 | \approx 2/3 SI Height | 5.02 | KOIII | | | | | | S Gen Srt pgm | 980 max ADU Bottom ONCE | |
| 10sec | | | | | | | | | | | |
| 400 | 2/3 SI Height | 5.02 | KO III | | | | | | Srt pgm | (out to DC during exp) | |

265 #2

Date 1991 Feb 7/8..... Observers S.T.-Tn.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison | |
|-------------|----------------------------|---------------------|----------------------|-------------------------|-----------------------|-------------------|-------------|-------------|-------|
| | | | | | | | | Type/Filter | Exp. |
| CE02183.Fts | Comp | | | | | | | ThA | 10sec |
| 2184 | HD 74442 | 08 39 00 | +18 31 19 | 02 10 | 02 55 | 3 05 W | | | |
| 2185 | Comp | | | 02 56 | | | | ThA | 10sec |
| 2186 | Comp | | | 02 59 | | | | n | 10sec |
| 2187 | HD 4932 | 12 57 12 | +11 29 48 | 03 01 | 03 46 | 0 21 E | | | |
| 2188 | Comp | | | 03 47 | | | | ThA | 10sec |
| 2189 | HD 4932 | " | " | 03 48 | 04 33 | 0 25 W | | | |
| 2190 | Comp | | | 04 34 | | | | ThA | 10sec |
| 2191 | HD 4932 Comp | 12 57 12 | +11 29 48 | 04 35 | 05 20 | 1 13 W | | | |
| 2192 | Comp | 12 57 12 | +11 29 48 | 04 35 | | | | ThA | 10s |
| 2193 | HD 4932 | 12 57 12 | +11 29 48 | 05 21 | 06 03 | 1 54 W | | | |
| 2194 | Comp | | | | | | | ThA | 10s |
| 2195 | Comp for α Boo | | | | | | | ThA | 10s |
| 2196 | HD 124897 | 14 11 06 | +19 42 11 | 06 10 | 06 26 | 1 05 W | | | |
| 2197 | Comp | | | | | | | ThA | 10s |

Spectr. Temp.

Focus.....

Spectr. Temp.

Exp. Mtr. Seeing

22c ThA
= 100 mils32 2 1/2
1/100308 2 2/5
5/100

328

323 2 3/4
1/100373 2 1/2
1/100

53

47

Spectr. Temp.

Dome Temp./Hum. -1°C 85%

Transparency Conditions *clear* 266

Focus

Page # 2

H 12 0530 EST, I saw Antares emerge from behind moon. I didn't think we were supposed to see so well. (at N wedge) occultation, not eye obs

Spectr. Temp.

Dome Temp./Hum.
Echelle Central

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | WIDTH Slit | Emulsion | P.H. Height | Program | Remarks | Quality |
|--------------------------|----------------------------|-----------|--------|----------------|--------------|--------------|----------|--------------|---------------------------------|---|---------|
| 10 sec ThA = 100 ants | | | | CCD Echelle | 16.55 | 90u 0.265 | 3934A | 600u .205 | Xgrating 1200 lines/mm @ 0.4150 | | |
| 376 | $\approx 1/2$ SI height | 5.02 | K0 III | | | | | | | | |
| 1308 | $\approx 2/3$ SI height | 3.77 | G8 III | | | | | | | CCD T = -102°C | |
| 1308 | | | | | | | | | | | |
| 1323 | $\approx 2/3$ SI height | 3.77 | G8 III | | | | | | | | |
| 973 | $\approx 1/2$ SI H | 3.77 | G8 III | | | | | | | thin cloud now | |
| 1053 | | 3.77 | G8 III | | | | | | | cloud at end | |
| 2647 | | 1.19 | K2 III | | | | | | | CCDT = -101°C part cloudy \rightarrow thick at end | |

269 Fri Sat

Date 1991 Feb 8/9 Observers Srt - Tn

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|------------|-------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| CE02205fts | BIAS(4) | | | 16 55 | | | | | |
| 2206 | DARK(15min) | DARK.B47 | | | | | | | |
| 2207 | BIAS(4) | | | | | | | | |
| 2208 | DARK(15min) | | | | | | | | |
| 2209 | BIAS(4) | | | 17 31 | | | | | |
| 2210 | DARK(15min) | DARK.B47 | | | | | | | |
| 2211 | BIAS(4) | | | | | | | | |
| 2212 | DARK(15min) | | | | | | | | |
| 2213 | Comp | | | 18 29 | | | | ThA | 20sec |
| 2214 | HD 48329 | 06 37 47 | +25 13 49 | 18 30 | 19 18 | 2 30E | | | |
| 2215 | Comp | | | 19 17 | | | | ThA | 10sec |
| 2216 | HD 48329 | 06 37 47 | +25 13 49 | 19 18 | 19 38 | 2 08E | | | |
| 2217 | Comp | | | 19 41 | | | | | 10sec |
| 2218 | HD 48329 | 06 37 47 | +25 13 49 | 19 42 | 20 02 | 1 44E | | | |
| 2219 | Comp | | | 20 04 | | | | | 10sec |

Spectr. Temp. ...

Focus

Spectr. Temp.

Exp. Mtr. Seeing

0329 2/3

1150

200

271

p4 #2

Emulsion Batches:

Date 1991 Feb 8/9 Observers S.F.T. - T.G.

| 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. |
|-------------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| ceo 2220 | HD 48329 | 06 3747 | +25 13 49 | 20 07 | 20 27 | 01 19 E | | | |
| 2221 | Comp | | | 20 29 | | | | ThA | 10s |
| 2222 | HD 48330 | 06 3747 | +25 13 49 | 20 30 | 20 50 | 00 55 E | | | |
| 2223 | comp | | | 20 52 | | | | | 10 |
| 2224 | Comp | | | 20 55 | | | | | 10 |
| 2225 | HD 62509 | 07 3912 | +28 16 04 | 20 57 | 21 06 | 01 42 E | | | |
| 2226 | HD 62509 | " | " | 21 06 | 21 15 | 01 33 E | | | |
| 2227 | HD 62509 | " | " | 21 16 | 21 27 | 01 21 E | | | |
| 2228 | Comp | | | | | | | ThA | 10sec |
| 2229 | Comp | | | | | | | " | " |
| 2230 | HD 74442 | 08 3900 | +18 31 19 | 21 38 | 22 08 | 01 40 E | | | |
| 2231 | Comp | | | | | | | ThA | 10sec |
| 2232 | HD 74442 | " | " | 22 10 | 22 40 | 01 04 E | | | |
| 2233 | Comp | | | | | | | ThA | 10sec |
| 2234 | HD 74442 | " | " | 22 42 | 23 12 | 00 32 E | | | |

Spectr. Temp. ...

Focus

Spectr. Temp.

Exp. Mtr. Seeing

1006

1044

3106

3000

3004

475

488

573

2/3

2/3

slit H

VAR

V poor

1/2

slit H

1/2

slit H

1/2

slit H

5

213
p 3

Date 1991. Feb. 8/9..... Observers T.G. Sr.t.....

Emulsion Batches:

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.....

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-------------------|----------------------------|--------------|---------------------|-------------------------|-----------------------|----------------------|-------------|---------------------------|------|
| ce02235 | fts Comp | | | | | | | ThA | 10s |
| 2236 | Comp | | | | | | | " | 10s |
| 2237 | HD 71369 | 08 21 58 | +61 03 09 | 23 22 | 23 43 | 00 10 W | | | |
| 2238 | | | | | | | | ThA | 10s |
| 2239 | HD 71369 | 08 21 58 | +61 03 09 | 23 46 | 00 06 | 00 33 W | | | |
| 2240 | Comp | | | | | | | ThA | 10s |
| 2241 | HD 71369 | 08 21 58 | " | 00 07 | 00 27 | 00 54 W | | | |
| 2242 | Comp | | | 00 30 | | | | ThA | 10s |
| 2243 | FLATS (6 Flats) | | | 01 35 | | Drive off 00 30 W | +60° | | 120s |
| 2248 | | | | 01 04 | | | | | |
| ce02249 - 2254 | FLATS (6) | | | 01 35 | | 01 00 E | +23° | | 120s |
| ce02255 | Comp | | | 02 33 | | | | ThA | 10s |
| 2256 | HD 113226 | 12 57 12 | +11 29 48 | 02 35 | 02 55 | 01 09 E | | | |
| 2257 | Comp | | | | | | | ThA | 10s |
| 2258 | HD 113226 | 12 57 12 | " | 02 57 | 03 17 | 00 47 E | | | |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

1488 2 1/2

1216

1300 2 1/2

All Back

00 1/2

229

115 ps 4

Date 1991 Feb 8/9 Observers S. + T. 4

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|------------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce02259.45 | HD 113226 | 12 57 12 | +11 29 48 | 03 18 | 03 38 | 0 26 E | | | |
| 2260 | Comp | | | | | | | THA | 10s |
| 2261 | Comp | | | | | | | THA | 10s |
| 2262 | HD 124897 | 14 11 06 | +19 42 11 | 03 43 | 03 46 | 1 31 E | | | |
| 2263 | " | " | " | 03 47 | 03 57 | 1 20 E | | | |
| 2264 | " | " | " | 03 58 | 04 08 | 1 09 E | | | |
| 2265 | Comp | | | | | | | THA | 10s |
| | | | | | | | | | |
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Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

3150

1027

1000

27 pg1 SAT-SUN

Date 1991 Feb 9/10..... Observers S-t-Tu.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|--------|
| CE02266A5 | BIAS(A) | | | 17 20 | | | | | |
| 2267 | DARK 15m | | | | | | | | |
| 2268 | BIAS (A) | | | | | | | | |
| 2269 | DARK 15m | | | | | | | | |
| 2270 | DARK 15m | | | 18 08 | | | | | |
| 2271 | BIAS(A) | | | 18 24 | | | | | |
| 2272 | Comp | | | | | | TH A | | 10 sec |
| 2273 | HD 23249 | 03 3827 | -10 0606 | 18 28 | 18 59 | 00 17W | | | |
| 2274 | Comp | | | | | | TH A | | 10 |
| 2275 | HD 23249 | " | " | 19 00 | 19 30 | 00 48W | | | |
| 76 | Comp | | | | | | TH A | | 10 |
| 77 | HD 23249 | " | " | 19 34 | 20 00 | 01 18W | | | |
| 78 | Comp | | | | | | TH A | | 10 |
| CE022797 | Flats | | | 20 08 | | 00 30W | -10° | | 120 |
| → 0228A | | | | | | | | | |

Spectr. Temp.

Focus.....

Spectr. Temp.

Exp. Mtr. Seeing

35 3/3 4
W 000

283

577 100

Spectr. Temp. Dome Temp./Hum. +3°C ... 78% ... Transparency Conditions . Mostly clear 278 ...

Focus 90 CGAIN T = -101°C
 Spectr. Temp. Dome Temp./Hum. control order
 0 0 256 1024 1 1 CCD FMT

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/ Tilt | Slit width | Emulsion λ | SLIT P.H. Height | Program | Remarks | Quality |
|-----------|------------------|-----------|-------|-------------|---------------|------------|--------------------|-------------------|---------|---------------------------------|---------|
| | | | | LCD Echelle | 16.55 | 90 μ | 3990Å | 600 μ .205 | | X grating 1200/1/min. E.O.H.S.D | |
| 351 | 2/3 SI Flight | 4.46 | KO IV | | | | | | S Eri | | |
| 283 | | | | | | | | | | | |
| 227 | POOR | | | | | | | 600 μ | | (cloud at end) | |
| | | | | | | | | 800 μ .135 | | | |

panson
Exp.

Use

10

10

10

12

2A p92

Date 1991 Feb 9/10... Observers Srt/Tn.....

Emulsion Batches:

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

| 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. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|------------------------|---------------------------|------|
| ce02285 | Comp | | | | | | | ThA | 10s |
| 2286 | HD 23219 | 03 3827 | -10 06 06 | 20 33 | 21 03 | 2 21 W | | | |
| 2287 | Comp | | | | | | | ThA | 10s |
| 2288 | HD 23249 | " | " | 21 04 | 21 34 | 2 52 W | | | |
| 2289 | Comp | | | | | 2 53 W | $\hat{\sim} -10^\circ$ | ThA | 10s |
| 2290 | Comp | | | | | 1 50 E | $\hat{\sim} +60 50$ | ThA | 10s |
| 2291 | HD 71369 | 08 2158 | +61 03 09 | 21 43 | 22 03 | 1 26 E | | | |
| 2292 | " | " | " | 22 04 | 22 24 | 1 05 E | | | |
| 2293 | Comp | | " | 22 26 | 22 46 | | | ThA | 10s |
| 2294 | HD 71369 | 08 2158 | +61 03 09 | 22 26 | 22 46 | 0 43 E | | | |
| 2295 | Comp | | | | | | | ThA | 10s |
| 2296 | Comp | | | | | | | ThA | 10s |
| 2297 | HD 74442 | 08 3900 | +18 31 19 | 22 52 | 23 22 | 0 21 E | | | |
| 2298 | Comp | | | | | | | ThA | 10s |
| 2299 | HD 74442 | 08 3900 | +18 31 19 | 23 24 | 23 44 | 00 01 W | | | |

Spectr. Temp.

Focus.....

Spectr. Temp.

Exp. Mtr. Seeing

350 1/2
5/11310 2.05
5/11360 2.05
5/11

435

750 7
5/1120 15
5/1174 15
5/11

Spectr. Temp. Dome Temp./Hum. $+1^{\circ}\text{C}$ 80% Transparency Conditions ... CLEAR. 49.917 280

Focus 2.852

Spectr. Temp. Dome Temp./Hum.

| Exp. Mtr. | Seeing | Pig. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | SLIT P.H. | Program | Remarks | Quality |
|-----------|---------------------|-----------|-------|-------------|--------------|----------|----------|----------------|---------|---|---------|
| | | | | CCD Echelle | 16.55 | 90 μ | 39409 | 4 600 μ | | | |
| 350 | 1/2 slit | 4.46 | KOIV | | | | | | 5 Eri | | |
| 310 | 2.05 slit height | | | | | | | | | | |
| 2366 | 2.05 slit | 4.20 | G5III | | | | | | | note is 6 pixel line shift between these comps. | |
| 2405 | | | | | | | | | 0 UMa | | |
| 2250 | .7 slit | 4.20 | G5III | | | | | | | MAX ADU in central order 2100 = 950 ADU | |
| 1120 | .5 slit | 5.02 | KOIII | | | | | | 5 Cnc | continuum MAX 21 MAX in center order 400/304 | |
| 674 | .5 slit | 5.02 | KOIII | | | | | | 5 Cnc | | |

281 pg 43

Date 1991 Feb 9/10 Observers Srt./TA

Emulsion Batches:

.....

| 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. |
|----------------------|-----------------------------|--------------------|----------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 2300 | Comp HD 74442 | 08 3900 | +18 31 19 | 23 45 | | W | | ThA | 10s |
| 2301 | Comp HD 74442 | 08 3900 | +18 31 19 | 23 55 | 00 15 | 00 32W | | ThA | 10s |
| 2302 | Comp | | | | | | | ThA | 10s |
| 2303 | Comp | | | | | | | ThA | 10s |
| 2304 | HD 76294 | 08 5006 | +06 19 34 | 00 22 | 00 42 | 00 48W | | | |
| 2305 | " | " | " | 00 43 | 00 04 | 01 10W | | | |
| 2306 | Comp | | | | | | | ThA | 10s |
| 2307 | HD 76294 | 08 5006 | +06 19 34 | 01 05 | 01 25 | 01 31 W | | | |
| 2308 | " | " | " | 01 26 | 01 46 | 01 52 W | | | |
| 2309 | Comp | | | 01 47 | | | | | |
| ce 2310 → ce 2315 | Flats (6) | | | | | 01 00 E | +61° | TUNG | 120s |
| 2316 | Comp | | | 03 04 | | | | ThA | 10s |
| 2317 | HD 94264 | 10 47 43 | +34 45 14 | 03 05 | 03 25 | 01 35 W | | | |
| 2318 | " | " | " | 03 27 | 03 47 | 01 57 W | | | |
| 2319 | Comp | | | | | | | ThA | 10s |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

4.5
5.1

5.4 0.6

7.48 0.5

7.50

6.20

5.73

0.7 4

2.50

283 pg 44

Emulsion Batches:

Date 1991 Feb 9/10..... Observers Sr. T. - 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. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| Ce02320 | HD 94264 | 10 4743 | +344514 | 03 48 | 04 08 | 2 18W | | | |
| 2321 | " | " | " | 04 09 | 04 29 | 2 39W | | | |
| 2322 | Comp | | | | | | | Th A | 10s |
| 2323 | Comp | | | | | | | Th A | 10s |
| 2324 | HD113226 | 12 5712 | +112948 | 04 35 | 04 55 | 00 55W | | | |
| 2325 | " | " | " | 04 56 | 05 16 | 01 16W | | | |
| 2326 | Comp | | | | | | | Th A | 10s |
| 2327 | HD113226 | 12 5712 | +112948 | 05 21 | 05 41 | 01 41W | | | |
| 2328 | " | " | " | 05 42 | 06 02 | 02 03W | | | |
| 2329 | Comp | | | | | | | Th A | 10s |
| 2330 | BIAS (1) | | | | | | | | |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

052 0.4
SIH

120

980 0.6
SIH

1018

735 0.8
SIH

775

Spectr. Temp. Dome Temp./Hum. -1.5°C 60%
 Focus #4
 Spectr. Temp. Dome Temp./Hum. -3°C 50%

Transparency Conditions . Really Clear 284
 And Temp: Rel Humidity dropping Fast!

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. High! | Program | Remarks | Quality |
|--------------------------------|----------------|-----------|----------|-------|--------------|----------|----------|------------|---------|--|---------|
| 1052 | 0.4 SI H | 4.87 | KOIII-IV | | 16.55 | 90 μ | 3940A | 600 μ | 46 LMi | 420 A04 ^{max} third ORDER CONT | |
| 1120 | | | | | | | | | | | |
| 980 | 0.6 SI High | 3.77 | G8III | | | | | | | 750 μ for Cont. mix, to check | |
| 1018 | | " | " | | | | | | | | |
| 735 | 0.8 SI High | 3.77 | G8III | | | | | | E Vir | | |
| 775 | | " | " | | | | | | | | |
| Worked - To persons to end now | | | | | | | | | | | |

285

page #1

Date 1991 Feb 10/11..... Observers ... Srt... -Tn.....

Emulsion Batches:

BG-3 filter for Flat source

| 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. |
|-----------|-------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| Ce02331 | FTS B1A5(4) | | | 17 18 | Topup @ 17 10 | T → | +14° | | |
| 2332 | 15 min Dark | | | | | | | | |
| 2333 | Bias (4) | | | | | | | | |
| 2334 | 15 min Dark | | | | | | | | |
| 2335 | Bias (4) | | | 18 03 | | | | | |
| 2336 | 15 min Dark | | | | | | | | |
| 2337 | Bias (4) | | | | | | | | |
| 2338 | 15 min Dark | | | | | | | | |
| 2339 | Comp | | | 18 39 | | | | ThA | 10s |
| 2340 | HD 23249 | 03 38 27 | -10 06 06 | 18 42 | 19 12 | 00 33 W | | | |
| 2341 | Comp | | | | | | | ThA | 10s |
| 2342 | HD 23249 | 03 38 27 | -10 06 06 | 19 14 | 19 45 | 01 06 W | | | |
| 2343 | Comp | | | | | | | ThA | 10s |
| 2344 | HD 23249 | 03 38 27 | -10 06 06 | 19 46 | 20 16 | 01 38 W | | | |
| 2345 | Comp | | | | | | | ThA | 10s |

Spectr. Temp. ...

Focus. Note ...

Spectr. Temp. ...

Exp. Mtr. Seeing

400 .5

470 .7

470 .7

470 .7

395 .7

470 .7

251

pg #2

Date 1991..Feb.10/11..... Observers ..S.r.t...-T.n.....

Emulsion Batches:

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

| 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. |
|-----------------------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce02346 FB | HD 23249 | 03 3827 | -10 0606 | 20 19 | 20 49 | 2 11 W | | | |
| 2347 | Comp | | | | | | | ThA | 10s |
| 2348 | Comp | | | | | | | ThA | 10s |
| 2349 | HD 40035 | 05 5118 | +54 1637 | 20 57 | 21 17 | 0 23 W | | | |
| 2350 | " | " | " | 21 18 | 21 39 | 0 45 W | | | |
| 2351 | Comp | | | | | | | ThA | 10s |
| 2352 | HD 40035 | 05 5118 | +54 1637 | 21 42 | 22 02 | 1 08 W | | | |
| 2353 | HD 40035 | " | " | 22 03 | 22 23 | 1 29 W | | | |
| 2354 | Comp | | | | | | | ThA | 10s |
| 2355 | Comp | | | | | | | ThA | 10s |
| 2356 | HD 76294 | 08 5006 | +06 1934 | 22 31 | 22 51 | 1 57 W | | | |
| 2357 | Comp | | | | | | | ThA | 10s |
| 2358 - ce023 | Flats (6) | | | 23 11 | | 01 W | -10° | TUNG | 120 |
| ce02364 - 02369 | Flats (6) | | | 23 51 | | 00 15 W | +53° | " | " |

Spectr. Temp.

Focus... 240.....

Spectr. Temp.

Exp. Mtr. Seeing

026 .7

245

287

579 .8

Spectr. Temp. Dome Temp./Hum. - 1.7 62% Transparency Conditions ... Sl. 1.42g - Snow 288
 Focus ... 240 pg 42
 Spectr. Temp. Dome Temp./Hum. - 5.5°C 72% S to AM

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit Width | Emulsion | P.H. | Program | Remarks | Quality | |
|-----------|------------|-----------|-----------|---------------------------------|--------------|------------|----------|------|---------|---|---------|--|
| | | | | ccc Echelle | 16.55 | 90μ | 3940A | 600μ | | 1200 ln/min X grating @ 0.450 | | |
| | | | | | | | | | | (Thinned test target too) Note - This Comp stronger than previous. | | |
| 1026 | 5.7 SIH | 4.72 | KO III | | | | | | S Hur | | | |
| 945 | | | | | | | | | | | | |
| 1087 | | | | | | | | | | | | |
| 579 | 5.8 SIH | 4.11 | G9 II-III | | | | | | | squid Snow specific | | |
| | | | | | | | | | | CCDT: -101.8°C | | |
| | | | | | | | | | | Top up @ 0020 AM | | |
| | | | | All obs worked to here now Ta | | | | | | | | |
| | | | | All to Perseus ccd Echelle Also | | | | | | | | |

289 pg #1

Date 1991 Feb 11/12 Observers Srt/Tm/Pdr

Emulsion Batches:

.....

| 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. |
|-------------------|------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| ce 0 2370 | Bias (4x) | | | 17:15 | | | | | |
| 2371 | Dark | | | | | | | | 15m |
| 2372 | Bias (4x) | | | | | | | | |
| 2373 | Dark | | | | | | | | 15min |
| 2374 | Comp. | | | 18:28 | | | | Th-A | 10s |
| 2375 | HD 40035 | | | 18:30 | 18:50 | 2:00 E | | | |
| 2376 | " " | 05 51 18 | +54 16 37 | 18:51 | 19:11 | 1:39 E | | | |
| 2377 | Comp | | | | | | | Th A | 10s |
| 2378 | HD 40035 | " | " | 19 14 | 19 34 | 1 16 E | | | |
| 2379 | " | " | " | 19 35 | 19 55 | 0 55 E | | | |
| 2380 | Comp | | | | | | | Th A | 10s |
| 2381 | comp HD 48329 | 06 37 47 | +25 13 49 | 20 00 | | | | Th A | 10s |
| 2382 | HD 48329 | " | " | 20 01 | 20 19 | 1 15 E | | | |
| 2383 | Comp | | | 20 20 | | | | Th A | 10s |
| ce 2384 - 2389 | Flats (6) | | | | | 01 15 E | +54° | | |

T for -10°
 Spectr. Temp. ...
 Focus ... 240
 Spectr. Temp.

Exp. Mtr. Seeing

646

82

350

Poor

344

Poor

All OK

T for -10°C from "Setup"
 Spectr. Temp. = .2450 Dome Temp./Hum. -8.6/52.9% Transparency Conditions Clear, Partly cloudy...
 Focus ... 240 py #1 290
 Spectr. Temp. Dome Temp./Hum. -9.0/60%

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit width | Emulsion | P.H. Height | Program | Remarks | Quality |
|---|--------|-----------------|----------------|----------------|--------------|-------------|----------|--|---------|------------------------|---------|
| | | | | CCD echelle | 16.55 | 90μ .265 | 3940A | 600μ .205 | | 1200 ln/mm X grating @ | 4.150 |
| 15m | | | | | | | | | | | |
| 15min | | | | | | | | | | | |
| 10 ^s | | | | | | | | | | | |
| 646 | | 4.72 | K0III | | | | Saur | | | | |
| 682 | | | | | | | " | | | | |
| 10 ^s | | | | | | | | | | | |
| 850 | poor | | | | | | | | | | |
| 844 | | | | | | | | | | | |
| 10 ^s | | | | | | | | | | | |
| 10 ^s | | 4.38 | G8I | | | | E Gem | | | | |
| | poor | 4.38 | G8I | | | | E Gem | | | Clouds saw dead | |
| 10 ^s | | | | | | | | | | | |
| All backed up to ucam & persers to bare | | | | | | | | 80μ .205 set ? .185 probably Tu! | | BG -3 filter used | |

2A1

pg #2

Date 1991 Feb 11/12^h Observers Jh.../Pdt.....

Emulsion Batches:

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.....

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|---|--------------------|---------------------------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| cef x 001.ft _s | 0°D, 6E, Ech. flex | cef x 0001.ft _s | | 22 29 | | 06 E | 0° | ThA | 10s |
| cef x 002.ft _s | 0°D, 5E, Ech. flex | cef x 0002.ft _s | | | | 05 E | 0° | | |
| cef x 003.ft _s | 0°D, 4E, Ech. flex | cef x 0003.ft _s | | | | 04 E | 0° | | |
| cef x 0004.ft _s | 3E | | | | | 03 E | 0 | | |
| cef x 0005.ft _s | 2E | | | | | 02 E | 0 | | |
| cef x 0006.ft _s | 1E | | | | | 01 E | 0 | | |
| <u>cefx0007.ft_s</u> | 0E | | | | | 00 | 0 | | |
| cef x 0008.ft _s | 1W | | | | | 01 W | 0° | | |
| cef x 0009.ft _s | 2W | | | | | 02 W | 6° | | |
| cef x 0010.ft _s | 3W | | | | | 03 | | | |
| 11.ft _s | 4W | | | | 23 | 04 | | | |
| cef x 0012 | 45 Dec, 9E | | | 23 15 | | 09 E | +45° | | |
| 0013 | 8 | | | | | 8 | " | | |
| 0014 | 7 | | | | | 7 | " | | |
| 0015 | 6 | | | | | 6 | " | | |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

Spectr. Temp. Dome Temp./Hum. *-8.5 58%*

Transparency Conditions *SNOW* *292*

Focus

Flexure Tests - 90 cc gain still

Spectr. Temp. Dome Temp./Hum.

T = -102°C

32 0 64 1024 81 CCD FMT

parison
Exp.

10s

| Exp. Mtr. | Seeing | Pig. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|-----|-----------------------|--------------|----------------------|--------------|--------------|---------|-------------------|---------|
| | | | | <i>CCD Edelle</i> | <i>16.55</i> | <i>900 200μH</i> | <i>3940Å</i> | <i>2ci ✓</i> | | | |
| | | | | | | | | <i>3ci ✓</i> | | <i>-.13 -.48</i> | |
| | | | | | | | | <i>2ci ✓</i> | | <i>-.15 -.85</i> | |
| | | | | | | | | <i>3ci ✓</i> | | <i>-.14 -1.27</i> | |
| | | | | | | | | <i>2ci ✓</i> | | <i>-.02 -1.61</i> | |
| | | | | | | | | <i>3ci ✓</i> | | <i>.26 -1.82</i> | |
| | | | | | | | | <i>✓</i> | | <i>.71 -2.04</i> | |
| | | | | | | | | <i>1ci ✓</i> | | <i>1.16 -2.71</i> | |
| | | | | | | | | <i>2ci ✓</i> | | <i>1.62 -4.16</i> | |
| | | | | | | | | <i>3ci ✓</i> | | <i>2.10 -4.00</i> | |
| | | | | | | | | <i>4ci ✓</i> | | <i>2.43 -3.78</i> | |
| | | | | | | | | <i>1</i> | | <i>.62 .91</i> | |
| | | | | | | | | <i>2</i> | | <i>.47 .70</i> | |
| | | | | | | | | <i>3</i> | | <i>.28 .38</i> | |
| | | | | | | | | <i>4</i> | | <i>0 0</i> | |

293

Emulsion Batches:

Date 1991 Feb 11/12 Observers T.G. - Pdo

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|----------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CEX00 | Flex Test CONT | | | | | | | | |
| 16 | 45 Dec, 5 | | | | | 05 E | +45° | ThA | 10s |
| 17 | 4 | | | 23 23 | | 04 E | | | |
| 18 | 3 | | | | | 03 E | | | |
| 19 | 2 | | | | | 02 E | | | |
| 20 | 1 | | | | | 01 E | | | |
| 21 | 0 | | | | | 00 | | | |
| 22 | 1W | | | | | 01 W | | | |
| 23 | 2W | | | | | 02 W | | | |
| 24 | 3W | | | | | 03 W | | | |
| 25 | 4W | | | | | 04 W | | | |
| 26 | 5W | | | | 23 50 | 05 W | | | |
| 27 | 45 Dec 5, 50W | | | | | 05 50W | +45° | | |
| Cef 47 | Hartmann - IN | | T2 - 6.0 | F = .240 | | | | ThA | 30 |
| 48 | - OUT | | | | | | | | 30 |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

All ce

Spectr. Temp. Dome Temp./Hum. Transparency Conditions *More snow* *294*

Focus

Spectr. Temp. Dome Temp./Hum.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality | |
|-----------|--------|-----------|-----|-------------------------------------|--------------|-----------------|----------|------|---------|--------------------------------------|--------------|--|
| | | | | CCD Echelle | 16.55 | 90 _u | 3948 | 5ci | ✓ | -17 -131 .4150 x grating 1200k/mm | | |
| | | | | | | | | 6ci | ✓ | -.24 -.6A | | |
| | | | | | | | | 1ci | ✓ | -.32 -.91 | | |
| | | | | | | | | 1ci | | -.27 -1.23 | | |
| | | | | | | | | 2ci | | -.05 -1.56 | | |
| | | | | | | | | 3ci | | .29 -1.63 | | |
| | | | | | | | | 4ci | | .70 -2.00 | | |
| | | | | | | | | 5ci | | 1.13 -2.61 | | |
| | | | | | | | | 6ci | | 1.60 -2.70 | | |
| | | | | | | | | 1ci | | 1.81 -2.51 | | |
| | | | | | | | | 2ci | | 2.19 -2.90 | | |
| | | | | All cefx files backed up to Perseus | | | | | | | ccd/ccd test | |

295

Date 1991 Feb 12/13 Observers KK/S.H./Pdr.....

Emulsion Batches:

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.....
.....

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|-----------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----------------|
| cef0050 | Hartmann - IN | | | | | | | JhA | 20 ^s |
| 51 | " - OUT | | | | | | | | |
| cef0052 | Hartmann - IN | | | | 20 10 | 3 W | 0° | JhA | 20 ^s |
| cef0053 | - OUT | | | | | " | " | " | " |
| 54 | Hartmann - IN | | | | | 00 | 0° | " | " |
| 55 | - OUT | | | | | " | " | " | " |
| 56 | Hartmann - IN | | | | | 00 | +45° | " | " |
| 57 | - OUT | | | | | " | " | | |
| 58 | Hartmann - IN | | | | | 3 W | +45° | | |
| 59 | - OUT | | | | 21 00 | " | " | | |
| 60 | Hartmann - IN. | Feb 14 | 12 ^h | | on platform | | | JhA | 20 ^s |
| 61 | Hartmann - OUT | | | | | | | | |
| CCF0070 | Hartmann - comparison | | | | | | | FeNe | 20 ^s |
| 71 | - stellar | | | | | | | clear | 20 ^s |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

all cef

Spectr. Temp. Dome Temp./Hum. $-5.3/60.1\%$ Transparency Conditions *Overcast* 296...

Focus

Spectr. Temp. Dome Temp./Hum. *Slit*

| Expansion Exp. | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/ Tilt | Slit | Emulsion | P.H. height | Program | Remarks | Quality |
|-------------------|-----------|--------|--------------|-----|-------------|---------------------|--------------|----------|----------------|----------------------|-------------------|--------------|
| 20 ^s | | | | | 16.55 | 1200 l/mm 3930 Å | 90 μ | | | T = -5.5 F = .250 | 00 256 1024 4 1 | <i>shift</i> |
| 20 ^s | | | | | | | 90 μ .265 | | 200 μ .245 | T = -5.3 F = .250 | 00 256 1024 4 1 | - .27 |
| " | | | | | | | | | | " | | |
| " | | | | | | | | | | T = -5.3 | | - .44 |
| " | | | | | | | | | | " | | |
| " | | | | | | | | | | " | | - .52 |
| " | | | | | | | | | | " | | |
| " | | | | | | | | | | T = -5.3 | | - .45 |
| " | | | | | | | | | | " | | |
| 20 ^s | | | | | | | | | | T = -2.3 | 0 0 170 1024 6 1 | + .71 |
| | | | | | | | | | | | | |
| | | | | | <u>Cass</u> | 600/2650 | 250 μ | | | T = -7.8 | F = 7.10 | |
| | | | | | | | | | | | 535 0 16 1024 5 1 | |

all cof files backed up to Perseus (Pde)

297

SAT SUN

Date 1991 Feb 16/17..... Observers .. T. n. / P. G.

Emulsion Batches:

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.....

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-------------|--|--------------|---------------------|-------------------------|-----------------------|-------------------|----------------|---------------------------|------|
| CCM 0001 | FeNe MAP | 4400A | | | | | Diffuser IN | FeNe clear | 20s |
| 0002 | FeNe MAP | 3930A | | | | | | FeNe clear | 20s |
| 0003 | FeNe MAP | 3450A | | | | | | FeNe clear | 40s |
| 0004 | TiNe MAP | 3450A | | | | | | TiNe clear | 70s |
| | FeA | | | | | | | FeA | |
| 1991 Feb 18 | More Maps for DID after Re mounting 600 in/mm gratings | | | | | | | | |
| CCM 0005 | FeA | 4600A center | | | | | Diffuser IN | FeA clear | 60s |
| CCM 0006 | FeNe | | | | | | | FeNe clear | 60s |
| 0007 | TiNe | | | | | | | TiNe clear | 90s |
| | FeAr (Comp) | | | | | | | | |
| CCF 0007 | FTS Comp pos'n | | | 21 50 | | | | FeA clear | 60s |
| CCF 0007 | FTS Stellar pos'n | | | | | | | " | " |
| 74 | Comp | | | | | | | " | 80s |
| 75 | stellar | | | | | | | " | 80s |

Spectr. Temp. ...

Focus 7.10

Spectr. Temp. ...

Ap. Mtr. Seeing

Spectr. Temp. -7.8°C Dome Temp./Hum. -7.8°C 68% Transparency Conditions 298

Focus 7.10

Spectr. Temp. Dome Temp./Hum. 535 0 16 1024 ~~5~~, 1 CCD FMT

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|------|----------|--------------|-----------|-----------|-------|---------|---|---------|
| 425 | | | | CASS CCD | 600/25.8 | 250 μ | 4400A | | | G2650 | |
| 205 | | | | " | 600/25.0 | " | 3930A | | | G2550 | |
| 405 | | | | " | 600/24.3 | " | 3450A | | | G2450 | |
| 705 | | | | | 600/24.3 | | 3450A | | | G2450 | |
| | | | | | 600/ | | | | | | |
| | | | | | | | | | 520 0 | 16 1024 A 1 CCD FMT | |
| 605 | | | | CCD CASS | 600/26.3 | | 4800A | | G=2690 | | |
| 605 | | | | " | " | | " | | " | | |
| 905 | | | | " | " | | " | | " | MAX ADU / column \approx 370 ADU 2-10 PCOLS MAX MEAN | |
| | | | | | 600/26.3 | 250 μ | " | | " | T = -1.6°C Focus 7.10 | |
| 450 | 0 | 24 | 1024 | 8 | 1 | | | | " | | |
| | | | | | | | | | " | | |
| 446 | 0 | 24 | 1024 | 8 | 1 | 1800/565 | 250 μ | 6600A | G=6045 | T = -1.4°C Focus 7.10 | |
| | | | | | " | " | " | | " | | |

209 pg #1

Sun Mon

Date 1991 Feb 7/18... Observers Fels - Tn.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|-----------------|--------------|---------------------|-------------------------|------------------------------|-------------------|-------------|---------------------------|------|
| CC00497 | BIAS | | | | | | | | |
| 498 | " | | | | | | | | |
| 499 | Comp | | | | | | | FeAr CLEAR | 90s |
| 500 | HD 11415 ECAS | 1 47 11 | 63 10 | 18:31:00 | 18:32:45 24:53 | 2 12W | | | |
| 501 | Comp | | | 18:34:50 | | | | FeAr CLEAR | 90s |
| 502 | comp Fe-A | | | 18:39:50 | | | | n | n |
| 503 | HD 16908 MR501 | 02 37 35 | 27 16 54 | 18:43:20 | 18 51 | 01 40W | | | |
| 504 | Comp | | | 18:52:00 | | | | FeAr | 90 |
| 505 | comp | | | 18:56:45 | | | | FeAr | 90 |
| 506 | MP 22928 SPen | 03 35 48 | 47 28 04 | 18:59:20 | | 00 50W | | | |
| 507 | comp | | | 19:01:40 | | | | | 90 |
| 508 | comp | | | 19:05:12 | | | | | 90 |
| 509 | HD 22951 HR1123 | 03 36 02 | 33 38 39 | 19 08 00 | 19 17 50 | 01 08 W | | | |
| 510 | comp | | | 19:18:25 | | | | | 90s |
| 511 | comp | | | 19:22:55 | | | | | 90s |
| 512 | HD 26326 | 04 04 45 | -16 38 58 | 19:26:25 | 19 51 48 | 01 16 W | | | |

Spectr. Temp. ...

Focus 7

Spectr. Temp.

Exp. Mtr. Seeing

30000 OK

30000

2000

1000

5000

Spectr. Temp. -5°C Dome Temp./Hum. -5°C 56% Transparency Conditions FINE 300

Focus 7.10 Pg# 1 30 CGAIN T -102°C

Spectr. Temp. Dome Temp./Hum. 510 0 40 1024 21 CCD FMT

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|---------------------------|-----------|------|--------------------------|----------------------------|-----------|----------|------|--------------------|---------|---------|
| | | | | B140 Cd11 CCD CHSS | 1800/56.5 | 250 μ | Hd | X | Central 7 6600A | *G-6045 | |
| | | | | | [Slit length intermediate] | | | | | | |
| 90s | | | | | | | | | | G 6045 | |
| | 30000 25000 | OK | 3.38 | B3III | | | | | | | |
| 90s | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| | 30000 | | 4.66 | B3V | | | | | | | |
| 90s | | | | | | | | | | | |
| 90s | | | | | | | | | | | |
| | 30000 | | 3.00 | B5II | | | | | | | |
| 90s | | | | | | | | | | | |
| 90s | | | | | | | | | | | |
| | 30000 | | 4.97 | B05II | | | | | | | |
| 90s | | | | | | | | | | | |
| 90s | | | | | | | | | | | |
| | 30000 | | 5.37 | B4II | | | | | | | |
| | | | 5.37 | B4V | | | | | | | |

20¹ pg #2

Date 1991 Feb 17/18... Observers Fds - Th.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|----------------|---------------------------|-------|
| CC 00513 | fts Comp | | | 19 53 00 | | | DIFFUSER IN | FEAR CLEAR | 90s |
| 514 | comp | | | 19 56 48 | | | | | 90 |
| 515 | HD 23793 | 03 42 47 | 10 50 04 | 19 59 30 | 20 09 57 | 1 55 W | | | |
| 516 | Comp | | | 20 10 48 | | | | | 90 |
| 517 | comp | | | 20 14 15 | | | | | 90 |
| 518 | HD 26912 | 04 10 06 | 08 38 31 | 20:17:05 | 20 27 30 | 1 40 W | | | |
| 519 | comp | | | 20:23:17 | | | | | 90s |
| 520 | comp | | | 20:26:25 | | | | | 90s |
| 521 | HD 28375 | 04 23 22 | 01 9 32 | 20 29 | 20 48 00 | 1 53 W | | | |
| 522 | comp | | | 20 48 31 | | | | | 90s |
| 523 | comp | | | 20 52 45 | | | | | |
| 524 | HD 32650 | 04 59 30 | 41 05 58 | 20 55 20 | 20:56:30 | 1 24 W | | | 30000 |
| 525 | comp | | | 20 57 27 | | | | | |
| 526 | comp | | | 21 01 20 | | | | | |
| 527 | HD 34503 | 05 12 45 | -6 57 09 | 21:03:48 | 21:08:15 | | | | 3000 |
| 528 | comp | | | 21:08:50 | | | | | |

Spectr. Temp. ...

Focus 7:1

Spectr. Temp. ...

Exp. Mtr. Seeing

500

Spectr. Temp.

Dome Temp./Hum. ^{-65°C 57%}

Transparency Conditions *Thin cloud coming*

Focus *7.10*

Pg 2

302

Spectr. Temp.

Dome Temp./Hum.

| Exposure | Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|----------|-----------|--------|-----------|-------|-------------|--------------|------|----------|------|---------|-------------------|---------|
| 90s | | | | | CCD CASS | 1800/56.5 | 250μ | 6600Å | | | | |
| 90 | | | | | | | | | | | | |
| | | | 5.07 | B3V | | | | | | | | |
| 90 | | | | | | | | | | | | |
| 90 | | | | | | | | | | | | |
| | | 5050 | 4.29 | B3IV | | | | | 5ci | | guide L of center | |
| 90s | | | | | | | | | | | | |
| 90s | | | | | | | | | | | | |
| | | | 5.55 | B3V | | | | | 6ci | | | |
| 90s | | | | | | | | | | | | |
| 3000 | | | | | | | | | | | | |
| | | | 3.17 | B3V | | | | | 2ci | | | |
| 3000 | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | 3.60 | B3III | | | | | 3ci | | | |

203 pg 43

Date 1991..Feb.17/18..... Observers ... Fds - Tl.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 529 | comp | | | 21:12:05 | | | | FeAr clear | 90s |
| 530 | HD 34816 | 05 14 58 | -13 16 48 | 21 13 45 | 21:24:45 | 1 38 W | | | |
| 531 | Comp | | | 21:25:17 | | | | FeAr Clear | 90s |
| 532 | comp | | | 21:25:30 | | | | " | " |
| 533 | HD 35149 | 05 22 50 | 03 32 40 | 21 31 00 | 21:45:06 | 1 44 W | | | |
| 534 | comp | | | 21:45:42 | | | | " | " |
| 535 | comp | | | 21:48:40 | | | | FeAr Clear | 90s |
| 536 | HD 36960 | 05 30 9.8 | -6 04 07 | 21 51:16 | 22 24 42 | 2 22 W | | | |
| 537 | Comp | | | 22 25 20 | | | | FeAr Clear | 90s |
| 538 | HD 36959 | 05 30 7.7 | -6 04 33 | 22 27 40 | 23 00 09 | 2 59 W | | | |
| 539 | comp | | | 23:01:20 | | | | FeAr Clear | 90s |
| 540 | comp | | | 23 03 39 | | | | " | " |
| 541 | HD 42690 | 06 06 59 | -6 31 39 | 23 06 00 | 23 30:00 | 2 51 W | | | |
| 542 | Comp | | | 23:30:55 | | | | " | " |
| 543 | comp | | | 23:33:43 | | | | " | " |
| 544 | HD 42545 | 06 06 17 | 16 09 11 | 23:36:13 | 23:49 45 | 3 11 W | | | |

Spectr. Temp.

Focus 71

Spectr. Temp.

Exp. Mtr. Seeing

30000

30000

30000

30000

2000

305 pg 4

Date 1991 Feb 17/18 Observers F.S. - T.K.

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|----------------|----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC00545 | FFS comp | | | 23:50:50 | | | | | |
| 546 | comp | | | 23:53:45 | | | | | |
| 547 | HD 74280 | 08 37 59 | 03 45 28 | 23:56:00 | 00:04:57 | | | | |
| 548 | comp | | | 00:05:54 | | | | | |
| 549 | comp | | | 00:09:13 | | | | | |
| 550 | HD 83754 | 09 35 31 | -13 52 43 | 00:12:32 | 00:35:00 | | | | |
| 551 | comp | | | 00:35:47 | | | | | |
| 552 | comp | | | 00:39:40 | | | | | |
| 553 | HD 87901 ^{α 60} | 10 03 03 | +12 27 | 00:42:07 | 00 42 50 | | | | |
| 554 | comp | | | 00:44:15 | overwritten (lost) | | | FeA 90s | |
| 554 | comp | | | 00:53:35 | | | | n 90s | |
| Fm00304 | seeing + est HD 90861 | 10 24 17 | 29 05 35 | 00 53 | | 00 03E (4xInt) | | "N" mode | |
| CC00555 | HD 90861 | n | n | 00 56:20 | 01:35:00 | W | | | |
| 556 | comp | | | 01:35:35 | | | | | |
| 557 | comp | | | 01:4:42 | | | | | |
| 558 | HD 120315 ^{γ 4ma} | 13 43 04 | +44 48 45 | 01:45:10 | 01 46 00 | 2 28E | | | |

Spectr. Temp.

Focus

Spectr. Temp.

Exp. Mtr. Seeing

35000

20000

20000 peak

frames

100

Spectr. Temp. Dome Temp./Hum. Transparency Conditions *Hazy → thin cloud*
 Focus 306
 Spectr. Temp. Dome Temp./Hum. *-8.6°C 57.5%* 510 0 40 1024 2 1 CCD FMT

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------------|-------------|---------------|--------------|------------------|------------------|-------------|------------------|------|----------------|-------------------------------|---------|
| | | | | <i>Blue Coll</i> | | | | | | | |
| | | | | <i>CASS CCD</i> | <i>1800/56.5</i> | <i>250μ</i> | <i>6600A</i> | | | | |
| <i>30000</i> | | <i>4.30</i> | <i>B3I</i> | | | | | | | | |
| <i>20000</i> | | <i>5.06</i> | <i>B5I</i> | | | | | | | | |
| <i>30000</i> | <i>poor</i> | <i>0</i> | <i>B7II</i> | | | | | | | | |
| <i>4 frames</i> | | <i>V= 6.9</i> | <i>K2III</i> | <i>(Dome SW)</i> | | <i>250μ</i> | <i>5/11+Hood</i> | | <i>std vel</i> | <i>NE wind ahead of storm</i> | |
| | | <i>6.9</i> | <i>K2II</i> | <i>CASS CCD</i> | <i>1800/</i> | <i>250μ</i> | <i>6600A</i> | | <i>std vel</i> | | |
| <i>30000</i> | | | | | | | | | | | |

Comparison Exp.
90s
9s
4k

307 p9 45

Emulsion Batches:

Date 1991 Feb 17/18..... Observers Fds - Tn.....

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|-----------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| 559 | comp | | | 01:47:55 | | | | Fe/Ar clear | 90s |
| 560 | comp | | | 01:51:25 | | | | | 90s |
| 561 | HD 147394 7mm | 16 16 44 | +46 33 05 | 01:55:15 | 02:01:20 | 4 46 E | | | |
| 562 | comp | | | 02:02:18 | | | | Fe/Ar clear | 90s |
| 563 | comp | | | 02:05:22 | | | | " | " |
| 564 | HD 160762 6mm | 17 36 38 | +46 04 00 | 02:09:35 | 02 34 36 | 5 33 E | | | |
| 565 | comp | | | 02:36:13 | | | | Fe/Ar clear | 90s |
| 566 | comp | | | 02:40:30 | | | | " | 90s |
| 567 | HD 163506 8mm | 17 51 23 | +26 04 | 02:46:51 | 02:58:07 | 5 20 E | | | |
| 568 | HD 163506 HD 163506 | " | " | 02:59:35 | 03:13:27 | 5 05 E | | | 90s |
| 569 | comp | | | 03:13:52 | | | | Fe/Ar | 90s |
| 570 | comp | | | 03:20:13 | | | | " | 90 |
| 571 | HD 166182 ^{103mm} | 18 04 29 | 26 47 56 | 03:23:10 | 03 39:32 | 04 56 E | | | |
| 572 | comp | | | 03:40:51 | | | | " | 90 |
| 573 | comp | | | 03:45:15 | | | | " | 90 |
| 574 | HD 120315 7mm | 13 43 04 | 49 48 45 | 03:47:49 | 03:48:32 | | | | |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr. Seeing

311

Pg 7

Emulsion Batches:

Date 1991 Feb 7/18..... Observers ... Fds. J. Tu.....

| 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. |
| CC00608 | BIAS(x4) | | | | | | | | |
| 609 | BIAS(x4) | | | | | | | | |
| 610 | BIAS(x4) | | | | | | | | |
| 611 | Comp | | | | | | | FeA | 90s |
| 612 | HD 120315 | 13 4304 | +49 4845 | 04 57 45 | 05 02 50 | 00 49 W | | | |
| 613 | Comp | | | | | | | FeA Clear | 96s |
| | | | | | | | | | |
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Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

80

313

Date 1.9.91..Feb.20/21. Observers Fds... T.Y.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC00614 | BIAS (4) | | | | | | | | |
| 615 | Fe-Ar | | | | | | | FeAr clear | 50s |
| 616 | HD 35149 | 05 17 35 | 03 26 54 | 21 00 05 | 21 40 05 | 2 01 W | | | |
| 617 | Fe-Ar | | | 21 42 50 | | | | FeAr clear | 50s |
| 618 | BIAS(4) | | | | | | | | |
| 619-638 | 20 Flats @ | 8sec each | | | | 02 05 W | +3° 38' | TUNG A=1/2 | |
| 639 | BIAS (4) | | | 22 05 00 | | | | | |
| | | | | | | | | | |
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Spectr. Temp.

Focus 7:10..

Spectr. Temp.

Exp. Mtr. Seeing

315

Thurs - Fri pg #1

Date 1991..Feb 21/22.. Observers ..H.K.-Fds.-Pdc.-Tn.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|------------|--------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| SS0001.fTs | H034029 | 05 09 18 | +45 54 00 | 19 06 | 19 09 | 00 19E | 2000x | seg | |
| 2. | | | | 19 10 30 | 19 13 | 00 15E | 4000x | " | |
| 3. | | | | 19 18 10 | 19 30 | 00 02 W | 4000x | " | |
| BIAS1.PIF | BIAS | | | 20 08 30 | 20 03 | | 500x | seg | |
| BIAS2.PIF | | | | | | | " | " | |
| BIAS3.PIF | | | | | | | " | " | |
| Fm 305.Tn | Capella New Camera | | | 20 29 | | 01 W | 4 frames | "N" made | |
| Fm 306.Tn | " | " | " | 20 33 | | 01 05W | 5 frames. | | |
| SS0004.fTs | Comp | | | | 20 40 | | | FeNe 90s | |
| CC00640 | | | | | | | | | |
| 640 | com BIAS(4) | | | 20:54:00 | | | | | |
| 641 | BIAS(4) | | | 20:55:00 | | | | | |
| CC00642 | Fe-Ar | | | 21:25:54 | | | | | |
| 643 | H10 35149 | 05 17 35 | 03 26 54 | 21:30:18 | 21:44:48 | 2 11W | | | |
| 644 | Fe-Ar | | | 21 45:48 | | | | | |
| 645 | H10 35149 | 05 17 35 | 03 26 54 | 21 48 50 | 22 03 30 | 2 30 W | | | |

Spectr. Temp. ...

Focus....6.8

Spectr. Temp. ...

Exp. Mtr. Seeing

New Cam

New Cam

New Cam

in etd

1st one for

40

Spectr. Temp. Dome Temp./Hum. 86.1% / 2.5 Transparency Conditions ... Cloud by 2230 ...

Focus
 Spectr. Temp. Dome Temp./Hum. 87% / 2.5°C → best focus 6.90 319

anson
Exp.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|-----|---|--------------|------|----------|------|---------|-------------------------------------|---------|
| | | | | CCD CASS Blue | 1800/565 | 250μ | 6600Å | | | | |
| 30 000 | | 5.0 | BIZ | | | | | | | CCD window frequently fogged up. | |
| 24 500 | | | | | | | | | | | |
| | | | | All CC-FTS files to Perseus and WORM TO HERE. | | | | | | | |
| | | | | All speckle frames to Perseus/cass | | | | | | | |

744
A=1/2

319

Date 1991 Feb 23/24 Observers Fds/Pdr

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-------------|------------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----------------|
| CC00664 | Bias (4) | | | 18 55 | | | | | |
| 665 | Bias (4) | | | | | | | | |
| 666 | Fe Ar | | | 18 57 | | | | Clear | 90 ^s |
| 667 | HD 35149 | 05 17 35 | 03 26 54 | 19 02 39 | 19 16 49 | 0 10 E | | | |
| 668 | Fe Ar | | | 19 17 59 | | | | Clear | 90 ^s |
| 669 | Fe-Ar | | | 19 20 55 | | | | Clear | 90 ^s |
| 670 | HD 35468 | 05 19 46 | 06 15 33 | 19 23 40 | 19 25 10 | 0 03 E | | | |
| 671 | Fe Ar | | | 19 25 14 | | | | Clear | 90 |
| 672 | HD 35149 Fe Ar | | | 19 29 30 | | | | Clear | 90 |
| 673 | HD 35149 | 05 17 35 | 03 26 54 | 19 32 10 | 19 49 58 | | | | |
| 674 | Fe Ar | | | 19 51 27 | | | | | |
| 675 | Bias | | | | | | | | |
| 676 | Bias | | | | | | | | |
| CC00677-686 | Flats | | | | | 00 ^h | -35° | A=1/2 | 14 ^s |
| CCF00076 | Comp pass | | | 21 16 | | 00 ^h | +30° | | 90 ^s |
| 77 | Stellar pass | | | | | " | " | | |

Spectr. Temp. ...

Focus F

Spectr. Temp. ...

Exp. Mtr. Seeing

600

600

600

T=
FOCUS

321

Date 1991 Feb 26/27 Observers [B] [W] / Par

Emulsion Batches:

.....

| 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. |
| 00687 | Bias (4) | | | | | | | | 0 ^s |
| 688 | Dark | | | | | | | Clear | 1200 |
| 689 | Bias (4) | | | | | | | | 0 ^s |
| 690 | Dark | | | | | | | Clear | 1200 |
| 691 | Comp | | | 20 23 | | | | Fe Ar clear | 120 ^s |
| 692 | HD 37468 | 05 37.42 | -2 39 | 20 24 40 | 20 48 15 | ~1 20 W | | | |
| 693 | Comp — spectrum! | | | 20 49 | | | | Fe Ar clear | 120 ^s |
| 694 | Comp | | | 21 17 | | | | Fe Ar clear | 120 ^s |
| 695 | HD 36485 | 05 26 54 | -00 22 | 21 24 05 | 22 04 05 | 2 41 W | | | |
| 696 | Comp | | | | | | | Fe Ar | 120 |
| 697 | HD 36485 | | | 22 46 00 | 23 16 00 | 3 53 W | | | |
| 698 | Comp | | | | | | | Fe Ar | 120 |
| 699-706 | Flat | | | | | 2 40 W | -00 22 | Tung A=1/16 | 10 ^s |
| 707-714 | Flat | | | | | " " | " " | " " | 20 ^s |
| 715-722 | Flat | | | | | " " | " " | Tung A=1/8 | 16 ^s |

Spectr. Temp. ...

Focus 6.9

Spectr. Temp. ...

Exp. Mtr. Seeing

2500

5650

4430

Long
Used

Spectr. Temp. Dome Temp./Hum. 59.0% / -7.4°C Transparency Conditions Partly cloudy

Focus 6.9 30 cgain 322

Spectr. Temp. Dome Temp./Hum. Ccdfmt 500 0 24 1024 4 1

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|----------------|--|--------------|------|--|------|---------|--|---------|
| | | | | CCD Cass | 1800/56.5 | 250μ | 6620Å | | | G = 6055 | |
| | | | | Second longest slit used for spectrum | | | | | | | |
| 92500 | | B = 3.51 | 09.5 \bar{V} | | | | MID λ = 3200 ADU MAX λ = 3200 | | | Through drubs | 3200ADU |
| 5650 | | B = 6.7 | B2 \bar{V} p | | | | MID λ = 1260 ADU MAX λ = 1260 ADU | | | Focus: 7.08 6.90 Tried to adjust focus unsuccessfully back to same focus. original | |
| 4430 | | | | | | | MID λ = 980 ADU MAX λ = 980 ADU | | | Restarted program CCD2A hung up when doing \leftrightarrow alist !! | |
| | | | | Longest slit used for flats | | | MAX λ = 1200 ADU MAX λ = 2500 ADU MAX λ = 6700 ADU | | | | |

Spectr. Temp. Dome Temp./Hum. $68\%/-9.2$ Transparency Conditions *Hazy*
 Focus 7.05 324
 Spectr. Temp. Dome Temp./Hum.

Expansion
of Exp.
120
20
40

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|---------|---|--------------|-----------|----------|------|---------|-------------------------|---------|
| | | | | CCD Cass | 1800/42.2 | 250 μ | 4398A | | | G-4482 | |
| 32900 | | V 5.3 | A0shell | | | | | | | Spect refocused to 7.05 | |
| | | | | FLATS MID $\lambda = 12500$ ADU | | | | | | | |
| | | | | All cc files to CC00735.FTS copied to WORM & Persens | | | | | | | |

325

Wed-Thurs

Date 1991 Feb 27/28... Observers Pdr...Tn [Bln].....

Emulsion Batches:

.....

| 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 |
|---------------|-------------------------|-----------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------------|
| CC00736 | Comp | | | | | | | FeAr CLEAR | 120s |
| 737 | HD 36485 | 05 2654 | -00 22 00 | 18 50 10 | 19 17 00 | 00 6 E | | FeAr CLEAR | 120s |
| 738 | Comp | | | | | | | FeAr CLEAR | 120s |
| 739 | Comp | | | 19 25 10 | 19 25 10 | | | " | 120s |
| 740 | HD 37468 | 05 3344 | -02 39 30 | 19 25 10 | 20 07 40 | 00 41 W | | | |
| 741 | Comp | | | | | | | FeAr CLEAR | 120s |
| 742-749 | FLATS | | | 20 20 | | 0 0 | -2 30 | TUNG A=1/4 | 8 sec |
| 750 | Bias (4) (average of 4) | | | | | | | | |
| 751 | DARK 20m | | | | | | | | |
| 752 | BIAS (4) | | | | | | | | |
| 753 | DARK (20m) | | | | | | | | |
| CCF000 78 ft. | Comp posn | Focus set @ 6.9 | | 23 38 | | 0 0 | -23° | FeAr CLEAR | 90s +30 |
| CCF 79 | stellar posn | 6.9 | | | | 0 0 | -23° | " | 90s +30 |

Spectr. Temp.

Focus... 6.9...

Spectr. Temp.

Mtr. Seeing

200 Fine

100 Fine

FeAr

327

Date 1991 Feb 27/28 Observers Tu/Pdr

Emulsion Batches:

.....

| 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. |
|--------------------|---------------|---|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------------------|
| CC00754 | Comp | | | | | | | FeAr clear | 120 ^s |
| 755 | HD 112028 | 12 48 23 | +83 57 | 02 39 30 | 03 01 42 | 0 24 W | | | |
| 756 | Comp | | | | | | | FeAr clear | 120 ^s |
| 757 | Comp | | | | | | | FeAr clear | 120 ^s |
| 758 | HD 80360 | 09 52 51 | +12 55 | 03 15 45 | | W | | | |
| CC00754 } 764 } | Flats | [Note source was TUNG, A = 1/2 T ₁] | | | | 00 30 W | +83° | | 35 ^s |
| CC00765 | Bias (4) | | | | | | | | |
| 766 | Bias (4) | | | | | | | | |
| | 1991 Feb 28/1 | | | | | | | | |
| | Pdr/Tu | | | | | | | | |
| CC00080 | Comp posn | | | ~00 15 | | 00 h | +34° | FeAr clear | 50 ^s |
| 81 | Stellar posn | | | | | " | " | " | " |
| 82 | Comp posn | | | | | " | " | " | 120 ^s |
| 83 | Stellar posn | | | | | " | " | " | " |

Spectr. Temp.
 Focus.... 6.9
 Spectr. Temp.

Exp. Mtr. Seeing

CC00 3050

Focus = 6

H11 +

Spectr. Temp. Dome Temp./Hum. $\pm 6.7^{\circ}\text{C}$ 73% Transparency Conditions . Hazy..... 328...

Focus 6.9.....

Spectr. Temp. Dome Temp./Hum. -7.3°C 74%

30 CGAIN . CCDT = -101.8°C
500 0 24 1024 41 CCD FMT

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|--|--------|-----------|-----------|-----------------------|---------------------|--------------------------------|----------|------|----------------------------|---|--------------|
| 120 ^S | | | | CASS CCD 1800 | G 4482 1800/42.2 | 250 μ * | 4398A | | | * Slit Length 2nd Longest | |
| 33000 | 5050 | 5.28 | 140 shell | | | | | | Shell - Bln | SE star of pair. Also sl brighter of pair | A APPROX MAX |
| 120 ^S | | | | | | | | | | (Too cloudy - no go) | |
| 120 ^S | | | | | | | | | | Near Full moon. + cloud | |
| 355 | | | | CCO CASS Blue Coll | 1800/42.2 | 250 μ (Slit Length max) | 4398A | | | | |
| Focus = 6.9 | | | | | | | | | | | |
| Dome Temp/Hum $-2.0 / 88.5\%$ | | | | | | | | | | | |
| | | | | Cass CCD | G=4482 1800/42.2 | 250 μ * | 4398A | | 380 0 24 1024 12 1 CCD FMT | * Third longest slit | |
| | | | | | " " | " " | " " | | | | |
| | | | | | G=6055 1800/56.5 | | 6620A | | | | |
| All focus tests to date on Perseus/CCD/CASS/TEST \leq WORKING to "Focus" | | | | | | | | | | | |

220

Fri - Sat

Date 1991 MAR 1/2 Observers Tn /

Emulsion Batches:

.....

| 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 |
|------------------------------|---------------|---------------|---------------------|---|-----------------------|-------------------|-------------|---------------------------|------|
| ccf00084.Fts | Compos'n | | | | Diffuser in - | 0 0 | 0° | FeA clear | 120s |
| ccf00085.Fts | Stellar pos'n | | | 20 00 | | " | " | " | " |
| MAR 2/3 Dome T = <u>+8°C</u> | | | | Tn set same as previous night, ie Focus = 6.7 | | | | | |
| ccf00086.Fts | Compos'n | | | 18 45 | | 0 0 | -22° | FeA clear | 130s |
| ccf00087.Fts | Stellar pos'n | | | | | 0 0 | " | | 130s |
| MAR 3/4 Dome T = -2.0°C | | | | Tn set same as previous night, Cloudy again | | | | | |
| ccf00088.Fts | Compos'n | | | 18 50 | | 0 0 | -22° | FeA clear | 130 |
| ccf00089.Fts | stellar pos'n | | | | | 0 0 | " | " | 130 |

Spectr. Temp. 7.3
 Focus 6.7
 Spectr. Temp.

Mr. Seeing

Faint 3.5

Note

Cop. 500s

2.5K

= 73%

+ 4000K

redup = 10x

Spectr. Temp. $+3.9^{\circ}\text{C}$Dome Temp./Hum. $+3.9^{\circ}\text{C}$ 84%

Transparency Conditions... Cloudy... mostly.....

Focus..... 6.7.....

Spectr. Temp.

Dome Temp./Hum.

CGAIN = 30
CCD T = -125°C

335

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|------|-----------------------|--------------------|----------------|-------------------|------|---------|---|---------|
| 1203 | 3.0 | 0.24 | 1024 | CASS CCD Blue Cell | G=6065 1800/565 | 250 μ * | 6620 \AA | | | 380 0 24 1024 121 CCD FMT * 3rd largest slit | |
| | | | | | | | | | | Note Header says Comp 6511 for "OBSERVER". <u>disregard</u> "OBJECT" correct. | |
| 1305 | | | | CASS CCD Blue Cell | G=6035 1800/563 | 250 μ * | 6590 \AA | | | CGAIN = 30 CCD = -110°C 380 0 24 1024 121 CCD FMT | |
| | | | | | | | | | | Signal seems weak } MAYBE more moisture on window? It is humid at 95% wet to some degree. | |
| 130 | | | | CASS CCD Blue Cell | G=6035 1800/563 | 950 μ * | 6590 \AA | | | CCD Temp = -87°C CGAIN = 30 380 0 24 1024 121 CCD FMT | |
| | | | | | | | | | | Signal to 4000 \AA strongest) Signed up ~ 10x tonight. | |
| | | | | | | | | | | Focus tests copied to "focus" on work } up to date and to CCD Tests on Perseus } TG | |

33) #1

Thurs - Fri

Date 1991 MAR 7/8

Observers ... Pdr. - Tn. (Kik service obs)

Emulsion Batches:

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.....
.....

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-------------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce0 2390 | fts Comp | | | | | | | ThA | 10s |
| 2391 | HD 34029 | 05 09 18 | +45 54 | 20 16 16 | 20 19 10 | 01 46 W | | | |
| 2392 | Comp | | | | | | | ThA | 10s |
| 2393 | Comp | | | | | | | ThA | 10s |
| 2394 | HD 47105 | 06 31 54 | +16 29 | 20 42 13 | 21 06 25 | 01 12 W | | | |
| 2395 | comp | | | | | | | | 10s |
| 2396 | Comp | | | | | | | | 10s |
| 2397 | HD 62509 | 07 39 12 | +28 16 | 21 18 00 | 21 32 15 | 00 30 W | | | |
| 2398 | Comp | | | | | | | | 10s |
| 2399 | Comp | | | | | | | | 10s |
| 2400 | HD 74874 | 08 41 30 | +06 47 | 21 44 50 | 22 27 00 | 00 24 W | | | |
| 2401 | Comp | | | | | | | | 10s |
| 2402 | Comp | | | | | | | | 10s |
| 2403 | HD 61421 | 07 34 04 | +5 29 | 22 58 00 | 23 04 55 | 02 10 W | | | |
| 2404 | Comp | | | | | | | | 10s |

Spectr. Temp. ...

Focus.....

Spectr. Temp. ...

Exp. Mtr.

Seeing

5100

9150

3800

3100

100

Spectr. Temp. Dome Temp./Hum. $+5.9^{\circ}\text{C}$ 52% Transparency Conditions ... *MOSTLY CLEAR* 337

Focus 0.0 256 1024 4 $\frac{1}{7}$ Note Slit Position changed from 0.223 \rightarrow 0.200

Spectr. Temp. β Dome Temp./Hum. CGAIN = 30 CCD Temp $\approx -101^{\circ}\text{C}$

10s
10s
10s
10s
10s
10s
10s
10s
10s

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. SLIT | Program | Remarks | Quality |
|------------------|---------------|-----------|---------------------------|--|--------------|------------------|----------|--------------------------------|--------------------|---|---------|
| | | | | CCD Eckelle | 18.95 | .276 70 μ | | H = 4.02 μ = 0.225 on bkg. | | | |
| 5100 | \approx | +0.89 | G8III ^o + F | | | | | | X Grating = 0.4510 | [Should be to .4555 to fully get H β] @ 4490 \AA AVG SUM ADU \approx 7200 ADU | |
| 9,150 | $\approx 2''$ | 1.09 | A0IV | (2" seeing or \approx 1/2 400 μ slit height) | | | | | Asm-Sp-KK | @ 4490 \AA AVG SUM ADU \approx 1800 ADU | |
| 13,800 | $\approx 2''$ | 2.15 | K0III | | | | | | Std | @ 4490 \AA Sum of 7 best pixel columns AVG SUM ADU \approx 20,400 ADU | |
| 3100 | $< 2''$ | 4 | G0III + FOV | | | | | | Asm Sp-KK | AVG SUM of 7 cols = 7100 ADU CCD T = -100.8°C | |
| \approx 14,000 | $\frac{1}{2}$ | 0.74 | F5III | | | | | | Std | @ 4490 \AA AVG SUM of 7 cols \approx 20,000 ADU | |

357 #2

Thurs-Fri

Date 1.9.91 MAR 7/8 Observers T. - Pdr

Emulsion Batches:

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.....

| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-------------------|---------------|---------------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| ce02405 | Comp | | | | | | | ThAR | 10s |
| 2406 | HD 99028 | 11 18.7 | +11 05 | 23 14 40 | 23 47 22 | 0 55 E | | | |
| 2407 | Comp | | | | | | | ThAR | 10s |
| 2408 | HD 99028 | 11 18.7 | +11 05 | 23 46 15 | 00 17 15 | 00 28 W | | | |
| 2409 | Comp | | | | | | | ThAR | 10s |
| 2410 | Comp | | | 2 | | | | n | 10s |
| 2411 | HD 137909 | 15 23.7 | +29 27 | 00 26 05 | 00 48 40 | 03 55 E | | | |
| 2412 | Comp | | | | | | | | 10s |
| 2413 | Bias (4) | average of 4 bias | | | | | | | |
| 2414 ce02416 | FLATS (3) | as CCD Temp rising | | | | 03 20 E | +29 05 | | 60s |
| ce02417 → 2422 | FLATS | (after Topup & Temp stab) | | 01 42 | | 01 0 W | +16° | | 30s |
| ce02 | | | | | | | | | |
| cef0062 | Hartmann - IN | | | | | | | | 10s |
| 63 | - out | | | | | | | | 10s |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr. Seeing

2"

80

2"

300

2"

120

3"

AVG

AVG

Spectr. Temp. Dome Temp./Hum. -7.2°C 55% Transparency Conditions ... FINE 334
 Cloud By 00 45

Focus

Spectr. Temp. Dome Temp./Hum. -7.8°C 60%

Slit Pos'n @ start = 0.223 on micrometer / set to 0.200

| Exp. Mtr. | Seeing | Pig. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|------|-------------|--------------|-------------------|------------|-------------------|--------------------------------|--|---------|
| | 2" | | | CCD Echelle | 18.95 | 0.276 70 μ | 4471-4481A | Xgrating = 0.4510 | | H γ Just in in Top ORDER | |
| 1180 | 2" | 4.3A | F2IV | | | | | | Asm-Sp KAC | AVG SUM ADU = 4000 ADU @ 4490A | |
| 1310 | 2" | 4.3A | F2IV | | | | | | | AVG SUM ADU = 3800 ADU @ 4490A | |
| | | | | | | | | | | Note CCD Temp starting to rise | |
| 620 | 3" | 3.93 | F0p | | | | | | | AVG SUM ADU = 3800 ADU @ 4490A CCD Temp = -90.5°C @ 00 25 EST CCD T = -86.3°C @ 00 45 EST | |
| | | | | | | | | | | -86.6°C @ 01 EST | |
| | | | | | | 0.276 70 μ | | | Slit H = 600 μ , 0.205 set | -86.5°C @ 01:15 | |
| | | | | | | x | | | H = 600 μ | Top up finished @ 01 30 | |
| | | | | | | 70 μ | | | H = 600 μ | CCDT = -101.3°C | |
| | | | | | | | | | | AVG SUM of 7 columns \approx 30000 ADU | |
| | | | | | | | | | | AVG SUM of 7 cols \approx 37000 ADU | |
| | | | | | | | | | | H α fld to Perseus, | |
| | | | | | | | | | | -3.8°C | |
| | | | | | | | | | F = .230 | after adjusting in-plane -02 rotation of X-grating pixels! | |

33) p9th1 Fri - Sat

Date 1991. MAR 8/9... Observers P.d.r. - T.n.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|--------------------|-----------------|-----------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------|
| ce02423 | Comp | Lost | | | | | | ThA | |
| 2423 | HD47105 | 063154 | +16 29 | 19 2957 | 19 3718 | 00 13 E | | ThA | 10sec |
| 2424 | Comp | | | | | | | ThA | 10sec |
| 2425 | HD47105 | 063154 | +16 29 | 19 4005 | 19 4900 | 00 01 E | | | |
| 2426 | Comp | | | | | | | ThA | 10s |
| 2427 | Comp | | | | | | | ThA | 10s |
| 2428 | HD61421 | 073404 | +5 29 | 19 5600 | 19 5900 | 00 53 E | | | |
| 2429 | Comp | | | | | | | | 10s |
| 2430 | Comp | | | | | | | | 10s |
| 2431 | HD62509 | 073912 | +28 16 | 20 0540 | 20 1100 | 00 47 E | | | |
| 2432 | Comp | | | | | | | | 10s |
| 2433 | Comp | | | | | | | | 10s |
| 2434 | HD74874 | 084130 | +06 47 | 20 5827 | 21 2641 | 00 32 E | | | |
| 2435 | Comp | | | | | | | ThAr | 10s |
| 2436 | Comp | | | | | | | n | 10s |

Spectr. Temp. ...
 Focus 23
 Spectr. Temp. ...

Exp. Mtr. Seeing

2730 42"

200 42"

4500 45"

3700 42"

350 15"

Spectr. Temp. Dome Temp./Hum. -2.4 ... 55.7 Transparency Conditions .. *Fine* 336 ...

Focus 230

pg #1

CGAIN = 30

Spectr. Temp. Dome Temp./Hum. *600/mm* X Grating Set to 0.4560 * 5th ORDER FROM TOP

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Central Emulsion | P.H. Slit Height | Program | Remarks | Quality |
|---------------|---------|-----------|-----------------------|---------------------------------|------------------|-------------------|------------------|---------------------|-----------------------------|---|---------|
| | | | | <i>CCD Echelle 600/mm X</i> | 18.0 <i>97</i> | 70μ 1276 | <i>481A</i> | 400μ 0.225 | | <i>CCDT = -100.2°C</i> | |
| <i>9730</i> | $<2''$ | 1.9 | <i>A0IV</i> | | | | | | <i>Asm Sp-KK</i> | 2.14700 ADU AVG SUM @ $4.490A$ <i>MERIDIAN Observing - no Dome Turning</i> | |
| | | | | | | | | | | 19600 ADU AVG SUM of 7 cfs @ $4.490A$ | |
| <i>11,200</i> | $<2''$ | 1.9 | <i>A0IV</i> | | | | | | <i>Asm Sp-KK</i> | | |
| <i>214500</i> | $<2''$ | $0.7A$ | <i>F5IV</i> | | | | | | <i>Procyon Std</i> | <i>Should be 5.25 K actually Fe seems low.</i> $11,000$ ADU AVG SUM of 7 cfs | |
| <i>13,700</i> | $<2''$ | 2.15 | <i>G0III +FOV</i> | <i>K0IIIb</i> | | | | | <i>Beta Gem Std Vel</i> | 16000 ADU | |
| <i>5350</i> | $1.5''$ | 4 | <i>G0III +FOV</i> | | | | | | <i>Asm Sp-KK</i> | | |

331

pg #2

Date 1991 MAR 8/9... Observers Pdr. Tr.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|--------|
| ce02437 | HD 34029 | 05 09.18 | +45 54 | 21 39 00 | 21 42 10 | 3 13 W | | | |
| 2438 | Comp | | | | | | | Th Ar | 10 sec |
| 2439 | Comp | | | | | | | | 10 sec |
| 2440 | HD 95689 | 10 57.36 | +62 17 | 21 51 20 | 22 07 00 | 02 09 E | | | |
| 2441 | Comp | | | | | | | | 10 sec |
| 2442 | Comp | | | | | | | | 10 sec |
| 2443 | HD 99028 | 11 18.7 | +11 05 | 22 36 10 | 23 16 10 | 01 19 E | | | |
| 2444 | Comp | | | | | | | Th Ar | 10s |
| 2445 | Comp | | | | | | | ? | 10s |
| 2446 | HD 121370 | 13 49.9 | +18 54 | 23 24 00 | 23 53 00 | 03 14 E | | | |
| 2447 | Comp | | | | | | | Th Ar | 10s |
| 2448 | Comp | | | | | | | ? | 10s |
| 2449 | HD 137909 | 15 23.7 | +29 27 | 23 59 40 | 00 34 20 | 04 05 E | | | |
| 2450 | Comp | | | | | | | Th Ar | 10s |
| ce02451 | Flats | | | 00 46 | | 02 00 E | +29 06 | TUNG | 20s |
| → 2455 | | | | | | | | | |
| 2456 | Bias (4) | | | 00 54 | | | | | |

Spectr. Temp. ...

Focus 23

Spectr. Temp. ...

Exp. Mtr. Seeing

500

300 15"

800 42"

100 42"

800 2"

Spectr. Temp. Dome Temp./Hum. ... -33°C 57.8% Transparency Conditions ... Sl... Hazy ... 338...

Focus ... 230 ...

p4#2
Dome Temp./Hum. ... 4.2 ... 60%

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion Control λ | S/IT P.H. Height | Program | Remarks | Quality |
|-----------|--------|-----------|-------------------|----------------------------|--------------|-----------------|-------------------------------|------------------------|-----------------|--|---------|
| 14,500 | | 1.89 | G8MT +F | CCD Fokko 5000Å grating | 18.07 | 70 μ | 4481 | 400 μ .225 | x grating .4560 | wt Continuous @ 4490Å AVG SUM of 9 cals 27000 ADU | |
| 19,300 | 1.5" | 1.79 | V comb K0 IIIa | | | | | | | @ 4483 Å AVG SUM of 9 cals 19900 ADU | |
| 4800 | <2" | 4.3A | F2 IV | | | | | | | AVG SUM of 10 cals 10600 ADU | |
| 10,100 | <2" | 3.27 | G0 | | | | | | | near R 4490Å AVG SUM of 10 cals 14,500 ADU | |
| 7600 | 2" | 3.93 | F0p | | | | | | Asm Sp. KK | AVG SUM of 10 cals 8300 ADU | |
| | | | | | | 7 μ .276 | 4481 Å | 800 μ .185 | | AVG SUM of 10 cals 57,600 ADU CCO Temp = -102°C | |

33^a

#3

Emulsion Batches:

Date 1991. MAR. 8/9... Observers Tu... Pdr.....

| 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 |
|-----------------|-----------|---------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-----|
| ce02457 | Flats | | | 01 20 05 | | | | | |
| 2458 | HD 137909 | 15 23.7 | +29 27 | 01 20 05 | 01 44 05 | 2 55 E | | 1c1v | |
| 2459 | Comp | | | | | | | 2c1v | |
| 2460 | HD 137909 | | | 01 48 05 | 02 07 00 | 2 32 E | | 3c1v | |
| 2461 | Comp | | | | | | | 4c1v | |
| ce2462 -2466 | Flats | | (while on HD137909) | 02 15 | | 2 20 E | | | |
| 2467 | Comp | | | 02 27 | | | | | 10s |
| ✓ 2468 | HD 137909 | | | 02 28 20 | 02 40 40 | 1 58 E | | | |
| 2469 | HD 137909 | | | 02 47 30 | 02 59 33 | 1 40 E | | | |
| 2470 | Comp | | | | | | | ThAR | 10s |
| 2471 2475 | Flats | | (while on HD137909) | | | 1 30 E | +29 06 | TUNG | |
| 2476 | Comp | | | | | | | | 5s |
| 2477 | HD 137909 | | | 03 47 50 | 04 28 34 | 0 10 E | | | |
| 2478 | Comp | | | | | | | ThAR | 5s |
| 2479 | HD 137909 | | | 04 32 50 | 04 43 29 | 0 05 W | | | |

Spectr. Temp.

Dome Temp./Hum. ... -43° ... 60%

Transparency Conditions ... Hazy ... part cloudy ...

Focus ... 2.30 ...

#3

340

Spectr. Temp.

Dome Temp./Hum.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Central Emulsion | P.H. Height | Program | Remarks | Quality |
|-----------|--------|-----------|-----|----------------|--------------|------------------|------------------------|-------------------|------------------|--|--------------------------------------|
| | | | | CCD Echelle | 18.70 | 70 μ .276 | * 5185 \AA | 400 μ | xgrating = .3963 | 4 4th complete ORDER from Top | |
| 3500 | 1" | 3.93 | Fop | | | | | | | 20,700 SUM AVG ADU @ 5185 \AA | |
| 3600 | 1" | 3.93 | Fop | | | | | | | 20,300 SUM AVG ADU | |
| | | | | | | 70 μ | 5185 \AA | 600 μ .205 | | of 10 columns 86,500 SUM AVG ADU | |
| | | | | | 18.70 | 70 μ | 5890 \AA | 400 μ .225 | xgrating = .3407 | 4th complete ORDER from Top | |
| 2000 | 1" | 3.93 | Fop | | | | | | | of 10 columns 19,400 SUM AVG ADU | |
| 2000 | | | | | | | | | | 16,800 SUM AVG ADU | |
| | | | | | | | 5890 \AA | 600 μ .205 | | AVG 116K ADU SUM of 10 columns | |
| | | | | | *16.70 | 70 μ | 6700 \AA | 600 μ .205 | xgrating = .2812 | CCD T = -102.0° * couldn't find lines on other side of blaze | [Echelle Tilt should have been 19.4] |
| 740 | 1/3" | 3.93 | Fop | | | | | | | 13,200 SUM AVG ADU @ 6700 \AA | Thick cloud at beginning |
| | 2" | 3.93 | Fop | | | | | 600 μ .205 | | 13,200 SUM AVG ADU Thin cloud | |

Spectr. Temp. Dome Temp./Hum. -55°C 64% Transparency Conditions .. Part. Cloudy..... 342.....

Focus 12.30.....

Spectr. Temp. Dome Temp./Hum.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-----------|-----|--------------|--------------|------|----------|--------------|---------|---|---------|
| 582 | | | | CCD Edele | 18.70 | 70u | 6700A | 600u .205 | | CCD T = -102.0°C | |
| 1550 | | | | | | | | 800u .185 | | | |
| | | | | | | | | | | CCD T = -102.0 | |
| | | | | | | | | | | All To Perseus Edele now. | |
| | | | | | | | | | | All ce files to ce02486.fts copied to WORM (Mar 10) DIR 03 91-03 | |

313 pg#1

Sun - Mon

Date 1991 MAR 10/11... Observers Th... RK.....

Emulsion Batches:

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

| 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. |
|-----------|----------------------------|------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|---------|
| 2487 | B145 (4) average | | | 18 56 | | | | | |
| 2488 | Comp | | | | | | | Th AR | 20s |
| 2489 | Capella | 05 09 18 | +45 54 | 19 09 | 19 12 40 | 00 50 W | | | |
| 2490 | Capella | " | " | 19 14 30 | 19 15 45 | 00 54 W | | | |
| 2491 | Comp | | | | | | | Th AR | 20s |
| ce 02492 | FLATS (2) } FLATS (2) } | White on Capella | | | | | | Th AR | 1.6 sec |
| 2493 | | | | | | | | | |
| 2494 | | | | | | | | | |
| 2495 | | | | | | | | | |
| 2496 | Comp | | | | | | | | 10s |
| 2497 | Capella | 05 09 18 | +45 54 | 19 49 45 | 19 53 20 | 01 32 W | | | |
| 2498 | Comp | | | | | | | Th AR | 10s |
| 2499 | Comp | | | | | | | Th AR | 10s |
| ce 02500 | HD 47105 | 06 31 54 | +16 29 | 20 06 | 20 26 | 00 44 W | | | |
| 2501 | Comp | | | | | | | Th AR | 10s |
| 2502 | Comp | | | | | | | Th AR | 10 |
| 2503 | HD 61424 | 07 34 04 | +5 29 | 20 34 | 20 44 | 00 01 W | | | |
| 2504 | Comp | | | | | | | Th AR | 10 |

Spectr. Temp.

Focus 23

Spectr. Temp. ...

Exp. Mtr. Seeing

OK

4530

2000

700 3"

500 3"

Spectr. Temp. Dome Temp./Hum. -4°C 52% Transparency Conditions ... Fine 344

Focus 230

pg #1

CGAIN = 30

Spectr. Temp. Dome Temp./Hum.

CCDT $\rightarrow -101^{\circ}\text{C}$

SPLIT

| Exp. Mtr. | Seeing | Pig. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. Height | Program | Remarks | Quality |
|-----------|--------|-----------|-------------|----------------|--------------|----------|----------|-------------------|-------------|--|---------|
| | | | | CCD Echelle | 19.60 | 70 μ | 6707A | | 5000A, 600A | Xgrating = .2812 | |
| | | | | | | | | 400 μ .225 | | | |
| 10K | | 0.89 | G8III +F | | | | | | | S1 saturated in red | |
| 4,530 | | | | | | | | | | | |
| | | | | | | | | 600 μ .205 | | | |
| | | | | | 18.97 | 70 μ | 4481R | 600 μ .205 | Xgrating = | $\approx 12\text{K ADU MAX / pixel}$ Xgrating = .4560 | |
| | | | | | | | | 400 μ .225 | | | |
| 12000 | | 0.89 | G8III +F | | | | | | | 17K ADU summing of 7 cols | |
| | | | | | | | | | | | |
| 9700 | 3"4" | 1.9 | A01II | | | | | | | 2ci 18K ADU summing of 8 cols | |
| | | | | | | | | | | | |
| 14500 | 3" | 0.74 | F5IV | | | | | | Std Procyon | 3ci: 30K ADU summing of 9 cols 5ci | |

345 P9#2

Date 1991 MAR 10/11 Observers ... K.K. - J.n.

Emulsion Batches:

.....

| 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. |
|-----------------|----------------------------|-------------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|---------|
| ce02505 | Comp | | | | | | | Th-AR | 10s |
| 2506 | HD 62509 | 07 39.2 | +28 16 | 20 54 | 21 04.30 | 00 05 W | | | |
| 2507 | Comp | | | | | | | Th-AR | 10s |
| 2508 | Comp | | | | | | | " | 10s |
| 2509 | HD 74874 | 08 41.30 | +06 47 | 21 25.37 | 22 02 | 00 11 W | | | |
| 2510 | Comp | | | | | | | Th-AR | 10s |
| ce02511 2512 | FLATS (2) | White on HD 74874 | | | | | | TUNG | 30s |
| | SBIG Tracking Camera Tests | | | | | | | | |
| | HD 94601/02 | 10 50.12 | +25 17 | 23 36 | | | | | 20020 E |
| ce02513 | Comp for H COA BOR | | | | | | | Th-AR | 10s |
| ce02514 | HD 137909 | 15 23.7 | +29 27 | 00 03 | 00 33 | 04 00 E | | | |
| ce02515 | Comp | | | | | | | Th-AR | 10s |
| ce 2516 | BIAS (4) Avg | | | | 200 40 | | | | |

Spectr. Temp.
 Focus 23.
 Spectr. Temp.

Exp. Mtr. Seeing

1.500 3"

3.4"

950 45"

Note

Spectr. Temp. Dome Temp./Hum. ... -4.3°C ... 56% Transparency Conditions .S.I. hazy 346
 Focus 230 pg #2
 Spectr. Temp. Dome Temp./Hum. ... -5.6°C ... 42%

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|---|--------|------------------|----------------|------------|------------------|-----------|---------------------|--------------|-------------------|---|---------|
| | | | | CCD Edelle | 18.97 | 70μ | 4481 5th order V | 400μ | | | |
| 11,500 | 3" | 2.15 | KOUB | | | | | | | $\bar{Gci} = 14K$ ADU SUM AVG of 7 cols All to Perseus @ 21 EST to here. | |
| 16,000? | 3"-4" | 4 | GO III +FOV | | | | | | | $Gci = 18,400$ ADU SUM AVG of 7 cols | |
| | | | | | | | | 600μ | | $\approx 12,800$ MAX / pixel | |
| | | V.4.51 V.6.30 | A1 V A1 n | sep 6.8" | $\Delta m = 2.0$ | Tel Focus | S BIG CAM = 2244 J | | | [SAME focus as Ideal for Edelle] | |
| 2950 | 4.3" | 3.93 | FO | CCD Edelle | 18.97 | 70μ | 4481 A | 400μ 1225 | X grating still @ | $\approx 8K$ ADU SUM AVG of 7 1225 2.4560 | |
| <p><u>Note</u> I notice I now that Header Times are about 4.5 min behind Times noted here (Astroclock Times)</p> <p>All To Perseus \ echelle now / Up to date on worm too</p> | | | | | | | | | | | |

317 py 11 Mon - Tues

Date 1991 MAR 11/12... Observers T_n [Blh].....

Emulsion Batches:

.....

| 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. |
|----------------|-----------------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|-------------|
| CC00767.Ftsv | Comp | | | 19 20 | | | | FeAr CLEAR | 120s |
| 768 | HD 36485 | 05 26 54 | -0 22 | 19 23 20 | 19 43 00 | 01 10 W | | | |
| 769 | Comp | | | | | | | FeAr CLEAR | 120s |
| 770 | Comp | | | | | | | " | 120s |
| 771 | ADS 4241 D | 05 33.7 | -2 39 | 19 59 30 | 20 18 | 01 39 W | | | |
| 772 | HD 37468 Comp | " | " | 20 19 | 20 21 46 | 01 42 W | | FeAr CLEAR | 120s |
| 773 | Comp | | | | | | | FeAr CLEAR | 120s |
| 774 | Comp | | | | | | | " | " |
| 775 | HD 36485 | 05 26 54 | -00 22 | 20 35 30 | 20 59 | 2 26 W | | " | " |
| 776 | Comp | | | | | | | FeAr CLEAR | 120s |
| 777 | BIAS (4) Average | | | | | | | | |
| CC00778 782 | Flats (5) | | + 5 °Dec | | | 02 W | ND 0.6 | TUNG CLEAR | 10 sec |
| Fm 00307.1m | HD 82582 | 09 27 46 | +47 21 | | | 00 20 E | 4x int | "N" | 3x31 pixels |
| CC00783 | Flats Comp | | | | | | CLEAR | FeAr | 120s |
| 784 | HD 197433 | 20 38.6 | +75 14 | 22 35 30 | 22 51 03 | 10 47 E | | | |

Spectr. Temp.
 Focus 6.7
 Spectr. Temp.

Exp. Mtr. Seeing

9000 4"

18000

18000

2650 4"

2650

2711 6"

Spectr. Temp. Dome Temp./Hum. ^{-5.9} ^{50%} Transparency Conditions ^{Fine} ³⁴⁸

Focus ^{6.7} ^{p941} 500 0 24 1024 4 1 CCD FMT

Spectr. Temp. Dome Temp./Hum. ^{SLIT} 30 CGAIN

| Exp. Mir. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. Length | Program | Remarks | Quality |
|-----------------|--------|-----------|-------|----------------------|--------------|------|----------|--------------|----------------|---|---------|
| | | | | | G=6055 | | 6620A | * 0.9mm | * 2nd largest. | CCD T = -10.6°C | |
| 9000 | 4" | 6.70 | B2Vp | CCD CH5 Blue Coll | 1800/56.5 | 250μ | 6620A | | Ho-Rich | 6700 ADU sum avg of 8 cols | |
| | | | | | | | | | | CCD T = -10.7°C | |
| 25000 | | 6.4 | B2V | | | | | | V B Blu | guided @ left edge to avoid | |
| 18000 | | 3.51 | 09.5V | | | | | | α ORI AB | bright star. 12K (~ ORI AB) 12K ADU | |
| | | | | | | | | | | 12K | |
| | | | | | | | | | | 670 5600 sum avg of 8 cols | |
| 8600 | 4" | 6.70 | B2Vp | | | | | | He Rich | sci: 5600 sum avg ADU 8 cols | |
| 8600 | | | | | | | | | | | |
| | | | | | | | | | | Topup @ 222 EST off the Flats | |
| | | | | | | | 6620A | 1.2mm Length | | | |
| 31x31 pixels | poor | | | (Light NN Wind) | | 250μ | | 1.2mm | Dome NW | image above slit. | |
| 2711 | 6" | 7.3-7.7 | G3 | | | | | | | 6770-6730A | |

319 pg #2

Date MAR 11/12, 91 Observers T_n Hdy

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison | |
|-----------|-----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|----------------|-------|
| | | | | | | | | Type/Filter | Exp. |
| 785 | Comp | | | | | | | Fe Ar clear | |
| 786 | Flat | | | 23 15 | | | no filter | TUNG clear | 2 all |
| 787 | Comp | | | | | | | Fe Ar clear | 120s |
| 788 | HD 197433 | | | 23 3850 | 23 54 15 | 9 44E | | | 3400 |
| 789 | Comp | | | | | | | Fe Ar clear | 120s |
| 790 | Flat | | | | | | clear | TUNG | 3s |
| 791 | Comp | | | | | | | | |
| 792 | HD 197433 | | | 00 17 15 | 00 32 15 | 9 06 E | | | 3969 |
| 793 | Comp | | | | | | | Fe Ar clear | 120s |
| 794 | Flat | | | | | | clear | TUNG | - |
| 795 | Comp | | | | | | | Fe Ar clear | 90s |
| 796 | HD 197433 | | | 00 50 00 | 01 05 10 | 8 33 E | | | |
| 797 | Comp | | | | | | | Fe Ar clear | 90s |
| 798 | Flat | | | | | | | TUNG clear | 3 sec |
| 799 | Comp | | | | | | 1 clear | Fe Ar | 90s |

Spectr. Temp. ...

Focus

Spectr. Temp. ...

Exp. Mtr.

Seeing

3400 5"

3160

3310

1.5"

Spectr. Temp. Dome Temp./Hum. Transparency Conditions *Clear* 350

Focus

py #2
Dome Temp./Hum. ... *-8°C* ... *50%*

Spectr. Temp.

Using 1.2 mm Length Slit for All Exps

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emission λ | P.H. | Program | Remarks | Quality |
|-------------|-------------|------------------|-----------|------------------|--------------|----------------------------|------------------------------------|------------|---------------|--|---------|
| | | | | <i>CCD CLASS</i> | <i>1800/</i> | <i>250μ</i> | | | | | |
| | | | | | | | <i>6620\AA</i> | | <i>G=6055</i> | | |
| | | | | | <i>1800</i> | | <i>6400\AA</i> | | <i>G=5870</i> | | |
| <i>340</i> | <i>5"</i> | <i>V=7.3-7.7</i> | <i>G3</i> | | | | | <i>1ci</i> | | <i>6280-6540\AA</i> | |
| | | | | | | | | | | | |
| | | | | | | | <i>6225\AA</i> | | <i>G=5760</i> | <i>6130-6320</i> | |
| <i>3469</i> | | | | | | | | <i>2ci</i> | | <i>≈ 5000 ADU SUM AVG of 5 co/s</i> | |
| | | | | | | | | <i>3ci</i> | | | |
| | | | | | | | | <i>4ci</i> | | | |
| | | | | | <i>1800/</i> | | <i>6050\AA</i> | <i>7ci</i> | <i>G=5630</i> | <i>5960-6150</i> | |
| <i>3310</i> | | | | | | | | <i>5ci</i> | | <i><u>4500</u> ADU SUM AVG of 5 co/s</i> | |
| | <i>4.5"</i> | | | | | | | <i>7ci</i> | | | |
| | | | | | | | | <i>4ci</i> | | <i>12.5K max/pixel</i> | |
| | | | | | | | <i>5890\AA</i> | | <i>G=5505</i> | <i>5780 \rightarrow 5975</i> | |

351

P7#3

Date MAR 11/12/91..... Observers Hdy - Ty.....

Emulsion Batches:

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| Plate No. | Object | R.A. 1900 | Declination 1900 | Starting Time E.S.T. | Ending Time E.S.T. | Hour Angle End | Declination | Comparison Type/Filter | Exp. |
|-----------|----------------------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|------|
| CC00800 | HD197433 | 20 38.6 | +75 14 | 01 28 50 | 01 44 20 | E | | | |
| 801 | HD 197433 | | | 01 48 35 | 02 03 35 | E | clear | FeK | 90s |
| 802 | Flat Comp | | | | | | clear | FeA | 90s |
| 803 | Comp | | | | | | | | 90s |
| 804 | HD197433 | | | 02 22 10 | 02 37 20 | E | | | |
| 805 | Comp | | | | | | | FeA | 90s |
| 806 | Flat | | | | | | clear | Tung | 3s |
| 807 | Comp | | | | | | clear | FeA | 90s |
| 808 | HD197433 | 20 38.6 | +75 14 | 02 53 | 03 08 36 | | | | |
| 809 | Comp | | | | | | clear | FeA | 90s |
| 810 | FLAT | | | | | | clear | Tung | 3s |
| 811 | Comp | | | | | | clear | FeNe | 60s |
| 812 | HD197433 | | | 03 25 50 | 03 40 50 | | | | |
| 813 | HD197433 | | | 03 46 43 | 04 02 00 | | | | |
| 814 | Comp | | | | | | clear | FeK | 60s |

Spectr. Temp.

Focus

Spectr. Temp.

Exp. Mtr. Seeing

3708 4"

3800 4"

3881 4"

371

3817

3995

Spectr. Temp. Dome Temp./Hum. -8.2°C 50% Transparency Conditions *Free* 352.

Focus

Spectr. Temp. Dome Temp./Hum.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|----------------|-----------|-----|-----------------------|--------------|---------------|---------------------------|------|---------|---|---------|
| 3208 | 4 ^u | | | CCD Cass Blue Coll | 1800/. | 250u 1.2mm | 5890Å | 7ci | G=5505 | 4500 sum AVG ADU 7 cols 1.2 mm length longest slit | |
| 3000 | 4 ^u | | | " | " | " | " | 8ci | " | 5780-5975 Å | |
| | | | | | | | " | 1ci | | | |
| | | | | | | | 5890Å 5890Å | 2ci | | Note Grating got moved = then back to 5505 | |
| 3881 | 4 ^u | | | | | | 5890Å | 2ci | G=5505 | | |
| | | | | | | | " | | | | |
| | | | | | | | " | 3ci | | G=5505 | |
| | | | | | | | 5700Å | 4ci | G=5380 | 5600 - 5800 Å | |
| 4671 | | | | | | | | 5ci | | | |
| | | | | | | | | | | | |
| | | | | | | | 3950Å | 4ci | G=4208 | 3860 - 4060 Å | |
| 3817 | | | | | | | | 6ci | " | | |
| 2495 | | | | | | | | 1ci | | | |

353 pg#4

Date MAR. 11/12..(9.)..... Observers ..Hdy. - T. W.....

Emulsion Batches:

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Spectr. Temp.
 Focus.....6.7
 Spectr. Temp.

| 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. |
|-----------|----------|--------------|---------------------|-------------------------|-----------------------|-------------------|-------------|---------------------------|----------------|
| CC00815 | FLAT | | | | | | clear | TUNG | 60s |
| 816 | Comp | | | | | | clear | FeNe | 40s |
| 817 | HD197433 | 20 38.6 | +75 14 | 04 28 35 | 04 44 40 | E | | | |
| 818 | Comp | | | | | | | | 140s |
| 819 | FLAT | | | | | | clear | TUNG | 30s |
| 820 | Comp | | | | | | clear | Felle | 30s |
| 821 | HD197433 | 20 38.6 | +75 14 | 05 04 | 05 19 30 | E | | | |
| 822 | Comp | | | | | | clear | FeNe | 60s |
| 823 | FLAT | | | | | | clear | TUNG | 50s |
| 824 | Comp | | | | | | clear | FeAr | 90s |
| 825 | HD197433 | 20 38.6 | +75 14 | 05 34 16 | 05 49 25 | E | | | |
| 826 | Comp | | | | | | clear | FeAr | 90s |
| 827 | FLAT | | | | | | clear | TUNG | 70s |
| 828 | Comp | | | | | | clear | Felt | 90s |
| 829 | HD197433 | 20 38.6 | +75 14 | 06 00 | 06 08 32 | E | | | |

Exp. Mtr. Seeing

3160 5"

60sec

3320

3236

3200

Spectr. Temp. Dome Temp./Hum. -9°C 53% Transparency Conditions Fine 354
 Focus 6.7
 Spectr. Temp. Dome Temp./Hum.

| Exp. Mtr. | Seeing | Ptg. Mag. | Sp. | Inst. | Grating/Tilt | Slit | Emulsion | P.H. | Program | Remarks | Quality |
|-----------|--------|-------------------------|-------|-------------|--------------|-----------|-------------------|------|---------|---------------------------------------|---------|
| | | | | CCD CASS | 1800/ | 250 μ | 3950 \AA | | G=4200 | 4-7 K ADU/pixel | |
| | | | | | 1800 | | 4340 \AA | 3ci | G=4450 | G=4450 | |
| 3160 | 5" | \checkmark 7.3-7.9 | G3+K7 | | | | " | 4ci | | CCD T = -101.8°C | |
| | | | | | | | " | | G=4450 | 4245 - 4445 \AA | |
| | | | | | | | " | | 4" | 6-10 K ADU/pixel | |
| 60 sec | | | | | 1800/ | | 4120 \AA | | G=4300 | 4020-4220 \AA | |
| 3320 | | | | | | | " | | | 4.5 | |
| | | | | | | | | | | 5-9 K ADU/pixel | |
| | | | | | 1800/ | 250 μ | 4860 \AA | | G=4800 | 5-9 K ADU | |
| 3826 | | | | | | | | 2ci | | | |
| | | | | | | | | | | MAX 10, 900 ADU | |
| 2900 | | | | | 1800/ | | 6730 \AA | | G=6150 | 6640 \AA - 6870 \AA | |

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Comparison
Exp

9/5

2/5

357

echelle focus tests

0.01 on camera focus micrometer

= 0.6 pixel shift on Thomson CCD (19μ pixels)

