

Spectrograph ECHELLE Intensified Reticon TO CAM
 Grating 3002 Log Sheet RAW/RET
 Telescope 61" Wyeth Date 31 July - 1 Aug. 1988 Observer RDS
 Disk OR02222

| Change.... | File | ID | RA | 1950.0 Dec | L/R +/- | Exposure | Comments |
|------------|------|----|---------|---------------|------------|----------|----------------------------------------------------------------------------|
| | | | | | | | 5187A |
| | | 1 | Th-Ar | | ↓ | 60s | |
| | | 2 | SKY-DWN | 4 1/2 hrs. E | +30° | 2m | L.R.-sides very different; translation of Reticon Relative to Image Tubes? |
| | | 3 | Th-Ar | | ↑ | 60s | Appears to have started 30-31 July |
| | | 4 | Th-Ar | | ↓ | 60s | when we had the wet MCP connect. |
| | | 5 | SKY-DWN | φ hrs. | +30° | 2m | |
| | | 6 | Th-Ar | | ↑ | 60s | |
| | | 7 | INCAUDS | | | 120 min | |
| | | 8 | INCAND | | | 120 min | |
| | | 9 | INCAND | | | 60 min | ↑ Use Incands for preceding observations. |
| 8-1/2 1988 | | 10 | INCAND | | | 60 min | ↓ Use following Incands, Adjusted Reticon Positioning; |
| | | 11 | Th-Ar | | ↓ | 60s | Incands better but not great! |
| | | 12 | SKYEVEW | 0 hrs | +20° | 2m | 16 SKY |
| | | 13 | Th-Ar | | ↑ | 60s | Cross Disp = 1.494 |
| | | 14 | Th-Ar | | ↓ | 60s | |
| | | 15 | SKYEVEW | 4 hrs W. ST | +20° | 2m | 16 SKY |
| | | 16 | Th-Ar | | ↑ | 60s | |
| | | 17 | Th-Ar | | ↓ | 60s | |
| | | 18 | H156214 | 17 12 22 | 15 26 46 | 2m | 17 FAU STD 1.0 ND Filter 3.1 |
| | | 19 | Th-Ar | | ↑ | 60s | |
| | | 20 | Th-Ar | | ↓ | 60s | |
| | | 21 | S101758 | 15 47 12 | 12 42 35 | 2m | 34 MSTAR5 6.7/20 |
| | | 22 | Th-Ar | | ↑ | 60s | |
| | | 23 | Th-Ar | | ↓ | 60s | |
| | | 24 | W Ser | 18 06 50 | 15 33 36 | 15m | 40 FSTAR5 9.0/100 |
| | | 25 | Th-Ar | | ↑ | 60s | |
| | | 26 | Th-Ar | | ↓ | 60s | |
| | | 27 | 169245 | 18 20 41 | 26 11 55 | 3m | 48 MOV-6-RP 8.7/ |
| | | 28 | Th-Ar | | ↑ | 60s | |
| | | 29 | Th-Ar | | ↓ | 60s | |
| | | 30 | 174585C | 18 47 54 | 32 45 14 | 14m | π LINDR005 10.5 |
| | | 31 | Th-Ar | | ↑ | 60s | |
| | | 32 | | | | | |

Spectrograph ECHELLE Intensified Reticon TO CAM
 Grating 300L Log Sheet RAW/RET
 Telescope 61" Wynth Date Aug 1-2 1988 Observer JRC
 Disk 020 2223

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|---------|----------|--------------|-----|------------|----------|--------------------------------------------------------------------------------|
| | | TMR | | | ↓ | 60s | 25187A |
| | G21-20 | 18 35 15 | -06 50 30 | | | 3M | 15 HALOS 8.34/15 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | G181-43 | 17 22 14 | 37 19 42 | | | 3M | 15 HALOS 9.86/15 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | S66050 | 17 24 49 | 31 06 00 | | | 5M | 15 HALOS * 9.68/15 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | G183-11 | 17 52 35 | 20 16 54 | | | 6M | 15 HALOS 9.76/15 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | G154-21 | 17 45 01 | -09 35 12 | | | 8M | 15 HALOS 9.7/15 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | IE1848 | 18 48 10 | 33 05 30 | | | 16M | 42 WUMa 10.3/30 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | IE1037 | 19 37 05 | 30 27 58 | | | 10M | 42 WUMa 9.5/30 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | G125-4 | 19 17 18 | 41 33 42 | | | 3M | 15 HALOS 8.86/20 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | GLS 763 | 19 32 10 | 04 28 16 | | | 6M | 34 M STARS 9.4/20 |
| | | TMR | | | ↓ | 60s | |
| | S124835 | 19 33 44 | 05 53 45 | | | 2M | 34 M STARS 6.7/20 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | S189600 | 20 39 56 | -20 11 36 | | | 13M | 15 HALOS 10% S/Ag 9.84/30 |
| | | TMR | | | ↑ | 60s | Quit Low cts - moon up now |

8/2/88

TO CAM

Spectrograph ECHELLE Intensified Reticon
 Log Sheet
 Grating 300d Observer JMZ
 Telescope 61" WYETH Date 8/2-3/88 Disk 020 2226

| Change.... | File | ID | 1950.0 RA | Dec | L/R +/- | Exposure | Comments |
|------------|------|----------|--------------|----------|------------|----------|-------------------------|
| | | ThAr | | | ↓ | 60s | 2 = 5.187 clear |
| | | SKYEVIEW | ∅ hrs | +20° | | 2m | 16 sky |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | | SKYEVIEW | 4h W | +20° | | 2m | 16 sky |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | | H1146051 | 16:11:43 | -3:34:01 | | 2m | 2.7 IAU STANDARD |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | | H136202 | 15:16:45 | 1:57:12 | | 2m | 5.1 IAU STANDARD |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | | S101758 | 15:47:12 | 12:42:35 | | 2m | 6.7/20 M STARS (58) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | | H114762 | 13:09:55 | 17:46:55 | | 3m | 7.3 IAU STD (w/PLANET) |
| | | ThAr | | | ↑ | 60s | |
| | | H114762 | 13:09:55 | 17:46:55 | | 3m | |
| | | ThAr | | | ↓ | 60s | 7.3 IAU STD (w/PLANET) |
| | | ThAr | | | ↑ | 60s | |
| | | W SER | 18:06:50 | 75:33:36 | | 20m | 9.0/100's F STARS (687) |
| | | ThAr | | | ↑ | 60s | |
| | | W SER | 18:06:50 | 75:33:36 | | 10m | 9.0/100's F STARS (687) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | | IE1848 | 18:48:10 | 33:05:30 | | 20m | 10.3/30 LARRY (4) |
| | | ThAr | | | | 60s | |
| | | ThAr | | | | 60s | |
| | | IE1637 | 19:37:05 | 30:21:58 | | 12m | 9.5/30 LARRY (7) |
| | | ThAr | | | | 60s | |
| | | / | | | | / | |



8/2/88

Spectrograph ECHELLE Intensified Reticon TO CAM
 Grating 300L Log Sheet RAW/RET
 Telescope 61" WYETH Date 8/2-3/88 Observer JMZ
 Disk ORO 2227

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|---------|----|--------------|----------|------------|----------|------------------------------------|
| | | 1 | ThAr | | ↓ | 60s | $\lambda = 5187 \text{ \AA}$ clear |
| | G15735 | 2 | 18:53:03 | 8:20:19 | | 13m | 10.1/20 M STAIRS (70) |
| | | 3 | ThAr | | ↑ | 60s | |
| | | 4 | ThAr | | ↓ | 60s | |
| | (2) | 5 | 20:12:35 | 15:59:54 | | 9m | 10.1 Asteroids (2) |
| | | 6 | ThAr | | ↑ | 60s | |
| | | 7 | ThAr | | ↓ | 60s | |
| | H182572 | 8 | 19:22:35 | 11:50:16 | | 2m | 5.2 IAU STANDARDS |
| | | 9 | ThAr | | ↑ | 60s | |
| | | 10 | ThAr | | ↓ | 60s | |
| | S124835 | 11 | 19:33:44 | 5:53:45 | | 2m | 6.7/20 M STAIRS (72) |
| | | 12 | ThAr | | ↓ | 60s | |
| | G15763 | 13 | 19:32:10 | 4:28:16 | | 8m | 9.4/20 M STAIRS (71) |
| | | 14 | ThAr | | ↑ | 60s | |
| | | 15 | ThAr | | ↓ | 60s | |
| | G21-20 | 16 | 18:35:15 | 6:50:30 | | 4m | 8.34/15 Halos (1213) |
| | | 17 | ThAr | | ↑ | 60s | |
| | | 18 | ThAr | | ↓ | 60s | |
| | G204-23 | 19 | 17:28:26 | 44:05:30 | | 2m | 9.02/15 Halos (1152) |
| | | 20 | ThAr | | ↑ | 60s | |
| | | 21 | ThAr | | ↓ | 60s | |
| | G156162 | 22 | 16:15:59 | 55:23:48 | | 11m | 9.9/20 M STAIRS (62) |
| | | 23 | ThAr | | ↑ | 60s | |
| | | 24 | ThAr | | ↓ | 60s | |
| | G15623 | 25 | 16:22:39 | 48:28:24 | | 15m | 10.3/20 M STAIRS (63) |
| | | 26 | ThAr | | ↑ | 60s | |
| | | 27 | ThAr | | ↓ | 60s | |
| | H144284 | 28 | 16:00:57 | 58:41:59 | | 2m | 4.1/20 M STAIRS (60) |
| | | 29 | ThAr | | ↑ | 60s | |
| | | 30 | | | | | |
| | | 31 | | | | | |
| | | 32 | | | | | |

8/2/88

TO CAM

Spectrograph ECHELLE Intensified Reticon
 Log Sheet
 Grating 300 Observer JM2
 Telescope 6.1" WYETH Date 8/2-3/88 Disk 0120 2728

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|---------|----|--------------|----------|------------|----------|---------------------------------|
| | | 1 | ThA. | | ↓ | 60s | λ = 5187 Å CLEAR |
| | G154B | 2 | 00:03:05 | 45:32:00 | | 5m | 9.0/20 SPACE STAIRS (2) |
| | | 3 | ThA. | | ↑↓ | 60s | |
| | G154A | 4 | 00:08:05 | 45:32:06 | | 5m | 8.9/20 SPACE STAIRS (3) |
| | | 5 | ThA. | | ↑ | 60s | |
| | | 6 | ThA. | | ↓ | 60s | |
| | G1514 | 7 | 00:14:28 | 40:40:18 | | 4m | 9.0/20 SPACE STAIRS (4) |
| | | 8 | ThAr | | ↑ | 60s | |
| | | 9 | ThAr | | ↓ | 60s | |
| | S011983 | 10 | 1:44:10 | 63:36:14 | | 2m | 5.7/20 M STAIRS (10) |
| | | 11 | ThAr | | ↑↓ | 60s | |
| | G1569 | 12 | 1:40:10 | 63:34:24 | | 2.5m | 8.5/20 M STAIRS (9) |
| | | 13 | ThAr | | ↑ | 60s | |
| | | 14 | ThAr | | ↓ | 60s | |
| | G243-63 | 15 | 1:06:30 | 61:16:48 | | 4m | 7.7/100 HALOS (99) |
| | | 16 | ThAr | | ↑ | 60s | |
| | | 17 | ThAr | | ↓ | 60s | |
| | G172-59 | 18 | 1:29:53 | 52:46:48 | | 2m | 8.4/15 HALOS (130) |
| | | 19 | ThAr | | ↑ | 60s | |
| | | 20 | ThAr | | ↓ | 60s | |
| | CL15a | 21 | 00:15:31 | 43:44:16 | | 2m | 8.07/- M STAR, SPACE NEARBY (2) |
| | | 22 | ThAr | | ↑ | 60s | |
| | CL15Ar | 23 | " | " | ↓ | 60s | 11.04 " |
| | G1725a | 24 | 18:42:12 | 59:33:18 | | 8m | 8.9 M STAIRS & NEARBY (77) |
| | | 25 | ThAr | | ↑↓ | 60s | |
| | G1725b | 26 | " | " | | 13m | 9.54 " (78) |
| | | 27 | ThAr | | ↑ | 60s | |
| | | 28 | ThAr | | ↓ | 60s | |
| | G227-3 | 29 | 18:34:48 | 63:39:18 | | 3.5m | 8.07/20 HALOS (121) |
| | | 30 | ThAr | | ↑ | 60s | |
| | / | 31 | | | | / | |
| | / | 32 | | | | / | |

8/3/88

Spectrograph ECHELLE Intensified Reticon TO CAM
 Log Sheet RAW/RET
 Grating 300l Observer JM?
 Telescope 61" WYETH Date 8/23/88 Disk ORO 2229

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|---------|---------------------|--------------|----------|------------|----------|------------------------------------|
| | | ThA | | | ↓ | 60s | $\lambda = 5187 \text{ \AA}$ CLEAR |
| | G29-65 | | 23:45:18 | 3:53:54 | | 2M | 7.70/20 HALOS (1548) |
| | | ThA | | | ↑ | 60s | |
| | | ThA | | | ↓ | 60s | |
| | A31-16 | | 23:52:59 | 3:13:36 | | 2M | 7.71/20 HALOS (1557) |
| | | ThA | | | ↑ | 60s | |
| | G29-72 | | 23:47:31 | 2:35:48 | | 3M | 8.41/20 HALOS (1551) |
| | | ThA | | | ↑ | 60s | |
| | | ThA | | | ↓ | 60s | |
| | G31-3 | | 23:45:18 | 5:31:18 | | 4M | 8.37/20 HALOS (1549) |
| | | ThA | | | ↑ | 60s | |
| | | ThA | | | ↓ | 60s | |
| | G158-21 | | 23:58:25 | 5:12:36 | | 3M | 8.59/15 HALOS (1565) |
| | | ThA | | | ↑ | 60s | |
| | | ThA | | | ↓ | 60s | |
| | G158-28 | | 00:04:20 | 3:54:12 | | 3M | 8.19/15 HALOS (8) |
| | | ThA | | | ↑ | 60s | |
| | | ThA | | | ↓ | 60s | |
| | 270-178 | | 1:11:58 | 5:18:42 | | 2M | 7.5/15 HALOS (108) |
| | | ThA | | | ↑ | 60s | |
| | | ThA | | | ↓ | 60s | |
| | H18779 | | 1:23:54 | 00:39:29 | | 2M | 6.4 IAU STANDARDS |
| | | ThA | | | ↑ | 60s | |
| | | ThA | | | ↓ | 60s | |
| | SKYDOWN | 4 ^h East | +20° | | | 2M | 16 SKY |
| | | ThA | | | ↑ | 60s | |
| | | ThA | | | ↓ | 60s | |
| | SKYDOWN | Meridian | +20° | | | 2M | 16 SKY |
| | | ThA | | | ↑ | 60s | |
| | INCHAND | | | | | 120s | |
| | " | | | | | 120m | |
| | " | | | | | 120m | shut dark slide after 3rd (WFW) |

8/3/88

Intensified Reticon TO CAMI
 Spectrograph ECHELLE Log Sheet RAW/RET
 Grating 3000 Observer JMZ
 Telescope 6" WYETH Date 8/3-4/88 Disk 020 2230

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|------|---------|--------------|----------|------------|----------|--------------------------|
| | | THAr | | | ↓ | 60s | 2 = 5187A CLEAR |
| | | SKYEVEN | 4 hrs | +30° | | 2M | 16 sky |
| | | THAr | | | ↑ | 60s | Adjusted (THAr) LAMP IN |
| | | THAr | | | ↓ | 60s | holder to gain CNTS. |
| | | SKYEVEN | 4h West | +30° | | 3M | 16 sky |
| | | THAr | | | ↑ | 60s | ⇒ Blew R.A SET |
| | | THAr | | | ↓ | 60s | AND FAST FUSE BTWN SKES |
| | | H136202 | 15:16:45 | 1:57:12 | | 2M | 17 IAU STANDARDS |
| | | THAr | | | ↑ | 60s | |
| | | THAr | | | ↓ | 60s | |
| | | H115521 | 13:15:04 | 5:43:58 | | 2M | 17 IAU STANDARDS |
| | | THAr | | | ↑ | 60s | |
| | | THAr | | | ↓ | 60s | |
| | | S101758 | 15:47:12 | 12:42:35 | | 2M | 6.7/20 M STARS (58) |
| | | THAr | | | ↑ | 60s | |
| | | THAr | | | ↓ | 60s | |
| | | I1E1037 | 19:37:05 | 30:27:58 | | 20M | 9.5/30 LARRY #7 |
| | | THAr | | | ↑ | 60s | ~10% SKY |
| | | THAr | | | ↓ | 60s | |
| | | G1699 | 17:55:23 | 4:33:18 | | 20M | 9.54 SPACE & NEARBY (26) |
| | | THAr | | | ↑ | 60s | (BARNARD'S STAR |
| | | THAr | | | ↓ | 60s | |
| | | 163117 | 17:52:08 | 11:37:24 | | 20M | 6.96/300 F STARS (471) |
| | | THAr | | | ↑ | 60s | Very HAZY |
| | | THAr | | | ↓ | 60s | |
| | | 168459 | 18:17:22 | -8:00:12 | | 13M | 6.54/300 F STARS (478) |
| | | THAr | | | ↑ | 60s | |
| | | THAr | | | ↓ | 60s | |
| | | G25-29 | 21:24:13 | 5:13:42 | | 7M | 8.5/30 HALOS (1363) |
| | | THAr | | | ↑ | 60s | |
| | | / | | | | / | |
| | | / | | | | / | |

8/3/88

Spectrograph ECHELLE Intensified Reticon TO CAM
 Log Sheet RAW/RET
 Grating 300f Observer JMZ
 Telescope 61" WYETH Date 8/3-4/88 Disk 020 2231

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|---------|------|--------------|----------|------------|----------|----------------------|
| | | ThAr | | | ↓ | 60s | 2-5187A HAZY |
| | G26-11 | | 21:29:56 | 00:47:47 | | 4M | 8.33/15 H/105 (1371) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G188-6 | | 21:30:53 | 30:08:12 | | 5m | 8.09/60 H/105 (1373) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | S126-8 | | 21:30:41 | 23:54:12 | | 4M | 8.54/20 H/105 (1372) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G26-34 | | 21:49:05 | 04:34:54 | | 5.5M | 8.65/20 H/105 (1391) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | S127191 | | 21:51:28 | 6:37:42 | | 2M | 6.18/20 H/105 (1394) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G18-10 | | 21:56:36 | 2:57:20 | | 5m | 8.45/20 H/105 (1403) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G18-35 | | 22:09:08 | 05:56:42 | | 4M | 8.49/20 H/105 (1424) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G27-21 | | 22:13:29 | -7:20:06 | | 5m | 8.78/15 H/105 (1429) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | S164618 | | 21:41:42 | 12:00:12 | | 4M | 8.55/15 H/105 (1383) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G27-42 | | 22:40:45 | -6:39:36 | | 4.5M | 8.06/20 H/105 (1462) |
| | | ThAr | | | ↑ | 60s | |
| | | / | | | | / | |
| | | / | | | | / | |

8/13/88

Intensified Reticon TO CAM
 Spectrograph ECHELLE Log Sheet RAW RET
 Grating 300f Observer JTC
 Telescope 61" WYETH Date 8/13-4/88 Disk ORO 2232

| Change.... | File | ID | 1950.0 RA | Dec | L/R +/- | Exposure | Comments |
|------------|----------|----|--------------|-----------|------------|----------|----------------------|
| | | 1 | | | ↓ | 60s | z=5.187A Hazy |
| | S90296 | 2 | 22:08:38 | 24:14:30 | | 4.5m | 8.61/30 HALOS (1420) |
| | | 3 | | | ↑ | 60s | |
| | | 4 | | | ↓ | 60s | |
| | G127-12 | 5 | 22:13:35 | 24:40:48 | | 3m | 8.93/15 HALOS (1430) |
| | | 6 | | | ↑ | 60s | |
| | | 7 | | | ↓ | 60s | |
| | G157-8 | 8 | 23:01:21 | -5:04:00 | | 2m | 6.68/20 HALOS (1480) |
| | | 9 | | | ↑ | 60s | |
| | | 10 | | | ↓ | 60s | |
| | G67-44 | 11 | 23:08:15 | 18:38:18 | | 3m | 8.56/20 HALOS (1493) |
| | | 12 | | | ↑ | 60s | |
| | | 13 | | | ↓ | 60s | |
| | G68-10 | 14 | 23:19:27 | 16:21:30 | | 4m | 8.96/20 HALOS (1511) |
| | | 15 | | | ↑ | 60s | |
| | | 16 | | | ↓ | 60s | |
| | G190-20 | 17 | 23:19:20 | 43:49:18 | | 2m | 7.35/20 HALOS (1510) |
| | | 18 | | | ↑ | 60s | |
| | | 19 | | | ↓ | 60s | |
| | G171-7 | 20 | 23:35:30 | 45:55:24 | | 2m | 6.59/15 HALOS (1539) |
| | | 21 | | | ↑ | 60s | |
| | | 22 | | | ↓ | 60s | |
| | S166/461 | 23 | 21:29:39 | 12:29:21 | | 2m | 6.9/20 M STARS (79) |
| | | 24 | | | ↑ | 60s | |
| | G15830 | 25 | 21:27:19 | -12:43:46 | | 12m | 9.1/20 M STARS (78) |
| | | 26 | | | ↑ | 60s | |
| | | 27 | | | ↓ | 60s | |
| | S127114 | 28 | 21:48:59 | 00132:09 | | 2m | 6.9/20 M STARS (80) |
| | | 29 | | | ↑ | 60s | |
| | | 30 | | | ↓ | 60s | |
| | G15846 | 31 | 21:59:38 | 1:09:30 | | 8m | 9.2/20 M STARS (81) |
| | | 32 | | | ↑ | 60s | |

TO CAM 8/4/88

Intensified Reticon

Spectrograph ECHELLE

Log Sheet

RAW RET

Grating 300

Observer JM2 / JRC

Telescope 61" WYETH

Date 8/3-4/88

Disk 0120 2233

29

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|--------------|------|----|--------------|-------------------|------------|----------|-------------------------------|
| | | 1 | | | ↓ | 60s | λ = 5127 Å Hazy |
| | | 2 | 4982 | 00:49:12 -6:22:15 | | 20m | 8.0 FSTARS (19) |
| | | 3 | | | ↑ | 60s | |
| | | 4 | | | ↓ | 60s | |
| | | 5 | G133-57 | 1:54:31 41:50:06 | | 3M | 9.01/15 HALOS (170) |
| | | 6 | | | ↑ | 60s | |
| | | 7 | | | ↓ | 60s | |
| | | 8 | H26162 | 4:06:15 19:28:43 | | 2M | 5.5 IAU STANDARDS |
| | | 9 | | | ↑ | 60s | |
| | | 10 | | | ↓ | 60s | |
| | | 11 | SKYDWARF | 4h East +30° | | 2M | 16 SKY |
| | | 12 | | | ↑ | 60s | |
| | | 13 | | | ↓ | 60s | |
| | | 14 | SKYDWARF | 0hrs +30° | | 2M | 16 SKY |
| | | 15 | | | ↑ | 60s | |
| | | 16 | INCANS | | | 120m | |
| | | 17 | INCANS | | | 120M | |
| Aug 4-5 1988 | | 18 | | | ↓ | 60s | dark 2.8 25157 Å |
| | | 19 | SKYEVEM | 0hrs +20° | | 2M | 16 SKY |
| | | 20 | | | ↑ | 60s | |
| | | 21 | | | ↓ | 60s | |
| | | 22 | SKYEVEM | 4hrs West +20° | | 2M | 16 SKY |
| | | 23 | | | ↑ | 60s | |
| | | 24 | | | ↓ | 60s | |
| | | 25 | H156014 | 17 12 22 14 26 41 | | 2M | 17 IAU STDS 1.0 ND Filter 3.1 |
| | | 26 | | | ↑ | 60s | |
| | | 27 | | | ↓ | 60s | |
| | | 28 | S101758 | 15 47 12 12 42 35 | | 2M | 34 MSTARS 6.7/20 |
| | | 29 | | | ↓ | 60s | |
| | | 30 | G65600 | 15 49 45 11 01 26 | | 7M | 34 MSTARS 9.4/20 |
| | | 31 | | | ↑ | 60s | |
| | | 32 | | | | | |

TO CAM 8/4/88

Intensified Reticon

Spectrograph ECHELLE Log Sheet

Grating 300 L Observer JRC

Telescope 61" Wyeath Date Aug 4-5 1988 Disk 020 2234

| Change.... | File | ID | 1950.0 RA | Dec | L/R +/- | Exposure | Comments |
|------------|------|----------|--------------|-----------|------------|-------------------|----------------------------------------------------------|
| | | TMR | | | ↓ | 60s | λ 5167 Å |
| | | GLS 644A | 16 52 48 | -08 15 17 | | 7 ^m | 34 M STARS 9.1/20 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | Dupree H ₂ λ 6562 Å |
| | | H124897 | 14 13 19 | 19 24 51 | | 4 ^m | Dupree H ₂ (Inertius) 2.0 filter -0.04 500 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | | H127665M | 14 29 40 | 30 35 30 | | 8 ^m | Dupree H ₂ 1.0 ND filter 3.58/500 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | | H129712 | 14 41 13 | 26 44 21 | | 18 ^m | Dupree H ₂ 1.0 ND filter 4.8/500 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | | H133208 | 15 00 04 | 46 36 11 | | 8 ^m | Dupree H ₂ 1.0 ND filter 3.5/500 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | | H135222M | 15 13 29 | 33 29 55 | | 9 ^m | Dupree H ₂ 1.0 ND filter 3.47/500 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | | H141527 | 15 46 30 | 28 18 31 | | 20 ^m | Dupree H ₂ 1 5.85/500 |
| | | TMR | | | ↑ | 60s | |
| | | H141527 | 15 46 30 | 28 18 3 | | 15 ^m | Dupree H ₂ 5.85/500 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | | H148856M | 16 28 03 | 21 35 49 | | 5 ^m | Dupree H ₂ 1.0 ND filter 2.71/500 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | | H156044M | 17 12 22 | 14 26 47 | | 3 ^m | Dupree H ₂ 1.0 ND filter 3.45/500 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | | H157999 | 17 24 02 | 04 10 56 | | 16.5 ^m | Dupree H ₂ 1.0 ND filter 4.74/500 |
| | | TMR | | | ↑ | 60s | |

Intensified Reticon TO CAM 8/5/68

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300L Observer JRC

Telescope 61" W. J. T. H. Date Aug 5-6 1988 Disk ORO 2240

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|---------|----------|--------------|-----|------------|------------------|-----------------------------------------|
| | | TNR | | | ↓ | 60s | λ 6562 A |
| | H153210 | 16 55 17 | 09 27 04 | | | 6 ^m | Degree H α 1.0 ND Filter 3.2/500 |
| | | TNR | | | ↑ | 60s | |
| | | TNR | | | ↓ | 60s | |
| | H154143 | 17 00 50 | 14 09 42 | | | 2 ^m | Degree H α 4.98/500 |
| | | TNR | | | ↑ | 60s | |
| | | TNR | | | ↓ | 60s | |
| | H180972 | 19 15 59 | 00 59 36 | | | 2 ^m | Degree H α 5.1/500 |
| | | TNR | | | ↑ | 60s | |
| | | TNR | | | ↓ | 60s | |
| | H182955 | 19 24 18 | 14 47 24 | | | 3 ^m | Degree H α 5.51/500 |
| | | TNR | | | ↑ | 60s | |
| | | TNR | | | ↓ | 60s | |
| | H183439 | 19 26 36 | 24 33 40 | | | 9 ^m | Degree H α 1.0 ND 4.44/500 |
| | | TNR | | | ↑ | 60s | |
| | | TNR | | | ↓ | 60s | (* See note in Log) |
| | H183912 | 19 28 42 | 27 51 13 | | | 4 ^m | Degree H α 1.0 ND 3.08/500 |
| | | TNR | | | ↑ | 60s | |
| | | TNR | | | ↓ | 60s | |
| | H185018 | 19 34 30 | 11 09 58 | | | 5 ^m | Degree H α 5.78/500 |
| | | TNR | | | ↑ | 60s | |
| | | TNR | | | ↓ | 60s | |
| | H186791 | 19 43 53 | 10 29 25 | | | 3 ^m | Degree H α 1.0 ND 2.72/500 |
| | | TNR | | | ↑ | 60s | |
| | | TNR | | | ↓ | 60s | |
| | H187076 | 19 45 09 | 18 24 35 | | | 5 ^m | Degree H α 1.0 ND 3.82/500 |
| | | TNR | | | ↑ | 60s | |
| | | TNR | | | ↓ | 60s | |
| | H187193 | 19 45 43 | 25 15 32 | | | 4.5 ^m | Degree H α 5.95/500 |
| | | TNR | | | ↑ | 60s | |
| | | \ | | | | | |
| | | \ | | | | | |

8/6/88

Spectrograph ECHELLE Intensified Reticon TO CAM
 Log Sheet RAW/RET
 Grating 300L Observer JRC
 Telescope 61" Wmeth Date Aug 5-6 1988 Disk 020 2242

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|-------------------|---------|-----------|--------------|-----|------------|----------|-------------------------------|
| | | | | | ↓ | 60s | 25187P |
| | H4128 | 00 41 04 | -18 15 39 | | | 2M | 17 JAN STDS 1.0 ND FILTER 2.0 |
| | THAr | | | | ↑ | 60s | |
| | THAr | | | | ↓ | 60s | |
| | SKYDNE | 4hrs East | +20° | | | 3M | 16 SKY |
| | THAr | | | | ↑ | 60s | |
| | THAr | | | | ↓ | 60s | |
| | SKYDNNM | 0hrs | +20° | | | 3M | 16 SKY |
| | THAr | | | | ↑ | 60s | |
| | INCANS | | | | | 120M | |
| | INCANDS | | | | | 120M | |
| Aug 6-7 88 JMZ | THAr | | | | ↓ | 60s | λ = 5187 Å PARTLY CLDY |
| | SKYEVEN | 0 hrs. | +20° | | | 2M | 16 SKY |
| | THAr | | | | ↑ | 60s | |
| | THAr | | | | ↓ | 60s | |
| | SKYEVEN | 4h West | +20° | | | 2M | 16 SKY |
| | THAr | | | | ↑ | 60s | |
| | THAr | | | | ↓ | 60s | |
| | H11521 | 13:15:04 | 5:43:58 | | | 2M | 4.8 JAN STANDARDS |
| | THAr | | | | ↑ | 60s | |
| | THAr | | | | ↓ | 60s | |
| | S101758 | 15:47:12 | 12:42:35 | | | 2M | 6.7/20 M STARS (58) |
| | THAr | | | | ↑ | 60s | |
| | THAr | | | | ↓ | 60s | |
| | G165-22 | 13:35:51 | 39:26:00 | | | 3.5M | 7.78/15 HALOS (931) |
| | THAr | | | | ↑ | 60s | |
| | THAr | | | | ↓ | 60s | |
| | S082651 | 13:03:50 | 22:53:00 | | | 2M | 5.9/20 M STARS (43) |
| | THAr | | | | ↑ | 60s | |
| | THAr | | | | ↓ | 60s | |
| | G15499 | 13:03:49 | 70:59:47 | | | 12.5M | 9.4/20 M STARS (42) |
| | THAr | | | | ↑ | 60s | |

8/6/88

Spectrograph ECHELLE Intensified Reticon TO CAM
 Log Sheet RAW/RET
 Grating 300L Observer JM2
 Telescope 61" WYETH Date AUG/6-7/88 Disk ORO 2243

| Change.... | File | ID | 1950.0 RA | Dec | L/R +/- | Exposure | Comments |
|------------|----------|------|--------------|----------|------------|----------|-----------------------|
| | | ThAr | | | ↓ | 60s | 2 = 5187A PARTLY cldy |
| | H1144515 | | 16:03:32 | 10:49:12 | | 2M | 8.5/20 M STARS (61) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G1s 735 | | 18:53:03 | 8:20:19 | | 8M | 10.1/20 M STARS (70) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | Sφ45246 | | 14:50:17 | 46:40:54 | | 2M | 7.1/20 M STARS (53) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G1s 572 | | 14:59:10 | 45:31:21 | | 4M | 9.1/20 M STARS (56) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | H1144209 | | 16:00:57 | 58:41:59 | | 2M | 4.1/20 M STARS (60) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G1s 6162 | | 16:15:59 | 55:23:48 | | 7M | 9.96/20 M STARS (62) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | IE1848 | | 18:48:10 | 33:05:32 | | 11M | 10.3/300 LARRY (11) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | IE1037 | | 19:37:05 | 30:27:58 | | 6M | 9.5/30 LARRY (7) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | (2) | | 20:09:2 | 15:25:53 | | 55M | 9.9 ASTEROIDS |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | H182572 | | 19:22:35 | 11:50:10 | | 2M | 5.7 TAU STANDARDS |
| | | ThAr | | | ↑ | 60s | |
| | / | | | | | / | |
| | / | | | | | / | |

Intensified Reticon TO CAM 8/5

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300P Observer JMZ

Telescope 61" WYETH Date AUG/6-7/1988 Disk ORO 2244

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|------|----|--------------|-----------|------------|------------------|------------------------|
| | | 1 | ThA. | | ↓ | 60s | 2=5187A PTLY cloudy |
| | | 2 | S16294 | 19:42:21 | -17:37:42 | 4m | 9.16/30 HALOS (1271) |
| | | 3 | ThA. | | ↑ | 60s | |
| | | 4 | ThA. | | ↓ | 60s | |
| | | 5 | WSEF | 18:06:50 | -15:33:38 | 20m | 9.0/100's FSTARS (689) |
| | | 6 | ThA. | | ↑ | 60s | ↳ large AIRMASS |
| | | 7 | TNR | | ↓ | 60s | |
| | | 8 | 156-48WLB | 22 45 14 | -04 29 30 | 2 ^m | 15 HALOS 6.66/15 |
| | | 9 | TNR | | ↑ | 60s | |
| | | 10 | TNR | | ↓ | 60s | |
| | | 11 | GLs 69 | 01 40 10 | 63 34 24 | 2 ^m | 34 M STARS 8.5/20 |
| | | 12 | TNR | | ↓ | 60s | |
| | | 13 | S041983 | 01 44 10 | 63 36 14 | 2 ^m | 34 M STARS 5.7/20 |
| | | 14 | TNR | | ↑ | 60s | |
| | | 15 | TNR | | ↓ | 60s | |
| | | 16 | G172-49 | 01 17 59 | 51 43 24 | 2 ^m | 15 HALOS 7.62/20 |
| | | 17 | TNR | | ↑ | 60s | clouded out at 2am |
| | | 18 | TNR | | ↓ | 60s | |
| | | 19 | SKYDWN | 4hrs East | +20° | 2 ^m | 16 SKY |
| | | 20 | TNR | | ↑ | 60s | |
| | | 21 | TNR | | ↓ | 60s | |
| | | 22 | SKYDWN | 0hrs | +20° | 2 ^m | 16 SKY |
| | | 23 | TNR | | ↑ | 60s | |
| | | 24 | INCANS | | | 120 ^m | |
| | | 25 | INCAND | | | 120 ^m | |
| | | 26 | INCAND | | | 82 ^m | |
| | | 27 | | | | | |
| | | 28 | | | | | |
| | | 29 | | | | | |
| | | 30 | | | | | |
| | | 31 | | | | | |
| | | 32 | | | | | |

8/17/88

Spectrograph ECHELLE Intensified Reticon TO CAM
 Log Sheet RAW RET
 Grating 3002 Observer JRL
 Telescope 6" Wyeth Date Aug 16-17 1988 Disk 020 2246

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|----------|----------|--------------|-----|------------|----------|------------------------------------------------------------|
| | | TNR | | | ↓ | 60s | 251878 |
| | -185550 | 19 55 57 | -18 20 18 | | | 20 M | 15 HALOS 9.29/ |
| | Th-Ar | | | | ↕ | 60s | |
| | -185550 | " | " | | | 6m | " Very strong left Persistence on right side |
| | Th-Ar | | | | ↑ | 60s | |
| | LHART978 | | | | | | Reset Disc. to 3.0. |
| | RHART978 | | | | | | Left Side Alignment. Reset- |
| | LHART978 | | | | | | No improvement. |
| | RHART978 | | | | | | L-R=0.2 Ldark ≈ 4 Rdark |
| | Th-Ar | | | | ↓ | 60s | |
| | (2) | 20:02:28 | 13:47:38 | | | 6m | #17 IAU/Asteroid |
| | Th-Ar | | | | ↑ | 60s | |
| | Th-Ar | | | | ↓ | 60s | #17 IAU standard 7.7 |
| | H213014 | 22:25:46 | 17:00:28 | | | 2m | ↓ ↓ |
| | Th-Ar | | | | ↕ | 60s | |
| | 213014B | 22:25:46 | 17:00:28 | | | 3m | 17 IAU STDS 10.0? |
| | Th-Ar | | | | ↑ | 60s | |
| | Th-Ar | | | | ↓ | 60s | |
| | G126-36 | 21 45 59 | 19 44 42 | | | 5m | 15 HALOS 9.93/20 |
| | Th-Ar | | | | ↑ | 60s | |
| | Th-Ar | | | | ↓ | 60s | |
| | G15-5 | 21 51 39 | 04 44 30 | | | 3m | 15 HALOS 9.26/15 |
| | TNR | | | | ↑ | 60s | |
| | TNR | | | | ↓ | 60s | |
| | S164894 | 22 07 00 | 13 51 00 | | | 4 m | 15 HALOS 9.57/15 |
| | Th-Ar | | | | ↑ | 60s | |
| | Th-Ar | | | | ↓ | 60s | |
| | 627-28 | 22 24 01 | 04 21 18 | | | 4 m | 15 HALOS 9.71/15 |
| | Th-Ar | | | | ↑ | 60s | |
| | Th-Ar | | | | ↓ | 60s | |
| | S191281 | 22 35 14 | 22 54 12 | | | 6.5 m | 15 HALOS 9.10/30 |
| | Th-Ar | | | | ↑ | 60s | |

8/17/88

Spectrograph ECHELLE Intensified Reticon TO CAM
 Log Sheet RAW/RET
 Grating 300E Observer JRC PDM
 Telescope 61" Wyeth Date Aug. 16-17 1988 Disk ORO 2248

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|------|----|--------------|-------------------|------------|----------|------------------|
| | | 1 | Th-AR | | ↓ | 60s | 2.9167 R |
| | | 2 | 6270-6 | 0043 35 -05 54.54 | | 2m | 15 HALOS 9.15/15 |
| | | 3 | Th-AR | | ↑ | 60s | |
| | | 4 | Th-AR | | ↓ | 60s | |
| | | 5 | 6270-7 | 0045 25 -09 37 18 | | 2m | 15 HALOS 7.74/15 |
| | | 6 | Th-AR | | ↑ | 60s | |
| | | 7 | Th-AR | | ↓ | 60s | |
| | | 8 | 632-53 | 0048 36 18 31 12 | | 2m | 15 HALOS 8.76/15 |
| | | 9 | Th-AR | | ↕ | 60s | |
| | | 10 | 632-56 | 0050 35 18 52 36 | | 3m | 15 HALOS 9.53/15 |
| | | 11 | Th-AR | | ↑ | 60s | |
| | | 12 | Th-AR | | ↓ | 60s | |
| | | 13 | 634-3 | 0105 30 21 42 42 | | 2m | 15 HALOS 7.65/15 |
| | | 14 | Th-AR | | ↑ | 60s | |
| | | 15 | Th-AR | | ↓ | 60s | |
| | | 16 | 634-36 | 0130 13 23 26 30 | | 3m | 15 HALOS 9.03/30 |
| | | 17 | Th-AR | | ↑ | 60s | |
| | | 18 | Th-AR | | ↓ | 60s | |
| | | 19 | 64-10 | 0214 17 21 26 12 | | 3m | 15 HALOS 9.05/15 |
| | | 20 | Th-AR | | ↕ | 60s | |
| 21 | 4 Ar | 22 | sky DOWN | 4 hrs. east +20° | | 3m | 16 SKY |
| | | 23 | Th-AR | | ↑ | 60s | |
| | | 24 | Th-AR | | ↓ | 60s | |
| | | 25 | sky DOWN | meridian +20° | | 3m | 16 SKY |
| | | 26 | Th-AR | | ↑ | 60s | |
| | | 27 | INC AND | | | 120" | |
| | | 28 | INC AND | | | 120" | |
| | | 29 | INC AND | | | 20 | |
| | | 30 | / | | | / | |
| | | 31 | / | | | / | |
| | | 32 | / | | | / | |

8/18/88

Spectrograph ECHELLE Intensified Reticon TO CAM
 Log Sheet RAW RET
 Grating 300f Observer JMZ & JRC
 Telescope 6" WYE III Date 8/17-18/88 Disk ARO 2250

| Change.... | File | ID | 1950.0 RA | Dec | L/R +/- | Exposure | Comments |
|----------------|------|----|--------------|-----------|------------|----------|------------------------------------|
| | | 1 | Th-Ar | | ↓ | 60s | $\lambda = 5187 \text{ \AA}$ FOGGY |
| | | 2 | SKYDUNK | 0hrs | +20° | 2M | 16 SKY |
| | | 3 | Th-Ar | | ↑ | 60s | |
| | | 4 | INCANDS | | | 120M | |
| | | 5 | INCANDS | | | 120M | |
| Aug 18-19 1988 | | 6 | TMV | | ↓ | 60s | $\lambda 5187 \text{ \AA}$ |
| | | 7 | SKYVIEW | 0hrs | +20° | 2M | 16 SKY (persistent spike) |
| | | 8 | TMV | | ↑ | 60s | |
| | | 9 | Th-Ar | | ↓ | 60s | |
| | | 10 | SKYVIEW | 4hrs West | +20° | 2M | 16 SKY |
| | | 11 | TMV | | ↑ | 60s | |
| | | 12 | Th-Ar | | ↓ | 60s | (circ fan on) |
| | | 13 | H136202 | 15 16 45 | 157 11 | 2M | 17 IAU STD 5.1 |
| | | 14 | Th-Ar | | ↑ | 60s | |
| | | 15 | Th-Ar | | ↓ | 60s | |
| | | 16 | H135148 | 15 10 55 | 12 38 36 | 3M | 15 HALOS 9.49/15 |
| | | 17 | Th-Ar | | ↑ | 60s | |
| | | 18 | Th-Ar | | ↓ | 60s | |
| | | 19 | G179-11 | 15 01 52 | 45 10 54 | 3M | 15 HALOS 8.64/15 |
| | | 20 | Th-Ar | | ↑ | 60s | |
| | | 21 | Th-Ar | | ↓ | 60s | |
| | | 22 | G179-56 | 15 47 23 | 45 56 42 | 2M | 15 HALOS 9.19/15 |
| | | 23 | Th-Ar | | ↑ | 60s | |
| | | 24 | Th-Ar | | ↓ | 60s | |
| | | 25 | G15-14 | 15 10 13 | -00 56 36 | 4M | 15 HALOS 9.32/15 |
| | | 26 | Th-Ar | | ↑ | 60s | |
| | | 27 | Th-Ar | | ↓ | 60s | |
| | | 28 | G16-13 | 15 46 34 | 08 34 30 | 5M | 15 HALOS 10.00/15 |
| | | 29 | Th-Ar | | ↑ | 60s | |
| | | 30 | | | | | |
| | | 31 | | | | | |
| | | 32 | | | | | |

8/18/88

Intensified Reticon TO CAMI
 Spectrograph ECHELLE Log Sheet RAW/RET
 Grating 300L Observer JRC
 Telescope 61" Wyeth Date AUG 18/19, 1988 Disk OR02252

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|------|----|--------------|----------|------------|-----------------|--------------------|
| | | 1 | Th-AR | | ↑ | 60 ^s | 2 5187 R |
| | | 2 | GL7250 | 18 42 12 | 59 33 18 | 6 ^m | 45 NEARBY 8.90/ |
| | | 3 | Th-AR | | ↓ | 60 ^s | |
| | | 4 | GL7256 | 18 42 12 | 59 33 18 | 7 ^m | 45 NEARBY 9.69 |
| | | 5 | Th-AR | | ↑ | 60 ^s | |
| | | 6 | Th-AR | | ↓ | 60 ^s | |
| | | 7 | 216334 | 22 49 41 | -21 58 22 | 20 ^m | 40 FSTARS 8.10/300 |
| | | 8 | Th-AR | | ↓ | 60 ^s | |
| | | 9 | 216334 | 22 49 41 | -21 58 22 | 12 ^m | 40 FSTARS 8.10/300 |
| | | 10 | Th-AR | | ↑ | 60 ^s | |
| | | 11 | ThAR | | ↓ | 60 ^s | |
| | | 12 | (1) | 00 22 51 | -14 01 27 | 4 ^m | 17 ASTEROIDS 9.4 |
| | | 13 | ThAR | | ↑ | 60 ^s | |
| | | 14 | ThAR | | ↓ | 60 ^s | |
| | | 15 | -18271 | 1 34 54 | -17 44 12 | 9 ^m | 15 HALOS 9.8/20 |
| | | 16 | ThAR | | ↑ | 60 ^s | |
| | | 17 | ThAR | | ↓ | 60 ^s | |
| | | 18 | 631-41 | 00 15 20 | 00 06 00 | 3 ^m | 15 HALOS 8.88/15 |
| | | 19 | ThAR | | ↑ | 60 ^s | |
| | | 20 | ThAR | | ↓ | 60 ^s | |
| | | 21 | 631-46 | 00 20 43 | -00 06 00 | 10 ^m | 15 HALOS 9.92/15 |
| | | 22 | ThAR | | ↑ | 60 ^s | |
| | | 23 | ThAR | | ↓ | 60 ^s | |
| | | 24 | 6158-90 | 00 27 27 | -06 02 18 | 6 ^m | 15 HALOS 9.42/15 |
| | | 25 | ThAR | | ↑ | 60 ^s | |
| | | 26 | ThAR | | ↓ | 60 ^s | |
| | | 27 | 5128872 | 00 36 00 | -08 34 35 | 8 ^m | 15 HALOS 9.25/30 |
| | | 28 | ThAR | | ↑ | 60 ^s | |
| | | 29 | ThAR | | ↓ | 60 ^s | |
| | | 30 | 669-8 | 00 36 08 | 30 44 42 | 3 ^m | 15 HALOS 9.04/15 |
| | | 31 | ThAR | | ↑ | 60 ^s | |
| | | 32 | / | | | / | |

8/19/88

Spectrograph ECHELLE Intensified Reticon TO CAM
 Log Sheet RAW/RET
 Grating 300L Observer JRC
 Telescope 61' Wyeth Date AUG. 18/19 1988 Disk ORO225B

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|---------|-----|--------------|-----------|------------|------------------------------------|-------------------------------------|
| | | THV | | | ↓ | 60s | λ 5187 Å |
| | 2916 | | 00 29 51 | -24 55 22 | | 7 ^m 40 | FSTARS 7.3/15 ST 085 |
| | | THV | | | ↑ | 60s | |
| | | THV | | | ↓ | 60s | |
| | 5096 | | 00 50 08 | -13 12 26 | | 11 ^m 40 | FSTARS 8.19/15 ST 085 |
| | | THV | | | ↑ | 60s | |
| | | THV | | | ↓ | 60s | |
| | 5432 | | 00 58 10 | -18 23 10 | | 10 ^m 40 | FSTARS 7.80/15 ST 085 |
| | | THV | | | ↑ | 60s | |
| | | THV | | | ↓ | 60s | |
| | 12814 | | 02 03 10 | 06 47 26 | | 5 ¹ / ₂ M 40 | FSTARS 6.88/15 ST 085 |
| | | THV | | | ↑ | 60s | |
| | | THV | | | ↓ | 60s | |
| 32 | 271-154 | | 01 45 08 | -03 29 18 | | 3 ^m 15 | HALOS 8.21/15 |
| | | THV | | | ↑ | 60s | |
| | | THV | | | ↓ | 60s | |
| | 271-161 | | 01 47 57 | -06 01 54 | | 7 ^m 15 | HALOS 9.60/15 |
| | | THV | | | ↑ | 60s | |
| | | THV | | | ↓ | 60s | |
| | 671-40 | | 01 50 34 | -01 34 12 | | 2 ^m 15 | HALOS 7.43/15 |
| | | THV | | | ↑ | 60s | |
| | | THV | | | ↓ | 60s | |
| | 14428 | | 00 41 04 | -18 15 39 | | 2 ^m 17 | IAU STD, 2.0 ND Filter 2.0 |
| | | THV | | | ↑ | 60s | |
| | | THV | | | ↓ | 60s | |
| | SKYDOME | | 4hrs East | +20° | | 3 ^m 16 | SKY |
| | | THV | | | ↑ | 60s | |
| | | THV | | | ↓ | 60s | |
| | SKYDOME | | 0hrs | | | M 16 | SKY |
| | | THV | | | ↑ | 60s | |
| | INCONS | | | | | 120 ^m | |
| | INCONS | | | | | 120 ^m | |

8/19/88

Intensified Reticon TO CAMI
 Spectrograph ECHELLE Log Sheet RAW/RET
 Grating 3002 Observer RPS
 Telescope 61" Wyeth Date 19/20 Aug. 1988 Disk ORO 2254

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|------|----|--------------|----------|------------|----------|-------------------------------------------------------------|
| | | 1 | Th-Ar | | ↓ | 60s | |
| | | 2 | SKY-EVE | φ hrs. | +20° | 2m | |
| | | 3 | Th-Ar | | ↑ | 60s | |
| | | 4 | Th-Ar | | ↓ | 60s | |
| | | 5 | SKY-EVE | 4 hrs. W | +20° | 2m | (Note: 25199.2 line on Right still has strong persistence.) |
| | | 6 | Th-Ar | | ↑ | 60s | |
| | | 7 | Th-Ar | | ↓ | 60s | |
| | | 8 | H 146051 | 16:11:43 | -03:34:01 | 2.5m | 2.7 IAU standard ND = 1.0 |
| | | 9 | Th-Ar | | ↑ | 60s | |
| | | 10 | Th-Ar | | ↓ | 60s | |
| | | 11 | GL 699 | 17:55:23 | 04:33:18 | 13m | 9.5 Nearby: Space Motion |
| | | 12 | Th-Ar | | ↑ | 60s | |
| | | 13 | Th-Ar | | ↓ | 60s | |
| | | 14 | G 139-49 | 17:34:18 | 02:52:12 | 10m | 10.7/15 HALOS |
| | | 15 | Th-Ar | | ↑ | 60s | |
| | | 16 | Th-Ar | | ↓ | 60s | |
| | | 17 | 11-1223 | 18:48:19 | -06:18:30 | 20m | 11.4 M11 Binary/Mathieu |
| | | 18 | Th-Ar | | ↑ | 60s | |
| | | 19 | 11-926 | 18:48:26 | -06:20:02 | 14m | 11.1 " |
| | | 20 | Th-Ar | | ↓ | 60s | |
| | | 21 | 11-916 | 18:48:17 | -06:21:01 | 13m | 11.0 " |
| | | 22 | Th-Ar | | ↑ | 60s | |
| | | 23 | Th-Ar | | ↓ | 60s | |
| | | 24 | (2) | 20:00:38 | 13:15:54 | 5m | 10.0 Asteroid |
| | | 25 | Th-Ar | | ↑ | 60s | |
| | | 26 | Th-Ar | | ↓ | 60s | |
| | | 27 | CI-Cyg | 19:48:21 | 35:33:24 | 18m | 11.0 Keaton/Symbiotics |
| | | 28 | Th-Ar | | ↑ | 60s | |
| | | 29 | Th-Ar | | ↓ | 60s | |
| | | 30 | G 142-44 | 17:36:38 | 16:18:48 | 15.5m | 11.2/30 HALOS |
| | | 31 | Th-Ar | | ↑ | 60s | |
| | | 32 | / | | | | |

TO CAM 5/17/88

Spectrograph ECHELLE Intensified Reticon
 Log Sheet
 Grating 300L Observer RPS & JRC
 Telescope 61" Wyeth Date 19-20 Aug. 1988 Disk ORD 2255

| Change.... | File | ID | RA | 1950.0 Dec | L/R +/- | Exposure | Comments |
|------------|----------|----------|-----------|---------------|------------|-----------------|----------------------|
| | | THR | | | ↓ | 60s | 2.51678 |
| | G92-19 | 19 36 38 | -02 43 30 | | | 8 ^m | 15 Halos 10.3/15 |
| | | THR | | | ↑ | 60s | |
| | | THR | | | ↓ | 60s | |
| | G23-14 | 19 49 22 | 05 29 12 | | | 12 ^m | 15 HALOS 10.73/20 |
| | | THR | | | ↑ | 60s | |
| | | THR | | | ↓ | 60s | |
| | -2316310 | 20 29 05 | -23 42 48 | | | 20 ^m | 15 Halos 10.39/30 |
| | | THR | | | ↑ | 60s | |
| | | THR | | | ↓ | 60s | |
| | -176036 | 20 34 27 | -16 44 30 | | | 20 ^m | 15 Halos 10.52/50 |
| | | THR | | | ↑ | 60s | |
| | -176036 | 20 34 27 | -16 44 30 | | | 12 ^m | 15 Halos 10.52/50 |
| | | THR | | | ↑ | 60s | |
| | | THR | | | ↓ | 60s | |
| | F144-33 | 20 41 59 | 21 43 24 | | | 5 ^m | 15 HALOS 10.09/15 |
| | | THR | | | ↑ | 60s | |
| | | THR | | | ↓ | 60s | |
| | F187-18 | 21 00 59 | 29 17 12 | | | 4 ^m | 15 HALOS 10.19/15 |
| | | THR | | | ↑ | 60s | |
| | | THR | | | ↓ | 60s | |
| | G187-30 | 21 09 12 | 33 19 06 | | | 20 ^m | 15 Halos 11.54/15 |
| | | THR | | | ↑ | 60s | |
| | | THR | | | ↓ | 60s | |
| | G212-28 | 21 09 23 | 45 15 12 | | | 2 ^m | 15 Halos 7.83/50 |
| | | THR | | | ↑ | 60s | |
| | | THR | | | ↓ | 60s | |
| | F187-40 | 21 19 46 | 27 14 18 | | | 15 ^m | 15 Halos 10.51/30 |
| | | THR | | | ↑ | 60s | |
| | | THR | | | ↓ | 60s | |
| | G212-39 | 21 27 54 | 45 40 12 | | | 2 ^m | 15 Halos 7.92/20 |
| | | THR | | | ↑ | 60s | |

8/20/88

Spectrograph ECHELLE Intensified Reticon TO CAMI
 Grating 3002 Log Sheet RAW/RET
 Telescope 61" Walth Date Aug 19-20 1988 Observer JRC
 Disk 020 2257

| Change.... | File | ID | RA | Dec | L/R +/- | Exposure | Comments |
|--------------------|---------|----|--------------|-----------|------------|----------|--------------------------------------|
| | | 1 | | | ↓ | 60s | 25187A |
| | G53-34 | | 04 45 46 | 18 37 36 | | 2m | 15 HALOS 9.69/15 |
| | | 3 | | | ↑ | 60s | |
| | | 4 | | | ↓ | 60s | |
| | G5-42 | | 03 28 22 | 20 36 00 | | 2m | 15 HALOS 8.14/15 |
| | | 6 | | | ↑ | 60s | |
| | | 7 | | | ↓ | 60s | |
| | SKYDWE | | 4hrs East | +20° | | 2m | 16 SKY |
| | | 9 | | | ↑ | 60s | |
| | | 10 | | | ↓ | 60s | |
| | SKYDWNM | | 0hrs | +20° | | 2m | 16 SKY |
| | | 12 | | | ↑ | 60s | |
| | INCANS | | | | | 120m | |
| | INCANDS | | | | | 120m | |
| 20-21 Aug. 1988 | | 15 | | | ↓ | 60s | |
| | SKY-EVE | | φ hrs. | +36° | | 2m | |
| | | 17 | | | ↑ | 60s | |
| | | 18 | | | ↓ | 60s | |
| | SKY-EVE | | 4 1/2 hrs. W | +30° | | 2m | |
| | | 20 | | | ↑ | 60s | |
| | | 21 | | | ↓ | 60s | |
| | H146051 | | 16:11:43 | -03:34:01 | | 2.5m | 2.7 IAU standard ND 1.φ |
| | | 23 | | | ↑ | 60s | |
| | | 24 | | | ↓ | 60s | |
| | 171244 | | 18:30:44 | 24:38:28 | | 7m | 7.7/250 Fstars |
| | | 26 | | | ↑ | 60s | |
| | | 27 | | | ↓ | 60s | |
| | W Ser | | 18:06:50 | -15:33:36 | | 15m | 9.0/100's Eclipping Binaries/Fstars. |
| | | 29 | | | ↑ | 60s | |
| | | 30 | | | | | |
| | | 31 | | | | | |
| | | 32 | | | | | |

8/20/88

Intensified Reticon TO CAMI
 Spectrograph ECHELLE Log Sheet RAW/RET
 Grating 300L Observer RPS
 Telescope 61" Wyeath Date 20-21 Aug. 1988 Disk ORO 22.58

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|------|----|--------------|----------|------------|----------|------------------------------------|
| | | 1 | | | ↓ | 60s | |
| | | 2 | G21-20 | 18:35:15 | -06:50:30 | 3m | 8.3/15 Halos |
| | | 3 | Th-Ar | | ↑ | 60s | |
| | | 4 | Th-Ar | | ↓ | 60s | |
| | | 5 | G22-7 | 18:53:13 | -05:48:24 | 2m | 7.5/15 Halos |
| | | 6 | Th-Ar | | ↑ | 60s | |
| | | 7 | Th-Ar | | ↓ | 60s | |
| | | 8 | G142-2 | 18:59:36 | 15:59:36 | 4m | 10.4/15 " |
| | | 9 | Th-Ar | | ↑ | 60s | |
| | | 10 | Th-Ar | | ↓ | 60s | |
| | | 11 | G20-23 | 18:03:50 | 02:03:00 | 9.5m | 11.3/15 " (Not a bad night!!!) |
| | | 12 | Th-Ar | | ↑ | 60s | (for OAK RIDGE) |
| | | 13 | Th-Ar | | ↓ | 60s | 3" seeing |
| | | 14 | G140-44 | 18:09:14 | 14:54:06 | 13m | 11.5/15 " (Re-installed "Liller's" |
| | | 15 | Th-Ar | | ↑ | 60s | fan at start of Run - |
| | | 16 | Th-Ar | | ↓ | 60s | it appears to improve |
| | | 17 | G21-12 | 18:21:07 | -05:10:30 | 20m | 11.1/15 " seeing by 1-2") |
| | | 18 | Th-Ar | | ↑ | 60s | |
| | | 19 | Th-Ar | | ↓ | 60s | |
| | | 20 | G22-13 | 19:01:06 | -02:20:30 | 20m | 11.2/15 " |
| | | 21 | Th-Ar | | ↑ | 60s | |
| | | 22 | Th-Ar | | ↓ | 60s | |
| | | 23 | G140-53 | 18:15:25 | 05:25:54 | 13m | 10.9/15 " |
| | | 24 | Th-Ar | | ↑ | 60s | |
| | | 25 | Th-Ar | | ↓ | 60s | |
| | | 26 | G140-46 | 18:09:56 | 05:23:36 | 7m | 10.4/15 " |
| | | 27 | Th-Ar | | ↑ | 60s | |
| | | 28 | Th-Ar | | ↓ | 60s | |
| | | 29 | G162-43 | 18:09:47 | 32:10:10 | 11m | 11.1/15 " |
| | | 30 | Th-Ar | | ↑ | 60s | |
| | | 31 | / | | | | |
| | | 32 | / | | | | |

TO CAM 8/20/88

Intensified Reticon
 Spectrograph ECHELLE
 Log Sheet
 Grating 300L
 Observer RPS
 Telescope 61" Wyeth Date 20-21 Aug. 1988 Disk ORO 2259

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|---------|-------|--------------|-----------|------------|----------|------------------------------|
| | | Th-Ar | | | ↓ | 60S | |
| | G204-49 | | 18:10:59 | 40:32:42 | | 7.5m | 10.9/15 HALOS |
| | | Th-Ar | | | ↑ | 60S | |
| | | Th-Ar | | | ↓ | 60S | |
| | G204-47 | | 18:08:08 | 47:13:00 | | 15m | 12.0/15 HALOS |
| | | Th-Ar | | | ↑ | 60S | |
| | | Th-Ar | | | ↓ | 60S | |
| | G24-25 | | 20 34 42 | 00 22 42 | | 17m | 10.56/50 HALOS |
| | | Th-Ar | | | ↑ | 60S | |
| | | Th-Ar | | | ↓ | 60S | |
| | G26-1 | | 21 24 08 | -08 36 48 | | 11m | 11.27/15 HALOS |
| | | Th-Ar | | | ↑ | 60S | |
| | | Th-Ar | | | ↓ | 60S | |
| | GLS 876 | | 22 50 35 | -14 31 12 | | 10m | Nearby & M-STARS 10.17/20 |
| | | Th-Ar | | | ↑ | 60S | |
| | | Th-Ar | | | ↓ | 60S | |
| | H212943 | | 27 25 30 | 04 26 39 | | 2m | 17 Ion STD 1.0 ND Filter 4.9 |
| | | Th-Ar | | | ↑ | 60S | |
| | | Th-Ar | | | ↓ | 60S | |
| | G18-55 | | 22 30 20 | 10 09 00 | | 2m | 15 HALOS 9.35/15 |
| | | Th-Ar | | | ↑ | 60S | |
| | | Th-Ar | | | ↓ | 60S | |
| | G27-33 | | 22 30 11 | -06 12 42 | | 14m | 15 HALOS 11.53/15 |
| | | Th-Ar | | | ↕ | 60S | |
| | G156-24 | | 22 33 07 | -08 07 36 | | 20m | 15 HALOS 11.27/15 |
| | | Th-Ar | | | ↑ | 60S | |
| | | Th-Ar | | | ↓ | 60S | |
| | G128-45 | | 23 15 33 | 31 15 30 | | 13m | 15 Halos 11.73/15 |
| | | Th-Ar | | | ↑ | 60S | |
| | | Th-Ar | | | ↓ | 60S | |
| | G130-10 | | 23 43 38 | 34 58 12 | | 9m | 15 Halos 9.13/20 |
| | | Th-Ar | | | ↑ | 60S | |

8/21/88

TO CAM

Spectrograph ECHELLE

Intensified Reticon

Grating 300L

Log Sheet

RAW RET

Telescope 61" Wymeta

Date 20-21 Aug 1988

Observer JRC

Disk ORO 2261

| Change.... | File | ID | RA | Dec | L/R ↑/↓ | Exposure | Comments |
|-------------------|------|----|-----------|------------|------------|----------|-----------------------------------|
| | | 1 | | | ↓ | 60s | λ 5187 Å |
| | | 2 | SKYDOWNM | Meridian | +20° | 2 M | 16 SKY |
| | | 3 | Th-Ar | | | 60s | |
| | | 4 | INCAUS | | | 120M | |
| | | 5 | INCAUS | | | 120m | Great Night! |
| | | 6 | INCAUS | | | 100m | |
| 21-22 Aug 1988 | | 7 | Th-Ar | | ↓ | 60s | |
| | | 8 | SKYEVE M | Ohis | +20° | 2 M | 16 SKY |
| | | 9 | Th-Ar | | ↑ | 60s | |
| | | 10 | Th-Ar | | ↓ | 60s | |
| | | 11 | SKYEVE W | 4 hrs West | +20° | 3 M | 16 SKY |
| | | 12 | Th-Ar | | ↑ | 60s | |
| | | 13 | Th-Ar | | ↓ | 60s | |
| | | 14 | H192572 | 19:22:35 | 11:50:09 | 3.0m | 5.2 IAU standard |
| | | 15 | Th-Ar | | ↑ | 60s | |
| | | 16 | Th-Ar | | ↓ | 60s | |
| | | 17 | 170544 | 18:27:12 | 11:52:41 | 17.5m | 7.9/300 F stars |
| | | 18 | Th-Ar | | ↑ | 60s | |
| | | 19 | Th-Ar | | ↓ | 60s | |
| | | 20 | 1E1848 | 18:48:10 | 33:05:30 | 18.5m | 103/30 Marschall |
| | | 21 | Th-Ar | | ↑ | 60s | |
| | | 22 | Th-Ar | | ↓ | 60s | (Presumably's highdash - |
| | | 23 | GRS 623 | 16:22:39 | 48:28:24 | 18m | 10.3/20 MCP D-connector cleaned - |
| | | 24 | Th-Ar | | ↑ | 60s | M# much better) |
| | | 25 | Th-Ar | | ↓ | 60s | (Still occasionally get |
| | | 26 | H14284 | 16:00:57 | 58:41:59 | 2m | 4.1/20 M# random "bright" events |
| | | 27 | Th-Ar | | ↑ | 60s | about 6 pixels wide.) |
| | | 28 | Th-Ar | | ↓ | 60s | |
| | | 29 | GRS 616.2 | 16:15:59 | 55:23:48 | 14.5m | 10.0/20 M# |
| | | 30 | Th-Ar | | ↑ | 60s | |
| | | 31 | / | | | | |
| | | 32 | / | | | | |

8/22/88

Spectrograph ECHELLE Intensified Reticon TO CAM
 Grating 500X Log Sheet RAW/RET
 Telescope 61" Wyeth Date 21-22 Aug 1988 Observer JRLA JMZ
 Disk 020 2264

| Change.... | File | ID | RA | 1950.0 Dec | L/R ↑/↓ | Exposure | Comments |
|-------------------|---------|----------|-----------|---------------|------------|------------------|--------------------------------|
| | | ThAr | | | ↓ | 60s | λ 5187 Å |
| | G158-21 | 23 58 25 | -05 12 36 | | | 3 ^m | 15 HALOS 8.59/16 |
| | ThAr | | | | ↑ | 60s | |
| | ThAr | | | | ↓ | 60s | |
| | G69-1 | 00 29 55 | 27 55 18 | | | 10 ^m | 15 HALOS 8.72/100 |
| | ThAr | | | | ↑ | 60s | |
| | ThAr | | | | ↓ | 60s | |
| | G73-30 | 00 58 27 | 16 06 18 | | | 17 ^m | 15 HALOS 10.65/30 |
| | ThAr | | | | ↑ | 60s | |
| | ThAr | | | | ↓ | 60s | |
| | G71-27 | 01 39 22 | 01 39 00 | | | 5 ^m | 15 HALOS 8.88/20 |
| | ThAr | | | | ↑ | 60s | (Telescope broke down 4:30 am) |
| | INCANS | | | | | 120 ^m | |
| | INCANDS | | | | | 120 ^m | |
| 8/22-23/88 JMZ | ThAr | | | | ↓ | 60s | λ = 5187 Å clear |
| | SKYEVEN | Ø hrs. | +30° | | | 2 ^m | 16 sky |
| | ThAr | | | | ↑ | 60s | DISCRIMINATOR = 2.8 |
| | ThAr | | | | ↓ | 60s | |
| | SKYEVEN | 1/4 West | +30° | | | 2 ^m | 16 sky |
| | ThAr | | | | ↑ | 60s | |
| | ThAr | | | | ↓ | 60s | |
| | H146051 | 16:11:43 | -3:34:09 | | | 2 ^m | 2.7 IAU STANDARD |
| | ThAr | | | | ↑ | 60s | |
| | ThAr | | | | ↓ | 60s | |
| | H156104 | 17:12:22 | -14:26:46 | | | 2 ^m | 3.1 IAU STANDARD |
| | ThAr | | | | ↑ | 60s | |
| | ThAr | | | | ↓ | 60s | |
| | S482651 | 13:03:56 | 22:53:10 | | | 2 ^m | 5.9/20 M STARS (43) |
| | ThAr | | | | ↑ | 60s | |
| | / | | | | | / | |
| | / | | | | | / | |
| | / | | | | | / | |

8/22/88

Intensified Reticon TO CAMI
 Spectrograph ECHELLE Log Sheet RAW RET
 Grating 300f Observer JMZ
 Telescope 61" WYETH Date 8/22-23/88 Disk ORO 2265

| Change.... | File | ID | RA | Dec | 1950.0 L/R ↑/↓ | Exposure | Comments |
|------------|------|---------|----------|----------|----------------------|----------|-------------------------------------|
| | | ThAr | | | ↓ | 60s | λ = 5187Å clear |
| | | G1s 499 | 13:03:49 | 20:59:46 | | 7.5m | 9.4/20 METARS (42) |
| | | ThAr | | | ↑ | 60s | ← watch for 210% sky |
| | | ThAr | | | ↓ | 60s | |
| | | G165-22 | 13:35:51 | 39:26:00 | | 2m | 7.78/15 HALOS (931) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | | Z LAC | 22:38:53 | 56:34:05 | | 3M | 8.9 CEPHEIDS (9) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | | G6860A | 22:26:13 | 57:26:48 | | 10M | 9.85 METARS NEARBY (31) |
| | | ThAr | | | ↑↓ | 60s | ↓ resolved! watch for CONTAMINATION |
| | | G6860B | 22:26:13 | 57:26:48 | | 20m | 11.3 SPACE NEARBY (32) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | | G217-8 | 23:24:15 | 60:21:06 | | 20m | 10.49/60 HALOS (1517) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | | Z AND | 23:31:15 | 48:37:32 | | 20m | 10.0 SYMBIOTICS (12) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | | DL CAS | 00:27:11 | 59:56:12 | | 4m | 10.6 CEPHEIDS (1) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | | G24-18F | 20:28:43 | 5:02:48 | | 5m | 8.75 HALOS (1305) |
| | | ThAr | | | ↑ | 60s | ← G24-18F CONTAMINATED |
| | | ThAr | | | ↓ | 60s | |
| | | AX Per | 1:33:06 | 54:00:19 | | 10m | 11.0 SYMBIOTICS (2) |
| | | ThAr | | | ↑ | 60s | |
| | | / | | | | / | |
| | | / | | | | / | |
| | | / | | | | / | |

8/22/88

Intensified Reticon TO CAMI
 Spectrograph ECHELLE Log Sheet RAW/RET
 Grating 300l Observer JME
 Telescope 61" WYETH Date 8/22-23/88 Disk 070 2267

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|---------|------|--------------|----------|------------|----------|----------------------------------|
| 24 | | ThAr | | | ↓ | 60s | $\lambda = 5187\text{\AA}$ CLEAR |
| | G158-11 | | 23:54:11 | -7:07:36 | | 20m | 10.69/15 HALOS (1560) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | S127114 | | 21:48:59 | 00:32:09 | | 2m | 6.9/20 M STARS (80) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G15846 | | 21:59:38 | 01:09:20 | | 10m | 9.2/20 M STARS (81) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G157-21 | | 23:06:29 | -2:49:18 | | 9m | 9.27/20 HALOS (1788) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | S165532 | | 23:07:48 | 73:39:34 | | 5m | 8.41/100 HALOS (1492) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G29-25 | | 23:19:46 | 11:53:06 | | 15m | 10.82/15 HALOS (1512) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | TV (cc) | | 3:17:03 | 2:34:11 | | 10m | 8.6 F STARS (691) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G15154 | | 3:43:19 | 26:03:42 | | 8m | 9.6/20 M STARS (11) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | S076706 | | 3:45:07 | 24:50:08 | | 2m | 6.8/20 M STARS (17) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G80-15 | | 3:37:50 | -3:22:30 | | 2m | 6.67/20 HALOS (295) |
| | | ThAr | | | ↑ | 60s | |
| | | / | | | | / | |
| | | / | | | | / | |

TO CAM 8/25/88

Spectrograph ECHELLE Intensified Reticon
 Log Sheet

Grating 3004 Observer JMZ

Telescope 61" WYFIM Date 8/22-23/88 Disk 0120 2268

| Change.... | File | ID | RA | 1950.0 Dec | L/R ↑/↓ | Exposure | Comments |
|------------|------|----|---------|---------------|------------|----------|----------------------|
| | | 1 | ThAr | | ↓ | 60s | 2 = 5187 Å clear |
| | | 2 | H22484 | 3:34:19 | 00:14:40 | 2m | 4.4 JAV STANDARD |
| | | 3 | ThAr | | ↑ | 60s | |
| | | 4 | ThAr | | ↓ | 60s | |
| | | 5 | SKYVIEW | 4h East | +30° | 2m | 16 SKY |
| | | 6 | ThAr | | ↑ | 60s | |
| | | 7 | ThAr | | ↓ | 60s | |
| | | 8 | SKYVIEW | 0 hrs | +30° | 2m | 16 SKY |
| | | 9 | ThAr | | ↑ | 60s | |
| | | 10 | INCANDS | | | 120m | |
| | | 11 | INCANDS | | | 120m | |
| 8/23-24/88 | JMZ | 12 | ThAr | | ↓ | 60s | 2 = 5187 Å OUCRCAST |
| | | 13 | SKYVIEW | 0 hrs | +20° | 2m | 16 SKY |
| | | 14 | ThAr | | ↑ | 60s | |
| | | 15 | ThAr | | ↓ | 60s | |
| | | 16 | SKYVIEW | 4h West | +20° | 2m | 16 SKY |
| | | 17 | ThAr | | ↑ | 60s | |
| | | 18 | ThAr | | ↓ | 60s | |
| | | 19 | H15604 | 17:12:22 | 14:26:46 | 2m | 3.1 JAV STANDARD |
| | | 20 | ThAr | | ↑ | 60s | ~ clouds ~ |
| | | 21 | ThAr | | ↓ | 60s | |
| | | 22 | G15820A | 21:04:54 | 38:32:00 | 2m | 5.2/20 M STARS (75) |
| | | 23 | ThAr | | ↑ | 60s | |
| | | 24 | G15820B | 21:04:55 | 38:32:00 | 4m | 6.0/20 M STARS (76) |
| | | 25 | ThAr | | ↑ | 60s | clouds |
| 8-25/26 | 1988 | 26 | ThAr | | ↓ | 60s | SKY TOO POOR TO CONT |
| | | 27 | SKYVIEW | 0 hrs | +20° | 3m | 16 SKY |
| | | 28 | ThAr | | ↑ | 60s | |
| | | 29 | ThAr | | ↓ | 60s | |
| | | 30 | SKYVIEW | 4 hrs West | +20° | 3m | 16 SKY |
| | | 31 | ThAr | | ↑ | 60s | |
| | | 32 | | | | | |

TO CAM 8/26/88

Spectrograph ECHELLE Intensified Reticon
 Grating 300L Log Sheet RAW RET
 Telescope 61" Wyeth Date Aug 25/26 1988 Observer JRC
 Disk 020 2270

| Change.... | File | ID | RA | 1950.0 Dec | L/R ↑/↓ | Exposure | Comments |
|-----------------|------|----------|-----------|---------------|------------|----------|--------------------------------------------------------|
| | | TMR | | | ↓ | 60s | λ 5157 Å |
| | | 220285 | 23 19 54 | 41 02 22 | | 20m | 40 FSTARS 8.19/400 |
| | | TMR | | | ↕ | 60s | |
| | | 220285 | " | " | | 20m | " (added out) " " |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | | SKY DUNE | 4hrs East | +20° | | 2.5m | 16 SKY |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | | SKYDOWNM | 0hrs | +20° | | 2.5m | 16 SKY |
| | | TMR | | | ↑ | 60s | |
| | | INCANS | | | | 120m | |
| | | INCANS | | | | 120m | |
| 8-26-27 1988 | | TMR | | | ↓ | 60s | λ 5157 Å |
| | | SKYEVEM | 0hrs | +20° | | 2m | 16 SKY (overcast) |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | | SKYEVEM | 4hrs west | +20° | | 2m | 16 SKY |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | | H182572 | 19 22 35 | 11 50 09 | | 2m | 17 IAUSTDS 5.2 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | MOON BRIGHT - SKY LGS = 10-12 |
| | | SV Vul | 19 47 28 | 27:19:53 | | 3m | 38 Cepheids 7.8 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | | 180539 | 19 14 43 | -18 00 43 | | 20m | 40 FSTARS ONLY got 100 CTS λ 5157 Å AT EXP 8.07/400 |
| | | TMR | | | ↑ | 60s | |
| | | TMR | | | ↓ | 60s | |
| | | 219612 | 23 14 16 | 54 55 00 | | 6m | 40 FSTARS 8.07/150 |
| | | TMR | | | ↑ | 60s | |

8/26/88

TO CAM1

Intensified Reticon

Spectrograph ECHELLE

Log Sheet

RAW RET

Grating 302

Observer JRC

Telescope 61" Wyeata

Date Aug 26/27 1988

Disk 020 2271

| Change.... | File | ID | RA | 1950.0 Dec | L/R +/- | Exposure | Comments |
|------------|---------|----------|----------|---------------|------------|------------------|-----------------------------------------------|
| | | TWR | | | ↓ | 60 ^s | λ 5157 |
| | G171-62 | 00 30 18 | 44 27 18 | | | 6 ^m | 15 HALOS 10.29/15 |
| | TWR | | | | ↑ | 60 ^s | |
| | TWR | | | | ↓ | 60 ^s | |
| | G171-64 | 00 31 44 | 47 38 24 | | | 2 ^m | 15 HALOS 7.39/15 |
| | TWR | | | | ↕ | 60 ^s | |
| | G172-16 | 00 35 48 | 47 21 24 | | | 13 ^m | 15 HALOS 10.97/15 |
| | TWR | | | | ↑ | 60 ^s | |
| | TWR | | | | ↓ | 60 ^s | |
| | G172-24 | 00 47 55 | 51 06 42 | | | 5 ^m | 15 HALOS 9.64/15 |
| | TWR | | | | ↑ | 60 ^s | |
| | TWR | | | | ↓ | 60 ^s | |
| | G243-63 | 01 06 30 | 61 16 48 | | | 5 ^m | 15 HALOS 7.72/100 |
| | TWR | | | | ↑ | 60 ^s | |
| | TWR | | | | ↓ | 60 ^s | |
| | G172-49 | 01 17 59 | 51 43 24 | | | 2 ^m | 15 HALOS 7.62/20 |
| | TWR | | | | ↑ | 60 ^s | |
| | TWR | | | | ↓ | 60 ^s | |
| | G172-58 | 01 28 13 | 47 44 54 | | | 14 ^m | 15 HALOS 10.17/30 |
| | TWR | | | | ↑ | 60 ^s | cloud out 12 pm - 1230 pm |
| | TWR | | | | ↓ | 60 ^s | |
| | 11119 | 01 47 09 | 27 12 57 | | | 9 ^m | 40 FSTARS 8.10/1 st obs |
| | TWR | | | | ↑ | 60 ^s | |
| | TWR | | | | ↓ | 60 ^s | |
| | 13704 | 02 11 25 | 30 29 30 | | | 5 ^m | 40 FSTARS 7.31/1 st obs |
| | TWR | | | | ↑ | 60 ^s | |
| | TWR | | | | ↓ | 60 ^s | |
| | HR1030 | 05 02 17 | 54 20 26 | | | 8 ^m | 40 FSTARS for bright star cat 7.2 |
| | TWR | | | | ↑ | 60 ^s | |
| | TWR | | | | ↓ | 60 ^s | |
| | 14562 | 02 18 48 | 08 35 56 | | | 9.5 ^m | 40 FSTARS (Tarn clds) 7.8/1 st obs |
| | TWR | | | | ↑ | 60 ^s | |

Full Moon ☾

TO CAM 8/21/88

Spectrograph ECHELLE Intensified Reticon
 Grating 3002 Log Sheet
 Telescope 61" Wyeth Date Aug 26-27 1988 Observer JRC
 Disk ORO 2272

| Change.... | File | ID | RA | Dec | 1950.0 | L/R | ↑/↓ | Exposure | Comments |
|-----------------|------|----|----------|-------------|-----------|-----|-----|------------------|--------------------------------------|
| | | 1 | | | | | ↓ | 60 ^s | 25187A |
| | | 2 | SKYDOWNE | +4 hrs East | +20° | | | 2 ^m | 16 SKY |
| | | 3 | TAr | | | | ↑ | 60 ^s | |
| | | 4 | TAr | | | | ↓ | 60 ^s | |
| | | 5 | SKYDWNM | Meridian | +20° | | | 2 ^m | 16 SKY |
| | | 6 | TAr | | | | ↑ | 60 ^s | |
| | | 7 | INLANDS | | | | | 120 ^m | |
| | | 8 | INLANDS | | | | | 120 ^m | |
| Aug 27-28, 1988 | | 9 | TAr | | | | ↓ | 60 ^s | Temp 70°F / 25187A |
| | | 10 | SKYEVEN | Meridian | +20° | | | 2 ^m | 16 SKY |
| | | 11 | TAr | | | | ↑ | 60 ^s | |
| | | 12 | TAr | | | | ↓ | 60 ^s | |
| | | 13 | SKYEVEN | +4 hrs West | +20° | | | 2 ^m | 16 SKY |
| | | 14 | TAr | | | | ↑ | 60 ^s | dk ct ≈ 1-4 |
| | | 15 | TAr | | | | ↓ | 60 ^s | (disc. problem see Log) |
| | | 16 | H156014 | 17 12 22 | 14 26 46 | | | 2 ^m | 17 FAN STD / 1.0 ND Filter 3.1 |
| | | 17 | TAr | | | | ↑ | 60 ^s | |
| | | 18 | TAr | | | | ↓ | 60 ^s | |
| | | 19 | G17-22 | 16 30 22 | 03 21 12 | | | 7 ^m | 15 HALOS 884/15 |
| | | 20 | TAr | | | | ↑ | 60 ^s | |
| | | 21 | TAr | | | | ↓ | 60 ^s | |
| | | 22 | G17-25 | 16 32 24 | -04 07 06 | | | 10 ^m | 15 HALOS 9.62/15 |
| | | 23 | TAr | | | | ↑ | 60 ^s | |
| | | 24 | TAr | | | | ↓ | 60 ^s | |
| | | 25 | 150017 | 16 36 53 | -07 24 48 | | | 20 ^m | 40 FSTARS 7.45/500 |
| | | 26 | TAr | | | | ↓ | 60 ^s | |
| | | 27 | 150017 | " | " | | | 20 ^m | " " (CLDs interfering) " " " |
| | | 28 | TAr | | | | ↑ | 60 ^s | |
| | | 29 | TAr | | | | ↓ | 60 ^s | |
| | | 30 | HR 6437 | 17 15 32 | 49 44 36 | | | 5 ^m | 40 fstars - for Bright star cat. 7.5 |
| | | 31 | TAr | | | | ↑ | 60 ^s | clded out |
| | | 32 | | | | | | | |

TO CAM 8/27/88

Spectrograph ECHELLE Intensified Reticon
 Log Sheet

Grating 300L Observer JRC

Telescope 61" Wymeta Date Aug 27-28 1988 Disk 020 2273

Change.... File ID RA 1950.0 Dec L/R Exposure Comments Sky cts ≈ 20 bright moon & fog

| Change.... | File | ID | RA 1950.0 | Dec | L/R | Exposure | Comments | Sky cts ≈ 20 | bright moon & fog |
|------------|---------|-----|-----------|-----------|-----|-----------------|----------------------------------|----------------------|--------------------------|
| | | TAR | | | ↓ | 60s | | | λ 5187 Å |
| | H 693 | | 00 06 43 | -15 49 33 | | 2 ^m | 17 TAN STDS | | 5.0 |
| | | TAR | | | ↑ | 60s | | | |
| | | TAR | | | ↓ | 60s | | | |
| | X C46 | | 20 41 27 | 35 24 24 | | 3 | 38 Cepheids | | 6.4 |
| | | TAR | | | ↑ | 60s | | | |
| | | TAR | | | ↓ | 60s | | | |
| | 200828 | | 21 02 18 | 54 08 38 | | 20 ^m | 40 FSTARS | | 7.64/500 |
| | | TAR | | | ↑ | 60s | | | |
| | 200826 | | " | " | | 20 ^m | " " | | " " |
| | | TAR | | | ↑ | 60s | | | |
| | | TAR | | | ↓ | 60s | | | |
| | H 1630 | | 05 02 17 | 54 20 26 | | 5 ^m | 40 FSTARS - for bright star cat. | | 7.2 |
| | | TAR | | | ↑ | 60s | | | |
| | | TAR | | | ↓ | 60s | | | |
| | (1) | | 00 18 22 | -14 59 18 | | 8 ^m | 17 Asteroids $\geq 10\%$ sky! | | |
| | | TAR | | | ↑ | 60s | | | |
| | | TAR | | | ↓ | 60s | | | |
| | 19649 | | 03 07 17 | 01 17 42 | | 10 ^m | 40 FSTARS | | 7.68/1 st obs |
| | | TAR | | | ↑ | 60s | | | |
| | | TAR | | | ↓ | 60s | | | |
| | 19759 | | 03 08 25 | 08 32 02 | | 16 ^m | 40 FSTARS | | 7.89/1 st obs |
| | | TAR | | | ↑ | 60s | | | |
| | | TAR | | | ↓ | 60s | | | |
| | 26757 | | 04 10 55 | -23 15 12 | | 15 ^m | 40 FSTARS | | 6.64/1 st obs |
| | | TAR | | | ↑ | 60s | | | |
| | | TAR | | | ↓ | 60s | | | |
| | 29819 | | 04 39 31 | 09 32 21 | | 12 ^m | 40 FSTARS | | 6.85/400 |
| | | TAR | | | ↑ | 60s | | | |
| | | TAR | | | ↓ | 60s | | | |
| | H 26162 | | 04 06 15 | 19 28 43 | | " | 17 TAN STDS | | 5.5/ |
| | | TAR | | | ↑ | 60s | | | |

8/30/88

Spectrograph ECHELLE Intensified Reticon TO CAM
 Grating 3002 Log Sheet RAW/RET
 Telescope 61" Wynth Date Aug 27-28 1988 Observer JRC, RPS, JM?
 Disk 020 2274

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|--------------------------|------|----|--------------|----------|------------|----------|---------------------|
| | | 1 | | | ↓ | 60s | λ 5167 Å |
| | | 2 | | +20° | | 2m | 16 SKY |
| | | 3 | | | ↑ | 60s | |
| | | 4 | | | ↓ | 60s | |
| | | 5 | | +20° | | 2m | 16 SKY |
| | | 6 | | | ↑ | 60s | |
| | | 7 | | | | 120m | |
| | | 8 | | | | 120m | |
| 28-29 Aug. 1988 | | 9 | | | ↓ | 60s | - cloudy - |
| | | 10 | | +30° | | 2m | |
| | | 11 | | | ↑ | 60s | |
| | | 12 | | | ↓ | 60s | |
| | | 13 | | +30° | | 2.5m | |
| | | 14 | | | ↑ | 60s | |
| | | 15 | | | ↓ | 60s | |
| | | 16 | 17:12:22 | 14:26:40 | | 5m | 3.1 IAU standard |
| | | 17 | | | ↑ | 60s | - light rain - |
| 30-31 Aug 1988 JM2 | | 18 | | | ↓ | 60s | λ = 5187 Å P. cloud |
| | | 19 | | +30° | | 2m | 16 sky |
| | | 20 | | | ↑ | 60s | |
| | | 21 | | | ↓ | 60s | |
| | | 22 | | +30° | | 2m | 16 sky |
| | | 23 | | | ↑ | 60s | |
| | | 24 | | | ↓ | 60s | |
| | | 25 | 16:11:43 | 13:34:01 | | 2m | 2.7 IAU STANDARDS |
| | | 26 | | | ↑ | 60s | |
| | | 27 | | | ↓ | 60s | |
| | | 28 | 15:16:45 | 11:57:12 | | 2m | 5.1 IAU STANDARD |
| | | 29 | | | ↑ | 60s | |
| | | 30 | | | | | |
| | | 31 | | | | | |
| | | 32 | | | | | |

8/30/88

Intensified Reticon

TO CAM

Spectrograph ECHELLE

Log Sheet

RAW RET

Grating 300l

Observer J.M.Z

Telescope 61" WYETH Date 8/30-31/88

Disk 0120 2275

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|---------|----|--------------|-----------|------------|----------|--------------------------------------|
| | | 1 | | | ↓ | 60s | $\lambda = 5187\text{\AA}$ P. cloudy |
| | S124835 | 2 | 19:33:44 | 5:53:45 | | 3M | 6.9/20 M STARS (72) |
| | | 3 | | | ↑↓ | 60s | |
| | G1s 763 | 4 | 19:37:10 | 4:28:16 | | 4M | 9.4/20 " (71) |
| | | 5 | | | ↑ | 60s | |
| | | 6 | | | ↓ | 60s | |
| | G22-7 | 7 | 18:53:13 | -5:48:24 | | 2.5M | 7.5/15 H/ALOS (1779) |
| | | 8 | | | ↑ | 60s | |
| | | 9 | | | ↓ | 60s | |
| | F71-70 | 10 | 18:35:15 | -6:50:30 | | 4M | 8.3/15 H/ALOS (1213) |
| | | 11 | | | ↑ | 60s | |
| | | 12 | | | ↓ | 60s | |
| | S164461 | 13 | 21:29:39 | -12:29:21 | | 5M | 6.9/20 M STARS (79) |
| | | 14 | | | ↑↓ | 60s | |
| | G1s 830 | 15 | 21:27:19 | 72:43:46 | | 10M | 9.1/20 " (78) |
| | | 16 | | | ↑ | 60s | |
| | | 17 | | | ↓ | 60s | |
| | S127114 | 18 | 21:48:59 | 00:32:29 | | 2M | 6.9/20 M STARS (80) |
| | | 19 | | | ↑ | 60s | |
| | | 20 | | | ↓ | 60s | |
| | G1s 846 | 21 | 21:59:38 | 01:09:30 | | 6M | 9.2/20 M STARS (81) |
| | | 22 | | | ↑ | 60s | |
| | | 23 | | | ↓ | 60s | |
| | 156-48E | 24 | 22:45:15 | -4:29:20 | | 2.5M | 6.6/15 H/ALOS (1468) |
| | | 25 | | | ↑ | 60s | |
| | | 26 | | | ↓ | 60s | |
| | (18) | 27 | 22:52:15 | -10:51:00 | | 4M | 10.4 ASTEROIDS (18) |
| | | 28 | | | ↑ | 60s | seems much brighter! |
| | | 29 | | | ↓ | 60s | |
| | H213014 | 30 | 22:25:46 | 17:40:28 | | 2M | 7.7 IAU STANDARDS |
| | | 31 | | | ↑ | 60s | |
| | | 32 | | | / | / | |

8/30/88

Intensified Reticon
TO CAM1

Spectrograph ECHELLE Log Sheet RAW/RET

Grating 300 Observer JMZ

Telescope 61" WYETH Date 8/30-31/88 Disk 0120 2276

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|---------|------|--------------|----------|------------|----------|-----------------------|
| | | 74Ar | | | ↓ | 60s | λ=5187Å clears |
| | SV VUL | | 19:49:28 | 27:19:53 | | 3M | 7.8 CEPHEIDS (1) |
| | | 74Ar | | | ↑ | 60s | |
| | | 74Ar | | | ↓ | 60s | |
| | Z Lac | | 22:38:53 | 56:34:05 | | 4M | 8.7 CEPHEIDS (9) |
| | | 74Ar | | | ↑ | 60s | |
| | | 74Ar | | | ↓ | 60s | |
| | G1s 809 | | 20:52:18 | 61:58:30 | | 6.5m | 8.5/20 M STARS (74) |
| | | 74Ar | | | ↑ | 60s | |
| | | 74Ar | | | ↓ | 60s | |
| | G262-37 | | 21:13:57 | 62:37:48 | | 4M | 9.5/20 HALOS (1357) |
| | | 74Ar | | | ↑ | 60s | |
| | | 74Ar | | | ↓ | 60s | |
| | G231-52 | | 21:37:51 | 60:03:12 | | 12M | 10.34/30 HALOS (137E) |
| | | 74Ar | | | ↑ | 60s | |
| | | 74Ar | | | ↓ | 60s | |
| | G264-15 | | 21:54:59 | 61:29:05 | | 2M | 9.8/20 HALOS (137B) |
| | | 74Ar | | | ↑ | 60s | |
| | | 74Ar | | | ↓ | 60s | |
| | Sφ76206 | | 3:45:07 | 24:50:08 | | 2M | 6.8/20 M STARS (12) |
| | | 74Ar | | | ↑↓ | 60s | |
| | G1s 154 | | 3:43:19 | 26:03:42 | | 5M | 9.6/20 M STARS (11) |
| | | 74Ar | | | ↑ | 60s | |
| | | 74Ar | | | ↓ | 60s | |
| | Sφ76588 | | 4:20:44 | 22:50:59 | | 2M | 7.2/20 M STARS (15) |
| | | 74Ar | | | ↑↓ | 60s | |
| | G1s 169 | | 4:26:02 | 21:48:47 | | 2M | 8.3/20 M STARS (16) |
| | | 74Ar | | | ↑ | 60s | |
| | | 74Ar | | | ↓ | 60s | |
| | UVAr | | 5:18:33 | 32:27:48 | | 3M | 10.0 Symbiotics (3) |
| | | 74Ar | | | ↑ | 60s | ↳ watch for sky |
| | | / | | | | / | |

8/31/88

Spectrograph ECHELLE Intensified Reticon TO CAM
 Grating 300 λ Log Sheet RAW/RET
 Telescope 61" WYETH Date 8/30, 8/31, 9/1 Observer JMZ
 Disk 070 2277
 1988

| Change.... | File | ID | RA | Dec | 1950.0 | L/R | Exposure | Comments |
|------------|------|----|---------|---------------------|----------|-----------------------|----------|-----------------------------------------|
| | | | | | | \uparrow/\downarrow | | |
| | | 1 | ThAr | | | \downarrow | 60s | $\lambda = 5187\text{\AA}$ mostly clear |
| | | 2 | H26162 | 4:06:15 | 19:28:43 | | 2M | 17 IAU STANDARDS |
| | | 3 | ThAr | | | \uparrow | 60s | |
| | | 4 | ThAr | | | \downarrow | 60s | |
| | | 5 | SKYDOME | 4 ^h East | +30° | | 2M | 16 SKY |
| | | 6 | ThAr | | | \uparrow | 60s | |
| | | 7 | ThAr | | | \downarrow | 60s | |
| | | 8 | SKYDOME | Meridian | +30° | | 2M | 16 SKY |
| | | 9 | ThAr | | | \uparrow | 60s | |
| | | 10 | INCANDS | | | | 120m | |
| | | 11 | INCANDS | | | | 120m | |
| 8/31-9/1 | | 12 | ThAr | | | \downarrow | 60s | $\lambda = 5187\text{\AA}$ P. cloudy |
| 1988 | | 13 | SKYVIEW | Meridian | +30° | | 2M | 16 SKY |
| JMZ | | 14 | ThAr | | | \uparrow | 60s | |
| | | 15 | ThAr | | | \downarrow | 60s | |
| | | 16 | SKYVIEW | 4 ^h West | +30° | | 2M | 16 SKY |
| | | 17 | ThAr | | | \uparrow | 60s | |
| | | 18 | ThAr | | | \downarrow | 60s | |
| | | 19 | H146051 | 16:11:43 | -3:31:01 | | 2M | 7.7 IAU STANDARDS |
| | | 20 | ThAr | | | \uparrow | 60s | |
| | | 21 | ThAr | | | \downarrow | 60s | |
| | | 22 | H136202 | 15:16:45 | 1:57:12 | | 2M | 5.1 IAU STANDARDS |
| | | 23 | ThAr | | | \uparrow | 60s | |
| | | 24 | ThAr | | | \downarrow | 60s | |
| | | 25 | G212-18 | 21:01:17 | 44:36:24 | | 2M | 9.13/15 Halos (1343) |
| | | 26 | ThAr | | | \uparrow | 60s | |
| | | 27 | ThAr | | | \downarrow | 60s | |
| | | 28 | G205-42 | 18:52:44 | 42:55:10 | | | 9.96/30 Halos (1228) |
| | | 29 | ThAr | | | \uparrow | 60s | |
| | | 30 | / | | | | | |
| | | 31 | / | | | | | |
| | | 32 | / | | | | | |

8/31/88

Intensified Reticon

TO CAM

Spectrograph ECHELLE

Log Sheet

RAW/RET

Grating 3000

Observer JMZ

Telescope 61" WYKILL

Date 8/31-9/1, 1988

Disk 000 2278

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|---------|------|--------------|-----------|------------|----------|-----------------------|
| | | ThAr | | | ↓ | 60s | λ=5187Å PARTLY cloudy |
| | 1E1037 | | 19:37:05 | 30:27:58 | | 8.25M | 9.5/30 LARRY #7 |
| | | ThAr | | | ↑ | 60s | ↑ stopped by clouds |
| | | ThAr | | | ↓ | 60s | MARGINAL SPECTRA |
| | 1F1848 | | 18:48:10 | 33:05:30 | | 20M | 10.3/30 LARRY (4) |
| | | ThAr | | | ↑ | 60s | - RAIN - |
| | | ThAr | | | ↓ | 60s | |
| | (2) | | 19:54:31 | 10:54:31 | | 5M | 9.9 ASTEROIDS |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | H212943 | | 22:25:20 | 4:26:39 | | 2M | 4.9 IAU STARS (8) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | 615876 | | 22:50:35 | -14:31:12 | | 15M | 10.2/20 M STARS (83) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | S147079 | | 00:03:14 | -19:56:36 | | 6M | 9.67/15 HALOS (7) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | S166160 | | 00:13:44 | -22:51:18 | | 5M | 9.58/15 HALOS (16) |
| | | ThAr | | | ↑ | 60s | ← ? |
| | | ThAr | | | ↓ | 60s | |
| | S166375 | | 00:32:21 | 22:09:24 | | 6.5M | 9.76/15 HALOS (39) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | S129772 | | 2:12:09 | -1:25:59 | | 3M | 9.09/20 HALOS (140) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G73-57 | | 2:23:23 | 5:33:12 | | 2M | 7.95/15 HALOS (212) |
| | | ThAr | | | ↑ | 60s | |
| | | / | | | | / | |
| | | / | | | | / | |

8/31/88

Spectrograph ECHELLE Intensified Reticon TO CAM
 Grating 3000 Log Sheet RAW/RET
 Telescope G11 WYETH Date 8/31 - 9/1, 1988 Observer JME
 Disk 000 2279

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|------------|---------|------|--------------|-----------|------------|----------|-----------------------------------------|
| | | ThAr | | | ↓ | 60s | $\lambda = 5187\text{\AA}$ Mostly clear |
| | G76-21 | | 2:38:32 | 9:33:24 | | 9m | 10.18/30 HALOS (230) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | 270-148 | | 1:05:17 | -6:30:00 | | 2m | 8.44/15 HALOS (97) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G1-50 | | 1:08:07 | 10:43:54 | | 3m | 9.10/30 HALOS (102) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G271-34 | | 1:16:30 | -9:11:54 | | 2m | 8.9/15 HALOS (114) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | S167076 | | 1:26:24 | -24:35:54 | | 5m | 8.94/20 HALOS (125) |
| | | ThAr | | | ↑ | 60s | in trees! |
| | | ThAr | | | ↓ | 60s | |
| | S167605 | | 2:07:47 | -21:00:40 | | 4m | 9.69/15 HALOS (124) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | S75179 | | 2:07:30 | 29:34:29 | | 2m | 8.78/30 HALOS (183) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G77-58 | | 2:05:31 | 28:04:26 | | 7m | 9.99/15 HALOS (180) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G73-51 | | 2:20:35 | 15:11:18 | | 2m | 8.86/15 HALOS (205) |
| | | ThAr | | | ↑↓ | 60s | |
| | G73-50 | | 2:20:33 | 15:11:18 | | 2.5m | 9.36/15 HALOS (204) |
| | | ThAr | | | ↑ | 60s | |
| | | ThAr | | | ↓ | 60s | |
| | G4-23 | | 2:22:52 | 11:44:54 | | 2m | 7.37/30 HALOS (209) |
| | | ThAr | | | ↑ | 60s | |

Intensified Reticon

TO CAM 9/1/88

Spectrograph ECHELLE

Log Sheet

RAW RET

Grating 300l

Observer JMZ - JRL

Telescope 6" WYETH

Date 8/31, 9/1, 9/2 1988

Disk 0170 2280

| Change.... | File | ID | 1950.0 RA | Dec | L/R ↑/↓ | Exposure | Comments |
|---------------|------|----|-----------------------------|----------|------------|----------|-----------------------------------------|
| | | 1 | | | ↓ | 60s | λ=5187A CLEAR |
| | | 2 | TV CET 3:12:03 | 2:34:10 | ↓ | 6.5M | 8.6/100 ESTARS (69) |
| | | 3 | | | ↑ | 60s | |
| | | 4 | | | ↓ | 60s | |
| | | 5 | H2G162 4:06:15 | 19:28:43 | ↓ | 3m | S-S IALL STANDARDS |
| | | 6 | | | ↑ | 60s | |
| | | 7 | | | ↓ | 60s | |
| | | 8 | SKYDUNE 4 ^h East | +30° | ↓ | 2M | 16 SKY |
| | | 9 | | | ↑ | 60s | |
| | | 10 | | | ↓ | 60s | |
| | | 11 | SKYDUNE Meridian | +30° | ↓ | 2M | 16 SKY |
| | | 12 | | | ↑ | 60s | |
| | | 13 | | | | 120M | |
| | | 14 | | | | 120M | |
| Sept 1-2 1988 | | 15 | | | ↓ | 60s | λ5187A |
| | | 16 | SKYEVIEW 0hrs | +20° | ↓ | 2M | 16 SKY |
| | | 17 | | | ↑ | 60s | |
| | | 18 | | | ↓ | 60s | |
| | | 19 | SKYEVIEW 4hrs West | +20° | ↓ | 2M | 16 SKY |
| | | 20 | | | ↑ | 60s | |
| | | 21 | | | ↓ | 60s | |
| | | 22 | H136202 15 16 45 01 57 11 | | | 2M | 17 ILL STD 5.1 |
| | | 23 | | | ↑ | 60s | |
| | | 24 | | | ↓ | 60s | |
| | | 25 | G66-65 15 05 22 09 04 18 | | | 2M | 15 HALOS 8.28/15 |
| | | 26 | | | ↑ | 60s | |
| | | 27 | | | ↓ | 60s | |
| | | 28 | H134440 15 07 28 -16 13 29 | | | 11M | 15 HALOS very low ²⁰ 9.46/20 |
| | | 29 | | | ↑ | 60s | |
| | | 30 | | | ↓ | 60s | |
| | | 31 | S101380 15 05 26 17 38 30 | | | M | 15 HALOS 9.2/50 |
| | | 32 | | | ↑ | 60s | |