

★ Start of FAST Run★

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | | |
|-----------------------------|------------|-------|--|-----|-------------------|--|
| Observer: <u>P. Berlind</u> | | | Grating: <u>3000, 3" slit, binby 4</u> | | Page: <u>4956</u> | |
| PI: <u>All</u> | | | Date: <u>11/1/96</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 1-20 | BIAS | | | 0 | 0s | solid |
| 21-40 | FLAT | | | 0 | 6s | clouds @ sunset |
| 41-44 | DARK | | | 0 | 15m | |
| 45-47 | HD192281 | 20:10 | +40 | 0 | 5s | open @ 9:00 |
| 48 | COMP | | | ↑ | | |
| 49-51 | CE Cyg | 19:50 | +3:41 | 12 | 2, 20, 100 | clearing a little |
| 52 | COMP | | | ↑ | | |
| 53-54 | Z And | 23:33 | +48:45 | 12 | 3s, 60s | |
| 55 | COMP | | | ↑ | | |
| 56 | MARK335 | 00:03 | +19:55 | 6 | 2m | |
| 57 | COMP | | | ↑ | | |
| 58 | N7469 | 23:03 | +08:52 | 6 | 2m | |
| 59 | COMP | | | ↑ | | |
| 60 | MARK509 | 20:41 | -10:54 | 6 | 2m | thin clouds all over |
| 61 | COMP | | | ↑ | | |
| 62 | 522.061019 | 23:27 | +12:59 | 3 | 15m | em increasing clouds |
| 63 | COMP | | | ↑ | | |
| 64-66 | M32 | 00:39 | +40:25 | 0 | 3m | |
| 67 | COMP | | | ↑ | | |
| 68 | Z25.1780 | 00:44 | +44:24 | 0 | 7m | |
| 69 | COMP | | | ↑ | | |
| 70 | 465.041263 | 00:31 | +13:43 | 3 | 10m | stopped by clouds see files 92, 11/2/96 |
| 71 | COMP | | | | | |
| 72-81 | BIAS | | | | | |
| 82-91 | FLAT | | | | | |

910

60 inch Telescope Log
 Observer: PBerlind
 PI: Geller
 Spectrograph: FAST
 Grating: 300R; 3" slit
 Date: 11/2/96
 Page: 4957

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|------------|-------|--------|-----|----------|------------------------------|
| 1-10 | BTAS | | | 0 | 0s | bin by 4 |
| 11-20 | FLAT | | | 0 | 6s | " |
| 21-30 | BTAS | | | 0 | 0s | bin by 2 |
| 31-40 | FLAT | | | 0 | 12s | " |
| 41-43 | HD192201 | | | 0 | 5s | bin by 4 ↓ |
| 44 | COMP | | | ↑ | | |
| 45-47 | CTCagg | 14:50 | +35:41 | 12 | 2,20,120 | |
| 48 | COMP | | | ↑ | | scattered clouds |
| 49-50 | Comet HB | 17:41 | +03:11 | 0 | 30s | |
| 51 | COMP | | | ↑ | | |
| 52 | MPK505 | 20:44 | -10:43 | 6 | 6m | through clouds |
| 53 | COMP | | | ↑ | | |
| 54 | 3C790.3 | 18:45 | +74:13 | 6 | 12m | } |
| 55 | COMP | | | ↑ | | |
| 56 | 20557p2454 | 20:55 | +24:54 | 98 | 5m | |
| 57 | COMP | | | ↑ | | |
| 58 | 20551p2059 | 20:55 | +22:59 | 98 | 5m | |
| 59 | COMP | | | ↑ | | |
| 60 | 20528p2350 | 20:52 | +03:50 | 98 | 5m | Weak; weak H-α |
| 61 | COMP | | | ↑ | | South Comp only |
| 62 | 465.041428 | 00:20 | +13:19 | 3 | 15m | |
| 63 | COMP | | | ↑ | | |
| 64 | 465.042594 | 00:29 | +13:20 | 3 | 8m | em |
| 65 | COMP | | | ↑ | | |
| 66 | 465.043143 | 00:43 | +13:22 | 3 | 10m | redo from 9/18/96 |
| 67 | COMP | | | ↑ | | brighter neighbor 1' to W+NE |
| 68 | 465.043142 | 00:39 | +13:22 | 3 | 15m | |
| 69 | COMP | | | ↑ | | |
| 70 | 465.043929 | 00:41 | +13:26 | 3 | 10m | em |
| 71 | COMP | | | ↑ | | |

[770

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | | |
|----------------------------------|-------------|----------|---------------------------|-----|-------------------|---------------------------------------|
| Observer: <u>P. Berlind</u> | | | Grating: <u>3002</u> | | Page: <u>4958</u> | |
| PI: <u>Geller & Krivshen</u> | | | Date: <u>11/2/96</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 72 | 465.041263 | 00:31 | +13:13 | 3 | 10m | clouds... <i>see file 70, 11/1/96</i> |
| 73 | COMP | | | ↑ | | |
| 74-76 | Z And | 2333 | +48:49 | 12 | 4s, 90s | |
| 77 | COMP | | | ↑ | | |
| 78-79 | AX Per | 01:36 | +54:15 | 12 | 15s, 2m | |
| 80 | COMP | | | ↑ | | |
| 81-83 | HD 217066 | 22:54 | +62:27 | 0 | 5s | |
| 84 | COMP | | | ↑ | | |
| 85 | MRK 335 | 00:06 | +20:12 | 6 | 5m | |
| 86 | COMP | | | ↑ | | |
| 87 | NT 469 | 23:02 | +08:52 | 6 | 5m | |
| 88 | COMP | | | ↑ | | |
| 89 | 465.041080 | 00:21 | +13:12 | 3 | 15m | |
| 90 | COMP | | | ↑ | | |
| 91 | 465.040443 | 00:32 | +13:09 | 3 | 14m | redo? |
| 92 | COMP | | | ↑ | | |
| 93 | 465.040026 | 00:25 | +13:06 | 3 | 15m | em NOT richly enough |
| 94 | COMP | | | ↑ | | |
| 95 | SN 1996 b1 | 00:36 | +11:23 | 2 | 20m | bin by 2 |
| 96 | COMP | | | ↑ | 12s | |
| 97 | SN 1996 b0 | 01:48 | +11:31 | 2 | 20m | bin by 12 |
| 98 | COMP | 01 32 31 | 12 55 14 | ↑ | 12s | |
| 99 | 465.040639 | 00:30 | +13:09 | 3 | 15m | |
| 100 | COMP | | | ↑ | | increasing clouds |
| 101 | 465.038298 | 00:24 | +12:57 | 3 | 15m | moon's up |
| 102 | COMP | | | ↑ | | |
| 103 | 465.035272 | 00:19 | +12:40 | 3 | 13m | redo |
| 104 | COMP | | | ↑ | | close due to cloud - 12 |
| 105-106 | Hiltner 600 | 06:42 | +08:11 | 0 | 45s | open @ 4.0 |
| 107 | COMP | | | ↑ | | |

97 unmatched to cry

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | | |
|-----------------------|------------|-------|---------------------------|-----|-------------------|-----------------------|
| Observer: <u>PB</u> | | | Grating: <u>3000</u> | | Page: <u>4959</u> | |
| PI: <u>Accidental</u> | | | Date: <u>11/2/96</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 108 | TDC361 | 04:22 | +28:04 | 37 | 10m | cloud delay again |
| 109 | COMP | | | ↑ | | |
| 110-111 | 0429p2435 | 04:29 | +24:35 | 12 | 2m, 10m | clearing @ 5:00am?? |
| 112 | COMP | | | ↑ | | |
| 113 | TDC392 | 04:22 | +27:49 | 37 | 10m | |
| 114 | COMP | | | ↑ | | clouds |
| 115 | TDC352 | 04:22 | +27:56 | 37 | 12m | |
| 116 | COMP | | | ↑ | | |
| 117 | TDC351 | 04:22 | +28:00 | 37 | 9m | |
| 118 | COMP | | | ↑ | | |
| 119-120 | DLTau | 04:33 | +25:20 | 12 | 3m, 20s | |
| 121 | COMP | | | ↑ | | |
| 122-123 | DRTau | 04:47 | +6:56 | 12 | 2m, 10s | |
| 124 | COMP | | | ↑ | | |
| 125 | AKn120 | 05:16 | -00:12 | 6 | 3m | |
| 126 | COMP | | | ↑ | | |
| 127-128 | Hiltner600 | 06:42 | +02:11 | 0 | 45s | finally clear @ dawn! |
| 129 | COMP | | | ↑ | | |
| 130-131 | h.2717 | 07:10 | +8:14 | 12 | 1s | |
| 135 | COMP | | | ↑ | | |
| 136-140 | h.2786 | 06:19 | +22:32 | 12 | 0.3s | |
| 141 | COMP | | | ↑ | | |
| 142-146 | h.2091 | 08:56 | +45:56 | 12 | 1s | |
| 147 | COMP | | | ↑ | | HAS AN IMAGE IN IT! |
| 148-157 | BEAS | | | 0 | 0s | |
| 158-167 | FLAT | | | 0 | 6s | |
| 168-177 | BEAS | | | 0 | 0s | bin by 2 |
| 178-187 | FLAT | | | 0 | 12s | bin by 2 |

USED 141.COMP for files 142-146

| 60 inch Telescope Log | | | | Spectrograph: <u>FAST</u> | | Page: <u>4960</u> |
|--|------------------|-------|--------|-------------------------------|---------------|-------------------|
| Observer: <u>P. Berlin</u> | | | | Grating: <u>300L, 3" slit</u> | | |
| PI: <u>W. Kes & Kenyon & Hutchre</u> | | | | Date: <u>11/3/96</u> | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 1-10 | BIAS | | | 0 | 0s | bin by 4 |
| 11-20 | FLAT | | | 0 | 6s | " |
| 21-30 | BIAS | | | 0 | 0s | bin by 2 |
| 31-40 | FLAT | | | 0 | 12s | " |
| 41-45 | sky | | | 0 | 2s | bin by 4 ↓ |
| 46 | COMP | | | ↑ | 5s | |
| 47-49 | HD 171175 | 19:03 | +12:15 | 0 | 4s | clear skies! |
| 50 | COMP | | | ↑ | | |
| 51-53 | HD 176592 | 19:01 | +12:45 | 0 | 6s | |
| 54 | COMP | | | ↑ | | |
| 55-57 | HD 186047 | 19:46 | +32:37 | 0 | 5s | |
| 58 | COMP | | | ↑ | | |
| 59-61 | HD 182281 | 20:10 | +40:16 | 0 | 5s | |
| 62 | COMP | | | ↑ | | |
| 63-65 | CIC _g | 19:58 | +35:41 | 12 | 2s, 20s, 120s | |
| 66 | COMP | | | ↑ | | |
| 67-68 | ZAd | 23:33 | +48:49 | 12 | 3s, 60s | |
| 69 | COMP | | | ↑ | | |
| 70 | MRK 335 | 00:06 | +20:12 | 6 | 2m | |
| 71 | COMP | | | ↑ | | |
| 72 | N7469 | 23:03 | +06:52 | 6 | 2m | |
| 73 | COMP | | | ↑ | | |
| 74 | MRK 509 | 20:41 | -10:54 | 6 | 3m | |
| 75 | COMP | | | ↑ | | |
| 76 | 18119 p2130 | 18:11 | +21:30 | 98 | 4m | |
| 77 | COMP | | | ↑ | | |
| 78 | 18137 p2510 | 18:13 | +25:20 | 98 | 6m | cm |
| 79 | COMP | | | ↑ | | |
| 80 | 18138 p2417 | 18:13 | +30:17 | 98 | 10m | cm |
| 81 | COMP | | | ↑ | | |

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|---------|-------------|-------|-----------|-----|-----|---------------------|
| 82-83 | BDp284211 | 21:48 | +28:37 | 0 | 30s | 1.00 |
| 84 | COMP | | | ↑ | | |
| 85 | 2338/p2557 | 23:38 | +25:57 | 53 | 12m | LSB redo, no em |
| 86 | COMP | | | ↑ | | |
| 87 | 23579/p1657 | 23:57 | +11:57 | 53 | 15m | LSB |
| 88 | COMP | | | ↑ | | |
| 89 | N100 | 00:21 | +11:12 | 53 | 20m | LSB skem |
| 90 | COMP | | | ↑ | | |
| 91 | 465.035272 | 00:15 | +12:40 | 3 | 15m | o row 35 |
| 92 | COMP | | | ↑ | | |
| 93 | 465.0410443 | 00:32 | +13:09 | 3 | 12m | |
| 94 | COMP | | | ↑ | | |
| 95 | 465.018936 | 00:23 | +112:22.6 | 3 | 15m | |
| 96 | COMP | | | ↑ | | |
| 97 | 465.017990 | 00:26 | +11:07 | 3 | 15m | |
| 98 | COMP | | | ↑ | | |
| 99-100 | BDp284211 | 21:48 | +28:37 | 0 | 30s | 1.10 1:50 HA |
| 101 | COMP | | | ↑ | | |
| 102 | 465.019839 | 00:30 | +11:17 | 3 | 15m | |
| 103 | COMP | | | ↑ | | |
| 104 | CO1 | 00:05 | +01:10 | 32 | 10m | 1.16 |
| 105 | COMP | | | ↑ | | |
| 106 | Fitzellio | 23:37 | -05:26 | 0 | 2m | 1.28 |
| 107 | COMP | | | ↑ | | |
| 108 | C22 | 00:26 | -19:18 | 32 | 15m | 1.58 |
| 109 | COMP | | | ↑ | | |
| 110 | 465.023406 | 00:38 | +11:35 | 3 | 15m | em |
| 111 | COMP | | | ↑ | | |
| 112-113 | BDp284211 | 21:48 | +28:37 | 0 | 30s | 1.26 |
| 114 | COMP | | | ↑ | | |

| 60 inch Telescope Log | | | | Spectrograph: <i>FAST</i> | | |
|-------------------------------|-------------|-------|--------|---------------------------|---------|-----------------------|
| Observer: <i>PB</i> | | | | Grating: <i>7002</i> | | Page: <i>4962</i> |
| PI: <i>Geller & Green</i> | | | | Date: <i>11/3/96</i> | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 115 | 465.030025 | 00:30 | +12:12 | 3 | 12m | |
| 116 | COMP | | | ↑ | | |
| 117 | C23 | 01:00 | -16:19 | 32 | 15m | 1.48 |
| 118 | COMP | | | ↑ | | |
| 119 | C03 | 01:08 | -20:15 | 32 | 15m | 1.18 |
| 120 | COMP | | | ↑ | | |
| 121 | Feige 110 | 23:47 | -05:26 | 0 | 2m | 1.52 |
| 122 | COMP | | | ↑ | | |
| 123-124 | BDp 284211 | 21:48 | +28:37 | 0 | 30s | 1.52 |
| 125 | COMP | | | ↑ | | |
| 126 | 465.032401 | 00:25 | +12:25 | 3 | 12m | |
| 127 | COMP | | | ↑ | | |
| 128 | 465.028415 | 00:29 | +12:04 | 3 | 15m | |
| 129 | COMP | | | ↑ | | |
| 130 | C30 | 02:07 | -02:12 | 32 | 11m | 1.20 |
| 131 | COMP | | | ↑ | | |
| 132-133 | C08 | 02:28 | -02:56 | 32 | 90s/15m | S0 * of 30" pair 1.21 |
| 134 | COMP | | | ↑ | | |
| 135 | C09 | 02:29 | -03:16 | 32 | 15m | 1.22 |
| 136 | COMP | | | ↑ | | |
| 137 | Feige 24 | 02:32 | +02:13 | 0 | 3m | 1.14 |
| 138 | COMP | | | ↑ | | |
| 139 | 465.029610N | 00:38 | +12:09 | 3 | 15m | N comp ; S = * |
| 140 | COMP | | | ↑ | | |
| 141 | 465.029701 | 00:34 | +11:59 | 3 | 15m | em |
| 142 | COMP | | | ↑ | | |
| 143 | G 77 m 61 | 03:32 | +01:59 | 32 | 10m | 1.15 |
| 144 | COMP | | | ↑ | | |
| 145 | 467.017270 | 01:23 | +10:50 | 3 | 11m | |
| 146 | COMP | | | ↑ | | |

60 inch Telescope Log

Observer: PB

PI: Prosser

Spectrograph: FAST

Grating: 300R; 600R

Date: 11/3/96

Page: 4963

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|---------|------------|-------|--------|-----|----------|--------------------------------------|
| 147 | 467.014449 | 01:29 | +40:38 | 3 | 12m | em |
| 148 | COMP | | | ↑ | | |
| 149-150 | AXBr | 01:36 | +54:15 | 12 | 10s, 90s | |
| 151 | COMP | | | ↑ | | |
| 152-154 | HR 483 | 01:41 | +42:57 | 54 | 5s | 600Rg; 1.5" slit ↓ |
| 155 | COMP | | | ↑ | 15s | $\lambda_c \approx 4400 \text{ \AA}$ |
| 156-158 | HR 753 | 02:26 | +06:54 | 54 | 6s | spec fm = 900 |
| 159 | COMP | | | ↑ | 15s | bright + 's def + trl |
| 160-162 | HR 1084 | 03:32 | -09:28 | 54 | 1s | |
| 163 | COMP | | | ↑ | 15s | |
| 164-166 | HR 1299 | 04:07 | +51:10 | 54 | 7s | NE Comp |
| 167 | COMP | | | ↑ | 15s | |
| 168-170 | SAO 76231 | 03:49 | +23:53 | 54 | 12s | |
| 171 | COMP | | | ↑ | 15s | |
| 172-174 | SAO 93576 | 04:26 | +16:44 | 54 | | |
| 175 | COMP | | | ↑ | 15s | |
| 176 | L35 | 06:26 | -04:45 | 54 | 8m | almost sat; read as #182 |
| 177 | COMP | | | ↑ | 15s | |
| 178 | L37 | 06:29 | -04:38 | 54 | 6m | |
| 179 | COMP | | | ↑ | | seeing < 1" !! ? |
| 180 | L38 | 06:28 | -04:28 | 54 | 6m | |
| 181 | COMP | | | ↑ | | |
| 182 | L35 | 06:26 | -04:45 | 54 | 3m | |
| 183 | COMP | | | ↑ | | |
| 184 | L39 | 06:27 | -04:53 | 54 | 6m | |
| 185 | COMP | | | ↑ | | |
| 186 | L40 | 06:27 | -04:42 | 54 | 6m | * to W on slit |
| 187 | COMP | | | ↑ | | |
| 188 | L42 | 06:28 | -04:50 | 54 | 6m | |
| 189 | COMP | | | ↑ | | |

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|----------------------------------|-------------|-------|--------|---------------------------|---------|--|
| 60 inch Telescope Log | | | | Spectrograph: <u>FAST</u> | | |
| Observer: <u>PB</u> | | | | Grating: <u>600R/300R</u> | | Page: <u>4964</u> |
| PI: <u>Prosser & Partoja</u> | | | | Date: <u>11/3/96</u> | | |
| 190 | L41 | 06:27 | -04:49 | 54 | 6m | 600Rg; 1.5" slit; $\lambda = 4100\text{\AA}$ |
| 191 | COMP | | | ↑ | 15s | |
| 192 | L43 | 06:28 | -04:50 | 54 | 6m | |
| 193 | COMP | | | ↑ | | |
| 194 | L22 | 06:27 | -04:42 | 54 | 6m | |
| 195 | COMP | | | ↑ | | |
| 196 | F2F | 06:26 | -04:35 | 54 | 10m | |
| 197 | COMP | | | ↑ | | |
| 198 | FIG | 06:27 | -04:46 | 54 | 10m | |
| 199 | COMP | | | ↑ | | |
| 200 | FIE | 06:27 | -04:40 | 54 | 10m | |
| 201 | COMP | | | ↑ | | |
| 202 | F2W | 06:27 | -04:34 | 54 | 15m | |
| 203 | COMP | | | ↑ | | |
| 204 | FIN | 06:28 | -04:53 | 54 | 15m | beware bright * at edge of chip - careful w/ slit |
| 205 | COMP | | | ↑ | | |
| 206 | Hiltner 600 | 06:42 | +02:11 | 54 | 4m | |
| 207 | COMP | | | ↑ | | |
| 208-210 | HR4112 | 10:30 | +55:54 | 54 | 3s | |
| 211 | COMP | | | ↑ | | |
| 212-214 | FLAT600 | | | 54 | 45s | Necessary exit |
| 222 | 001 | 04:54 | +38:43 | 43 | 10m | 300Rg; 3" slit ↓ etc |
| 223 | COMP | | | ↑ | | run 990 |
| 224 | 010 | 05:10 | +70:11 | 43 | 6m | |
| 225 | COMP | | | ↑ | | |
| 226 | 015 | 05:24 | +72:05 | 43 | 5m | |
| 227 | COMP | | | ↑ | | |
| 229-229 | DRTau | 04:33 | +75:20 | 12 | 3m, 20s | |
| 230 | COMP | | | ↑ | | |
| 231-232 | DRTau | 04:47 | +66:58 | 12 | 2m, 10s | |

60 inch Telescope Log

Observer: PB
 PI: All

Spectrograph: FAST

Grating: 3002
 Date: 11/3/96

Page: 4965

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|---------|-----------|-------|--------|-----|-----|-----------------------------|
| 233 | COMP | | | ↑ | | |
| 234 | MARKUM | 11:01 | +38:28 | 6 | 4m | |
| 235 | COMP | | | ↑ | | |
| 236 | Faye 34 | 10:36 | +43:21 | 0 | 2m | crystal clear all night! |
| 237 | COMP | | | ↑ | | |
| 238-240 | HD 38572 | 05:48 | 30:57 | 0 | 5s | |
| 241 | COMP | | | ↑ | | |
| 242-244 | HD 28894 | 05:53 | 40:52 | 0 | 6s | |
| 245 | COMP | | | ↑ | | |
| 246-248 | HD 255055 | 06:19 | +23:17 | 0 | 6s | |
| 249 | COMP | | | ↑ | | |
| 250-252 | HD 47099 | 06:09 | 20:29 | 0 | 3s | |
| 253 | COMP | | | ↑ | | |
| 254-256 | HD 41117 | 06:03 | 30:08 | 0 | 1s | |
| 257 | COMP | | | ↑ | | |
| 258-260 | HD 41161 | 06:05 | 48:14 | 0 | 1s | |
| 261 | COMP | | | ↑ | | |
| 262-271 | BIAS | | | 0 | 0s | |
| 272-281 | FLAT | | | 0 | 6s | |

| 60 inch Telescope Log | | Spectrograph: <u>FAST</u> | | Page: <u>4966</u> | | |
|----------------------------|------------|---------------------------|-----------|----------------------|-----------------|-------------------------|
| Observer: <u>J. PETERS</u> | | Grating: <u>300</u> | | Date: <u>11/4/96</u> | | |
| PI: <u>ET. AL</u> | | | | | | |
| Number | Object | R.A. | Dec. | L/R Program | Exp | Comments |
| 1 | Comp | | | | | For wavelength, here |
| 2-11 | FLAT | | | | 6 ^s | |
| 12-21 | Bias | | | | | |
| 22 | Comp | | | ↓ | | |
| 23-27 | Evesky | | | | 2 ^s | |
| 28 | HD 198958 | 20 49 50 | 47 31 07 | ○ | 3 ^s | TCS window locked UP. |
| 29 | Comp | | | ↑ | | Thin Clouds |
| 30 | Cicys | 19 50 12 | 35 41 04 | ↑ #12 | 2 ^s | |
| 31 | Cicys | | | 12 | 20 ^s | |
| 32 | Cicys | | | 12 | 2 ^m | |
| 33 | Comp | | | ↑ | | |
| 34 | ZAND | 23 33 40 | 48 49 06 | #12 | 3 ^s | |
| 35 | ZAND | | | 12 | 60 ^s | |
| 36 | Comp | | | ↑ | | |
| 37 | MRK 509 | 20 41 26 | -70 54 18 | #6 | 2 ^m | |
| 38 | Comp | | | ↑ | | |
| 39 | Feige 110 | 23 17 23 | -05 26 31 | ○ | 60 ^s | |
| 40 | Comp | | | ↑ | | |
| 41 | M 7469 | 23 03 15 | 08 52 25 | 6 | 2 ^m | 3C 370.3 in Thin Cloud. |
| 42 | Comp | | | ↑ | | |
| 43 | MRK 335 | 00 03 45 | 19 55 27 | 6 | 2 ^m | |
| 44 | Comp | | | ↑ | | |
| 45 | M 31 | 00 40 00 | 40 59 42 | ○ | 30 ^s | |
| 46 | Comp | | | ↑ | | |
| 47 | 522.056390 | 23 19 46 | 12 37 51 | 3 | 15 ^m | |
| 48 | Comp | | | ↑ | | |
| 49 | 522.059863 | 23 08 19 | 12 48 08 | 3 | 15 ^m | |
| 50 | Comp | | | ↑ | | |
| 51 | 522.063731 | 23 23 53 | 12 00 28 | 3 | 10 ^m | |
| 52 | Comp | | | ↑ | | |

note 8.88
jan 1.19

60 inch Telescope Log

Observer: J. PetersPI: ET. ALSpectrograph: FastGrating: 300Page: 4967Date: 11/4/96

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|---------------|----------|----------|-----|-----------------|----------------------|
| 53 | 465.026591 | 00 29 57 | 11 54 09 | 3 | 15 ^M | Susan This is REPEAT |
| 54 | Comp | | | ↑ | | I even got The Comp! |
| 55 | 522.067042 | 23 24 08 | 13 11 12 | 3 | 15 ^M | |
| 56 | Comp | | | ↑ | | |
| 57 | 522.068256 | 23 28 15 | 13 14 34 | 3 | 10 ^M | |
| 58 | Comp | | | ↑ | | |
| 59 | 522.068541 | 23 25 37 | 13 15 58 | 3 | 10 ^M | |
| 60 | Comp | | | ↑ | | |
| 61 | 522.070096 | 23 25 00 | 13 21 07 | 3 | 15 ^M | |
| 62 | Comp | | | ↑ | | |
| 63 | 522.072101 | 23 30 11 | 13 26 54 | 3 | 15 ^M | |
| 64 | Comp | | | ↑ | | |
| 65 | 0150349340241 | 01 50 34 | 39 02 41 | 25 | 20 ^M | Repeat |
| 66 | Comp | | | | | |
| 67 | 01511P380836 | 01 51 12 | 38 08 36 | 25 | 20 ^M | Repeat |
| 68 | Comp | | | ↑ | | |
| 69 | SN1996ho | 01 48 22 | 11 31 16 | 2 | 20 ^M | |
| 70 | Comp | | | ↑ | | |
| 71 | AXPer | 01 36 23 | 54 15 02 | 12 | 10 ^S | |
| 72 | AXPer | ↓ | ↓ | 12 | 90 ^S | |
| 73 | Comp | | | ↑ | | |
| 74 | 225.280 | 00 41 45 | 41 05 12 | 0 | 5 ^M | |
| 75 | Comp | | | ↑ | | |
| 76 | 465.024651 | 00 32 42 | 11 43 16 | 3 | 20 ^M | |
| 77 | Comp | | | ↑ | | |
| 78 | 465.025124 | 00 38 49 | 11 45 16 | 3 | 20 ^M | |
| 79 | Comp | | | ↑ | | |
| 80 | 465.034902 | 00 37 51 | 12 38 18 | 3 | 15 ^M | |
| 81 | Comp | | | ↑ | | |
| 82 | 465.038389 | 00 23 31 | 12 57 39 | 3 | 15 ^M | |

60 inch Telescope Log

Spectrograph: FastObserver: Jim PetersGrating: 300Page: 4968PI: CT, alDate: 11/4/96

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|--------|-----------------|----------|-----------|-----|-----------------|-------------------------|
| 83 | Comp | | | ↑ | | |
| 84 | 465.040761 | 00 39 19 | 13 10 13 | 3 | 15 ^m | |
| 85 | Comp | | | ↑ | | |
| 86 | 465.042053 | 00 38 01 | 13 17 16 | 3 | 15 ^m | |
| 87 | Comp | | | ↑ | | |
| 88 | 465.042318 | 00 29 40 | 13 19 23 | 3 | 15 ^m | |
| 89 | Comp | | | ↑ | | |
| 90 | 467.026237 | 01 13 36 | 11 27 51 | 3 | 15 ^m | |
| 91 | Comp | | | ↑ | | |
| 92 | 467.032203 | 01 09 09 | 11 50 06 | 3 | 15 ^m | |
| 93 | Comp | | | ↑ | | |
| 94 | DLTaw | 04 33 39 | 25 20 39 | 12 | 20 ^s | |
| 95 | DLTaw | ↓ | ↓ | 12 | 3 ^m | |
| 96 | Comp | | | ↑ | | |
| 97 | DRTaw | 04 37 05 | 16 58 37 | 12 | 10 ^s | |
| 98 | DRTaw | ↓ | ↓ | 12 | 2 ^m | |
| 99 | Comp | | | ↑ | | |
| 100 | H214 | 04 38 15 | 10 53 57 | 0 | 3 ^m | |
| 101 | Comp | | | ↑ | | |
| 102 | NGC 1700 | 04 54 28 | -04 56 30 | 0 | 2 ^m | |
| 103 | Comp | | | ↑ | | |
| 104 | 015102 P 334717 | 01 51 02 | 33 47 17 | 25 | 20 ^m | Thin cloud?? |
| 105 | Comp | ↓ | ↓ | ↑ | | |
| 106 | 015102 P 334717 | ↓ | ↓ | 25 | 20 ^m | More Not much last time |
| 107 | Comp | | | ↑ | | |
| 108 | 014638 P 373929 | 01 46 38 | 37 39 29 | 25 | 20 ^m | |
| 109 | Comp | | | ↑ | | |
| 110 | 002 | 04 40 31 | 38 06 30 | 43 | 20 ^m | ? |
| 111 | Comp | | | ↑ | | |
| 112 | 002 | ↓ | ↓ | 43 | 20 ^m | ? |

| 60 inch Telescope Log | | Spectrograph: <u>Fast</u> | | | | | |
|----------------------------|------------|---------------------------|-----------|-------------------|------------------|-------------------------------|--|
| Observer: <u>J. Peters</u> | | Grating: <u>300</u> | | Page: <u>4970</u> | | | |
| PI: <u>ALL</u> | | Date: <u>11/5/96</u> | | | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments | |
| 1-10 | FLAT | | | 0 | 6 ^s | Some broken thin | |
| 11-20 | Bias | | | 0 | | clouds around? | |
| 21-30 | FLAT | Bin By | 2 | 0 | 10 ^s | FOR SN group | |
| 31-40 | Bias | Bin By | 2 | 0 | | " " " | |
| 41-45 | EVE SKY | | | 0 | | Risky 4 | |
| 46 | Comp | | | ↑ | | | |
| 47 | HD 192 281 | 20 10 46 | 40 07 01 | 0 | 5 ^s | | |
| 48 | Comp | | | ↑ | | | |
| 49 | CICyg | 19 50 12 | 35 41 04 | 12 | 2 ^s | | |
| 50 | CICyg | ↓ | ↓ | 12 | 20 ^s | | |
| 51 | CICyg | ↓ | ↓ | 12 | 120 ^s | | |
| 52 | Comp | | | ↑ | | | |
| 53 | Z And | 23 38 40 | 48 49 06 | 12 | 30 | | |
| 54 | Z And | ↓ | ↓ | 12 | 60 ^s | | |
| 55 | Comp | | | ↑ | | | |
| 56 | N7469 | 23 03 15 | 08 52 25 | 6 | 2 ^m | | |
| 57 | Comp | | | ↑ | | | |
| 58 | Ferg 110 | 23 17 23 | -05 26 22 | 0 | 2 ^m | | |
| 59 | Comp | | | ↑ | | | |
| 60 | N7331 | 22 34 46 | 37 09 43 | 0 | 2 ^m | Delay. Was AT 48 ^m | |
| 61 | Comp | | | ↑ | | or Problem! | |
| 62 | M31 | 00 40 00 | 40 59 42 | 0 | 60 ^s | | |
| 63 | Comp | | | ↑ | | | |
| 64 | NGC 227 | 00 40 04 | -01 48 18 | ? | 15 ^m | Obj For N. Caldwell | |
| 65 | Comp | | | ↑ | | | |
| 66 | 467.033405 | 01 06 54 | 11 54 26 | 3 | 20 ^m | DARN faint Obj. I hope | |
| 67 | Comp | | | ↑ | | ITS IN SLIT?? There is | |
| 68 | 467.035893 | 01 27 04 | 12 04 20 | 3 | 20 ^m | Nothing To go on in | |
| 69 | Comp | ↓ | ↓ | ↑ | | this field. | |
| 70 | 467.035893 | ↓ | ↓ | 3 | 20 ^m | Lost The Home?? | |

8 8
1, 18

60 inch Telescope Log

Spectrograph: FASTObserver: J. PetersGrating: 300Page: 4971PI: ET.alDate: 11/5/96

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|------------|----------|----------|-----|-----------------|---------------------------------|
| 71 | Comp | | | ↑ | | (AT 48", T.L. Focus) Problem |
| 72 | 467.036817 | 01 31 45 | 12 02 05 | 3 | 20M | |
| 73 | Comp | | | ↑ | | |
| 74 | 467.044643 | 01 17 20 | 12 38 31 | 3 | 20M | |
| 75 | Comp | | | ↑ | | |
| 76 | 467.045275 | 01 14 06 | 12 40 51 | 3 | 20M | |
| 77 | Comp | | | ↑ | | |
| 78 | AXPER | 01 36 27 | 54 15 02 | 12 | 10 ³ | |
| 79 | AXPER | ↓ | ↓ | 12 | 90 ³ | |
| 80 | Comp | | | ↑ | | |
| 81 | 467.053126 | 01 09 38 | 13 09 33 | 3 | 20M | |
| 82 | Comp | | | ↑ | | |
| 83 | 467.055550 | 01 28 58 | 13 18 29 | 3 | 20M | |
| 84 | Comp | | | | | |
| 85 | 467.056715 | 01 13 07 | 13 23 47 | 3 | 20M | |
| 86 | Comp | | | ↑ | | |
| 87 | 468.018620 | 01 42 16 | 11 42 17 | 3 | 20M | |
| 88 | Comp | | | ↑ | | |
| 89 | 468.032325 | 01 35 34 | 11 56 03 | 3 | 20M | |
| 90 | Comp | | | ↑ | | |
| 91 | 468.032433 | 01 38 21 | 11 56 38 | 3 | 20M | HIT by Thin cloud |
| 92 | Comp | | | ↑ | | Restart |
| 93 | 468.040510 | 01 44 39 | 12 25 08 | 3 | 20M | |
| 94 | Comp | | | ↑ | | |
| 95 | DR Tau | 04 33 39 | 25 20 39 | 12 | 20 ³ | |
| 96 | DR Tau | ↓ | ↓ | 12 | 3M | |
| 97 | Comp | | | ↑ | | |
| 98 | DR Tau | 04 47 05 | 16 58 37 | 12 | 10 ³ | |
| 99 | DR Tau | ↓ | ↓ | 12 | 2M | |
| 100 | Comp | | | ↑ | | |

60 inch Telescope Log

Observer: J. PetersPI: e.T. alSpectrograph: FastGrating: 300Page: 4973Date: 11/2/96

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|-----------|----------|----------|-----|------------------|------------|
| 1-10 | Flat | | | 0 | 6 ³ | |
| 11-20 | Bias | | | 0 | | |
| 21-30 | Flat | Bin By 2 | | 0 | 11 ³ | SN. People |
| 31-40 | Bias | Bin By 2 | | 0 | | " " |
| 41-44 | Evesky | Bin by 4 | | | 2 ³ | |
| 45 | Comp | | | ↑ | | Clear! |
| 46 | HD 192281 | 20 10 46 | 40 07 01 | 0 | 5 ³ | |
| 47 | Comp | | | ↑ | | |
| 48 | HD 17096 | 22 54 97 | 62 27 35 | 0 | 5 ³ | |
| 49 | Comp | | | ↑ | | |
| 50 | N7331 | 22 34 46 | 34 09 43 | 0 | 2 ⁴⁴ | |
| 51 | Comp | | | ↑ | | |
| 52 | 3C 390.3 | 18 45 37 | 79 49 07 | 6 | 5 ⁴ | |
| 53 | Comp | | | ↑ | | |
| 54 | N7469 | 23 03 15 | 08 52 25 | 6 | 2 ⁴⁴ | |
| 55 | Comp | | | ↑ | | |
| 56 | M 83 | 00 03 45 | 19 55 27 | 6 | 2 ⁴⁴ | |
| 57 | Comp | | | ↑ | | |
| 58 | CICyg | 19 50 12 | 35 41 04 | 12 | 2 ⁵ | |
| 59 | CICyg | ↓ | ↓ | 12 | 20 | |
| 60 | CICyg | ↓ | ↓ | 12 | 130 | |
| 61 | Comp | | | ↑ | | |
| 62 | 2 And | 23 33 40 | 48 49 06 | 12 | 3 ³ | |
| 63 | 2 And | ↓ | ↓ | 12 | 60 ³ | |
| 64 | Comp | | | ↑ | | |
| 65 | M 31 | 00 40 00 | 40 59 42 | 0 | 60 ³ | |
| 66 | Comp | | | ↑ | | |
| 67 | SN 1996bo | 01 48 22 | 11 31 16 | 2 | 20 ⁴⁴ | Bin by 2 |
| 68 | Comp | | | ↑ | | |
| 69 | AXPer | 01 36 23 | 54 15 02 | 12 | 10 ³ | |

by 2 8.75
1.16

by 4 8.5
1.16

60 inch Telescope Log

Observer: J. PetersSpectrograph: FogTGrating: 300Page: 4974PI: at.alDate: 11/6/96

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|---------------|----------|----------|-----|-----------------|---|
| 70 | AX Per | 01 36 23 | 54 15 02 | 12 | 2 ^m | |
| 71 | Comp | | | ↑ | | |
| 72 | 468.047342 | 01 53 29 | 12 49 40 | 3 | 20 ^m | |
| 73 | Comp | | | ↑ | | |
| 74 | 468.048162 | 01 38 22 | 12 53 07 | 3 | 20 ^m | |
| 75 | Comp | | | ↑ | | |
| 76 | 468.052015 | 01 46 30 | 13 06 50 | 3 | 20 ^m | |
| 77 | Comp | | | ↑ | | |
| 78 | 468.052519 | 01 51 30 | 13 07 52 | 3 | 20 ^m | |
| 79 | Comp | | | ↑ | | |
| 80 | 14912P362719 | 01 49 12 | 36 27 19 | 25 | 20 ^m | |
| 81 | Comp | | | ↑ | | |
| 82 | 015027P335219 | 01 50 27 | 33 52 19 | 25 | 20 ^m | |
| 83 | Comp | | | ↑ | | |
| 84 | 015156P335117 | 01 51 56 | 33 51 17 | 25 | 15 ^m | |
| 85 | Comp | | | ↑ | | |
| 86 | 015008P344156 | 01 50 08 | 34 41 56 | 25 | 20 ^m | Combine |
| 87 | Comp | ↓ | ↓ | ↑ | | |
| 88 | 015008P344156 | ↓ | ↓ | 25 | 20 ^m | |
| 89 | Comp | | | ↑ | | |
| 90 | 014307P370938 | 01 43 07 | 37 09 38 | 25 | 20 ^m | |
| 91 | Comp | | | ↑ | | |
| 92 | 014700P374749 | 01 47 00 | 37 47 49 | 25 | 20 ^m | |
| 93 | Comp | | | ↑ | | |
| 94 | 014752P372433 | 01 47 52 | 37 24 33 | 25 | 20 ^m | |
| 95 | Comp | | | ↑ | | |
| 96 | 014904P371659 | 01 49 04 | 37 16 59 | 25 | 20 ^m | There are several ³ obj in SLIT. 2 obj to East one to West |
| 97 | Comp | | | ↑ | | |
| 98 | 014740P344801 | 01 47 40 | 34 48 01 | 25 | 20 ^m | |
| 99 | Comp | | | ↑ | | |

98 superout star

60 inch Telescope Log

Observer: J. PetersPI: c.t.a.lSpectrograph: FastGrating: 300Date: 11/6/96Page: 4975

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|---------|---------------|----------|----------|-----|-----------------|--------------------------|
| 100 | 015137P333019 | 01 51 37 | 33 30 19 | 25 | 20 | |
| 101 | Comp | | | ↑ | | |
| 102 | 014937P363837 | 01 49 37 | 36 38 37 | 25 | 20 ^m | |
| 103 | Comp | | | ↑ | | |
| 104 | DL Tau | 04 33 39 | 25 20 39 | 12 | 20 ^s | |
| 105 | DL Tau | ↓ | ↓ | 12 | 3 ^m | |
| 106 | Comp | | | ↑ | | |
| 107 | DRTau | 04 47 05 | 16 58 37 | 12 | 10 ^s | |
| 108 | DRTau | ↓ | ↓ | 12 | 2 ^m | |
| 109 | Comp | | | ↑ | | |
| 110 | 014 | 05 20 46 | 19 39 49 | 43 | 20 ^m | |
| 111 | Comp | | | ↑ | | |
| 112 | 016 | 05 24 56 | 19 49 22 | 43 | 20 ^m | Doing Fuz. I think there |
| 113 | Comp | | | ↑ | | is a star in the center. |
| 114 | 017 | 05 25 28 | 16 52 05 | 43 | 20 ^m | → Star in obj doing |
| 115 | Comp | | | | | The Fuz |
| 116 | 018 | 05 25 33 | 16 06 40 | 43 | 20 ^m | |
| 117 | Comp | | | ↑ | | |
| 118 | 019 | 05 28 59 | 15 15 50 | 43 | 20 ^m | A real Dog |
| 119 | Comp | | | ↑ | | |
| 120 | NGC 1700 | 04 54 28 | 04 56 30 | 0 | 2 ^m | |
| 121 | Comp | | | ↑ | | |
| 122-131 | FLAT | | | | 6 ^s | |
| 132-141 | Bias | | | | | |

| 60 inch Telescope Log | | Spectrograph: <u>FAST</u> | | Page: <u>4976</u> | | |
|-----------------------------|--------------|---------------------------|--------|----------------------|------------|------------------------|
| Observer: <u>P. Berlind</u> | | Grating: <u>3002</u> | | Date: <u>11/7/96</u> | | |
| PI: <u>Huchra</u> | | | | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 1-10 | BIAS | | | 0 | 0s | bin by 4 |
| 11-20 | FLAT | | | 0 | 6s | " |
| 21-30 | BIAS | | | 0 | 0s | bin by 2 |
| 31-40 | FLAT | | | 0 | 12s | " |
| 41-45 | SKY | | | 0 | 2s | clear skies! |
| 46 | COMP | | | ↑ | | |
| 47-49 | HD 170153 | 18:20 | +72:44 | 0 | 1s | |
| 50 | COMP | | | ↑ | | |
| 51-53 | HD 183556 | 19:21 | +76:33 | 0 | 3s | |
| 54 | COMP | | | ↑ | | |
| 55-57 | HD 23195 | 19:20 | +14:25 | 0 | 3s | |
| 58 | COMP | | | ↑ | | |
| 59-61 | HD 177336 | 19:04 | -05:41 | 0 | 4s | |
| 62 | COMP | | | ↑ | | |
| 63-65 | HD 192281 | 20:10 | +40:07 | 0 | 5s | |
| 66 | COMP | | | ↑ | | |
| 67-69 | Calog | 19:50 | +35:41 | 12 | 2, 20, 120 | |
| 70 | COMP | | | ↑ | | |
| 71-72 | Z And | 23:33 | +48:49 | 12 | 3s, 60s | |
| 73 | COMP | | | ↑ | | poor seeing |
| 74 | MRK 335 | 00:00 | +19:55 | 6 | 3m | |
| 75 | COMP | | | ↑ | | |
| 76 | N 7169 | 23:03 | +08:52 | 6 | 3m | |
| 77 | COMP | | | ↑ | | |
| 78 | MRK 509 | 20:41 | -10:54 | 6 | 3m | |
| 79 | COMP | | | ↑ | | |
| 80 | 20476 p 1251 | 20:47 | +12:51 | 98 | 8m | star to W on slit ; em |
| 81 | COMP | | | ↑ | | |
| 82 | 20479 p 1310 | 20:47 | +13:10 | 98 | 10m | seeing > 3" em |
| 83 | COMP | | | ↑ | | |

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | Page: <u>4977</u> | |
|-----------------------|---------------|-------|---------------------------|-----|-------------------|---------------|
| Observer: <u>PB</u> | | | Grating: <u>300</u> | | | |
| PI: <u>Geller</u> | | | Date: <u>11/7/66</u> | | | |
| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
| 84 | 20450 p0705NW | 20:48 | +07:05 | 98 | 10m | em |
| 85 | COMP | | | ↑ | | |
| 86 | 522.001720 | 23:23 | +09:44 | 55 | 8m | poor seeing! |
| 87 | COMP | | | ↑ | | |
| 88 | 522.001883 | 23:17 | +09:45 | 55 | 8m | pec |
| 89 | COMP | | | ↑ | | |
| 90 | 522.003070 | 23:16 | +09:49 | 55 | 8m | |
| 91 | COMP | | | ↑ | | |
| 92 | 522.003327 | 23:24 | +09:49 | 55 | 7m | |
| 93 | COMP | | | ↑ | | |
| 94 | 522.005742 | 23:22 | +09:58 | 55 | 8m | |
| 95 | COMP | | | ↑ | | |
| 96 | 522.005853 | 23:22 | +09:58 | 55 | 8m | |
| 97 | COMP | | | ↑ | | |
| 98 | 522.006336 | 23:16 | +10:00 | 55 | 9m | |
| 99 | COMP | | | ↑ | | |
| 100 | 522.008152 | 23:15 | +10:06 | 55 | 8m | |
| 101 | COMP | | | ↑ | | seeing better |
| 102 | 522.011031 | 23:10 | +10:15 | 55 | 6m | |
| 103 | COMP | | | ↑ | | |
| 104 | 522.0175871 | 23:15 | +13:40 | 55 | 8m | |
| 105 | COMP | | | ↑ | | |
| 106 | 522.018324 | 23:22 | +13:48 | 55 | 10m | em + |
| 107 | COMP | | | ↑ | | |
| 108 | 522.019792 | 23:17 | +13:53 | 55 | 8m | |
| 109 | COMP | | | ↑ | | |
| 110 | 522.020020 | 23:12 | +13:56 | 55 | 6m | em |
| 111 | COMP | | | ↑ | | |
| 112 | 522.020167 | 23:12 | +13:57 | 55 | 7m | |
| 113 | COMP | | | ↑ | | |

60 inch Telescope Log

Observer: PB

PI: Geller & Kirshner

Spectrograph: FAST

Grating: 3002

Date: 11/7/96

Page: 4978

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|------------|-------|--------|-----|-----|-----------------------------|
| 114 | 522.061172 | 23:21 | +13:57 | SS | 6m | |
| 115 | COMP | | | ↑ | | |
| 116 | 522.061382 | 23:23 | +13:58 | SS | 7m | |
| 117 | COMP | | | ↑ | | |
| 118 | 522.061579 | 23:13 | +13:59 | SS | 6m | em |
| 119 | COMP | | | ↑ | | |
| 120 | 522.063145 | 23:22 | +14:04 | SS | 6m | em |
| 121 | COMP | | | ↑ | | |
| 122 | 522.066582 | 23:30 | +14:15 | SS | 10m | bin by 2; sup + to W-bright |
| 123 | COMP | | | ↑ | 12s | |
| 124 | 522.066620 | 23:24 | +14:16 | SS | 8m | |
| 125 | COMP | | | ↑ | | |
| 126 | SN1996bi | 00:36 | +11:23 | 2 | 20m | see z=1.08 bin by 2 |
| 127 | COMP | | | ↑ | | |
| 128 | 522.068150 | 23:25 | +14:24 | SS | 6m | |
| 129 | COMP | | | ↑ | | |
| 130 | 522.097096 | 23:12 | +14:51 | SS | 8m | |
| 131 | COMP | | | ↑ | | |
| 132 | 522.112805 | 23:07 | +15:44 | SS | 8m | |
| 133 | COMP | | | ↑ | | |
| 134 | 522.106050 | 23:07 | +15:21 | SS | 6m | |
| 135 | COMP | | | ↑ | | |
| 136 | 522.109581 | 23:16 | +15:34 | SS | 6m | |
| 137 | COMP | | | ↑ | | |
| 138 | 522.109655 | 23:16 | +15:35 | SS | 5m | |
| 139 | COMP | | | ↑ | | |
| 140 | 522.096960 | 23:19 | +14:51 | SS | 8m | WK em |
| 141 | COMP | | | ↑ | | |
| 142 | 522.101780 | 23:27 | +15:07 | SS | 8m | |
| 143 | COMP | | | ↑ | | |

by 2: 1.18
8.42

by 4: 1.17
8.87

60 inch Telescope Log

Observer: PBSpectrograph: FASTGrating: 3000Page: 4979PI: Geller & HuchraDate: 11/7/96

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|----------|-------------|----------|-----------|-----|----------|---------------------------|
| 144 | 522.107272 | 23:24 | +15:26 | SS | 6m | |
| 145 | COMP | | | ↑ | | |
| 146 | 522.105811 | 23:25 | +15:21 | SS | 7m | |
| 147 | COMP | | | ↑ | | |
| 148 | 522.105829 | 23:27 | +15:21 | SS | 7m | Finishes the notebook! |
| 149 | COMP | | | ↑ | | |
| 150 | 465.041050 | 00:21 | +13:12 | 3 | 18m | redo from 11/2/96 #89 |
| 151 | COMP | | | ↑ | | |
| 152 | 01518m0052A | 01:54:22 | -00:37:42 | 1 | 4m | SE |
| 153 | 01518m0052B | 01:54:20 | -00:37:25 | 1 | 6m | NW |
| 154 | COMP | | | ↑ | | |
| 155 | Ferze25 | 02:36 | +05:15 | 0 | 3m | |
| 156 | COMP | | | ↑ | | |
| 157 | N404 | 07:06 | +35:27 | SS | 2.5m | NW of B And em + |
| 158 | COMP | | | ↑ | | cosmic ray on SIE line #2 |
| 159-160 | AxPer | 01:36 | +54:15 | 12 | 10s, 90s | |
| 161 | COMP | | | ↑ | | |
| 162, 164 | 467.005373 | 07:23 | +66:58 | SS | 6m, | 11m x 2 reduce #164 |
| 163 | COMP | | | ↑ | | ukem |
| 165 | 467.007276 | 07:25 | +10:07 | SS | 7m | |
| 166 | COMP | | | ↑ | | |
| 167 | 467.007465 | 07:25 | +10:07 | SS | 11m | em |
| 168 | COMP | | | ↑ | | |
| 169 | 467.007707 | 07:24 | +10:08 | SS | 6m | |
| 170 | COMP | | | ↑ | | |
| 171 | 015203p3409 | 01:55 | +36:29 | 25 | 15m | 600 ems; wk features + em |
| 172 | COMP | | | ↑ | | redo's from ?? |
| 173 | 015154p343 | 01:51 | +36:13 | 25 | 18m | pec. |
| 174 | COMP | | | ↑ | | |
| 175 | 014915p3359 | 01:49 | +33:59 | 25 | 20m | |

| 60 inch Telescope Log | | | | Spectrograph: <u>FAST</u> | | Page: <u>4980</u> | |
|-----------------------|--------------|----------------------|--------|---------------------------|---------|-----------------------|--|
| Observer: <u>PB</u> | | Grating: <u>300R</u> | | Date: <u>11/7/96</u> | | | |
| PI: <u>Parkes</u> | | | | | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments | |
| 176 | COMP | | | ↑ | | | |
| 177 | 014302 p3740 | 01:45 | +37:55 | 25 | 20m | variable seeing pec | |
| 178 | COMP | | | ↑ | | | |
| 179 | 001 | 04:42 | +38:48 | 43 | 17m | redo from 11/3/96 wk. | |
| 180 | COMP | | | ↑ | | | |
| 181 | 020 | 05:29 | +46:51 | 43 | 15m | wk em | |
| 182 | COMP | | | ↑ | | | |
| 183 | 022 | 05:30 | +30:29 | 43 | 10m | guided off sup * | |
| 184 | COMP | | | ↑ | | | |
| 185 | 024 | 05:33 | +31:49 | 43 | 8m | guided off sup * | |
| 186 | COMP | | | ↑ | | em! pec sup? * | |
| 187 | 026 | 05:35 | +18:30 | 43 | 15m | | |
| 188 | COMP | | | ↑ | | | |
| 189 | 027 | 05:35 | +15:07 | 43 | 7m | em | |
| 190 | COMP | | | ↑ | | | |
| 191 | 032 | 05:41 | +09:42 | 43 | 7m | | |
| 192 | COMP | | | ↑ | | | |
| 193-194 | Hiltner 600 | 06:42 | +02 | 0 | 45s | | |
| 195 | 196 | | | ↑ | | | |
| 196-197 | DRTan | 04:37 | +25:20 | 12 | 20s, 2m | | |
| 198 | COMP | | | ↑ | | | |
| 199-200 | DRTan | 04:47 | +16:58 | 12 | 10s, 2m | | |
| 201 | COMP | | | ↑ | | seeing worse | |
| 202 | 033 | 05:42 | +16:45 | 43 | 7m | | |
| 203 | COMP | | | ↑ | | | |
| 204 | 0385 | 05:48 | +38:41 | 43 | 7m | | |
| 205 | COMP | | | ↑ | | | |
| 206 | 041 | 05:47 | +15:00 | 43 | 8m | | |
| 207 | COMP | | | ↑ | | | |
| 208 | 043 | 05:49 | +12:46 | 43 | 8m | em | |

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | | |
|-----------------------|---------------|----------------------|---------------------------|-------------------|-----|----------------------|
| Observer: <u>PB</u> | | Grating: <u>300g</u> | | Page: <u>4981</u> | | |
| PI: <u>Parkya</u> | | Date: <u>11/7/96</u> | | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 209 | COMP | | | ↑ | | seemingly blowing up |
| 210 | 049 | 0554 | +11:49 | 43 | 9m | em |
| 211 | COMP | | | ↑ | | |
| 212 | 051 | 0557 | +12:36 | 43 | 10m | |
| 213 | COMP | | | ↑ | | |
| 214 | 052 | 0558 | +13:13 | 43 | 6m | |
| 215 | COMP | | | ↑ | | |
| 216 | NGC807 m15.30 | 0601 | +14:05 | 3 | 4m | |
| 217 | COMP | | | ↑ | | |
| 218-222 | HD52971 | 06:57 | +17:13 | 0 | 5s | |
| 223 | COMP | | | ↑ | | |
| 224-226 | HD55284 | 07:12 | +17:35 | 0 | 5s | |
| 227 | COMP | | | ↑ | | |
| 228-230 | HD54364 | 07:08 | -11:55 | 0 | 5s | |
| 231 | COMP | | | ↑ | | clear @ dawn |
| 232-234 | HD54662 | 07:09 | -10:20 | 0 | 4s | |
| 235 | COMP | | | ↑ | | |
| 236-238 | HD55879 | 07:14 | -10:18 | 0 | 4s | |
| 239 | COMP | | | ↑ | | |
| 240-242 | HD57060 | 07:18 | -24:33 | 0 | 2s | |
| 243 | COMP | | | ↑ | | |
| 244-253 | BIAS | | | 0 | 0s | |
| 254-263 | FLAT | | | 0 | 6s | |
| 264-273 | BIAS | | | 0 | 0s | 6m by 2 |
| 274-283 | FLAT | | | 0 | 12s | " |
| 284-297 | DARK | | | 0 | 15m | 6m by 4 |

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | | |
|---|-------------|----------|--|-----|-------------------|----------|
| Observer: <u>P. Berlin</u> | | | Grating: <u>300L; 3" slit, binog 4</u> | | Page: <u>4982</u> | |
| PI: <u>Kenyon & Wilkes & Huchra</u> | | | Date: <u>11/8/96</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 1-10 | BIAS | | | 0 | 0s | |
| 11-20 | FLAT | | | 0 | 6s | |
| 21-25 | SKY | | | 0 | 2s | |
| 26 | COMP | | | ↑ | 5s | |
| 27-29 | HD 188947 | 19:56 | +35:05 | 0 | 1s | |
| 30 | COMP | | | ↑ | | |
| 31-33 | HD 192713 | 20:15 | +27:30 | 0 | 2s | |
| 34 | COMP | | | ↑ | | |
| 35-37 | HD 193092 | 20:16 | +10:21 | 0 | 2s | |
| 38 | COMP | | | ↑ | | |
| 39-41 | HD 197237 | 20:17 | +58:01 | 0 | 1s | |
| 42 | COMP | | | ↑ | | |
| 43-45 | HD 190864 | 20:05 | +35:36 | 0 | 5s | |
| 46 | COMP | | | ↑ | | |
| 47-49 | HD 186980 | 19:46 | +72:06 | 0 | 5s | |
| 50 | COMP | | | ↑ | | |
| 51-53 | HD 192281 | 20:10 | +40 | 0 | 5s | |
| 54 | COMP | | | ↑ | | |
| 55-57 | CS Cyg | 19:50 | +35:41 | 12 | 2, 20, 120s | |
| 58 | COMP | | | ↑ | | |
| 59, 60 | Z And | 23:33 | +48:49 | 12 | 3, 60 | |
| 61 | COMP | | | ↑ | | |
| 62 | MRK 335 | 00:19 | +20:12 | 6 | 2m | |
| 63 | COMP | | | ↑ | | |
| 64 | M 74 CG | 23:03 | +55:52 | 6 | 2m | |
| 65 | COMP | | | ↑ | | |
| 66 | BDp 284211 | 21:48 | +25:57 | 0 | 45s | |
| 67 | COMP | 21:48 14 | 26:51 15 | ↑ | | |
| 68 | 20578 p1879 | 20:57 | +18:39 | 98 | 5m | |
| 69 | COMP | | | ↑ | | |

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | Page: <u>4983</u> | |
|-------------------------------|----------------|-----------|---------------------------|-----|-------------------|----------------------------|
| Observer: <u>PB</u> | | | Grating: <u>X02</u> | | | |
| PI: <u>Geller & Grosz</u> | | | Date: <u>11/8/96</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 70 | Z0558 p0514 | 20:55 | +08:14 | 98 | 5m | |
| 71 | COMP | | | ↑ | | |
| 72 | Z0579 p0515 | 20:57 | +09:15 | 99 | 5m | em |
| 73 | COMP | | | ↑ | | |
| 74 | Z013836 m15.5 | 18:34 | +72:31 | 3 | 7m | wk em Emission Straggles ↓ |
| 75 | COMP | | | ↑ | | |
| 76 | Z013839 m15.5 | 18:40 | +72:36 | 3 | 8m | wk em |
| 77 | COMP | | | ↑ | | em @ 55:63 sup to ? jets |
| 78 | Z010758 m15.30 | 20:36 | +19:11 | 3 | 8m | bin by 2 lots of structure |
| 79 | COMP | | | ↑ | 10s | Low bright (off slit) |
| 80 | Z012353 m15.4 | 20:50 | +00:19 | 3 | 8m | bin by 2 sup to South |
| 81 | COMP | | | ↑ | | em |
| 82 | Z010557 m15.3 | 21:29 | -00:47 | 3 | 5m | |
| 83 | COMP | | | ↑ | | |
| 84 | A3061 | 21:16 | +15:32 | 42 | 7m | |
| 85 | COMP | | | ↑ | | |
| 86 | 0833F15E | 21:31 | +08:33 | 42 | 7m | em++ |
| 87 | 0833F1ND | 21:31 | +08:33 | 42 | 10m | em |
| 88 | COMP | | | ↑ | | |
| 89 | 134061 | 21:40 | +13:39 | 42 | 8m | |
| 90 | COMP | | | ↑ | | |
| 91 | BDp284211 | 21:48 | +28:37 | 0 | 45s | z02=1.05 |
| 92 | COMP | 21 5 14 | 28 3 7 18 | ↑ | | |
| 93 | 523.00101 | 23:34 | +09:42 | 55 | 7m | em |
| 94 | COMP | | | ↑ | | |
| 95 | 523.002112 | 23:45 | +09:47 | 55 | 7m | |
| 96 | COMP | | | ↑ | | |
| 97 | 523.002988 | 23:31 | +09:49 | 55 | 5m | |
| 98 | COMP | | | ↑ | | |
| 99 | 523.004172 | 23:36 | +09:54 | 55 | 8m | |

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | | |
|----------------------------------|------------|-------|---------------------------|-----|-------------------|---------------------------|
| Observer: <u>PB</u> | | | Grating: <u>300R</u> | | Page: <u>4984</u> | |
| PI: <u>Geller & Kirshner</u> | | | Date: <u>11/8/96</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 100 | COMP | | | ↑ | | |
| 101 | 523.006684 | 23:44 | +10:03 | SS | 12m | |
| 102 | COMP | | | ↑ | | Jupiter setting in clouds |
| 103 | 523.006790 | 23:34 | +10:03 | SS | 6m | Clear here |
| 104 | COMP | | | ↑ | | Seeing 1-2" |
| 105 | 523.076761 | 23:45 | +13:33 | SS | 8m | |
| 106 | COMP | | | ↑ | | |
| 107 | 523.074962 | 23:36 | +13:40 | SS | 8m | |
| 108 | COMP | | | ↑ | | |
| 109 | 523.077675 | 23:30 | +13:48 | SS | 10m | |
| 110 | COMP | | | ↑ | | |
| 111 | 523.078918 | 23:52 | +13:53 | SS | 10m | em++ |
| 112 | COMP | | | ↑ | | |
| 113 | 523.079883 | 23:46 | +13:56 | SS | 8m | |
| 114 | COMP | | | ↑ | | |
| 115-116 | BDp284211 | 21:48 | +28:42 | 0 | 45s | 1.3 |
| 117 | COMP | | | ↑ | | |
| 118 | 523.062857 | 23:40 | +14:06 | SS | 8m | |
| 119 | COMP | | | ↑ | | |
| 120 | 523.082944 | 23:48 | +14:06 | SS | 10m | |
| 121 | COMP | | | ↑ | | |
| 122 | 523.083833 | 23:38 | +14:09 | SS | 8m | |
| 123 | COMP | | | ↑ | | |
| 124 | 523.085944 | 23:40 | +14:15 | SS | 6m | |
| 125 | COMP | | | ↑ | | |
| 126 | 523.086558 | 23:34 | +14:17 | SS | 6m | am |
| 127 | COMP | | | ↑ | | |
| 128 | 523.086796 | 23:40 | +14:18 | SS | 6m | |
| 129 | COMP | | | ↑ | | |
| 130 | SN1996bo | 01:48 | +1:31 | 2 | 15m | bin by 2 |

| 60 inch Telescope Log | | | Spectrograph: <u>FA8</u> | | Page: <u>4985</u> | |
|--------------------------------|--------------|----------|--------------------------|-----|----------------------|--|
| Observer: <u>PB</u> | | | Grating: <u>300</u> | | Date: <u>11/8/96</u> | |
| PI: <u>Huchra & Geller</u> | | | | | | |
| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
| 131 | COMP | | | ↑ | 10s | |
| 132 | 0142100439.5 | 01:42:06 | +04:39 | SS | 20m | Southern Knot; em + LSB |
| 133 | COMP | | | ↑ | | |
| 134 | 467.006673 | 01:25 | +10:13 | SS | 5m | |
| 135 | COMP | | | ↑ | | |
| 136 | 467.059785 | 01:31 | +13:34 | SS | 10m | |
| 137 | COMP | | | ↑ | | |
| 138 | 467.061271 | 01:12 | +13:42 | SS | 10m | em |
| 139 | COMP | | | ↑ | | |
| 140 | 467.063887 | 01:16 | +13:54 | SS | 7m | em |
| 141 | COMP | | | ↑ | | |
| 142 | 467.064773 | 01:07 | +13:57 | SS | 7m | object @ row 35 = em gal on skt to E em |
| 143 | COMP | | | ↑ | | faint * @ row 43 |
| 144 | 467.067785 | 01:09 | +14:10 | SS | 7m | |
| 145 | COMP | | | ↑ | | |
| 146 | 467.070016 | 01:09 | +14:19 | SS | 4m | em |
| 147 | COMP | | | ↑ | | |
| 148 | 467.066257 | 01:27 | +14:03 | SS | 3m | |
| 149 | COMP | | | ↑ | | |
| 150 | 467.064433 | 01:30 | +13:55 | SS | 10m | em |
| 151 | COMP | | | ↑ | | |
| 152 | 467.071744 | 01:30 | +14:26 | SS | 7m | thin cloud to the N |
| 153 | COMP | | | ↑ | | |
| 154 | 467.074714 | 01:30 | +14:39 | SS | 7m | em |
| 155 | COMP | | | ↑ | | |
| 156 | 467.075630 | 01:07 | +14:44 | SS | 5m | |
| 157 | COMP | | | ↑ | | |
| 158 | 467.078992 | 01:11 | +14:58 | SS | 5m | |
| 159 | COMP | | | ↑ | | |
| 160 | 467.079419 | 01:11 | +15:01 | SS | 7m | em |

| 60 inch Telescope Log | | | | Spectrograph: <u>FAST</u> | | |
|--------------------------------------|----------------|----------|-----------|---------------------------|---------|---------------------------|
| Observer: <u>PB</u> | | | | Grating: <u>3000</u> | | Page: <u>4986</u> |
| PI: <u>Geller / Kenyon / Pantaja</u> | | | | Date: <u>11/8/86</u> | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 161 | COMP | | | ↑ | | |
| 162 | 467.060550 | 01:23 | +15:04 | SS | 7m | em |
| 163 | COMP | | | ↑ | | |
| 164 | 467.077478 | 01:25 | +14:51 | SS | 2m | |
| 165 | COMP | | | ↑ | | |
| 166 | 467.075990 | 01:31 | +14:44 | SS | 6m | |
| 167 | COMP | | | ↑ | | |
| 168 | 467.077055 | 01:25 | +14:50 | SS | 2m | |
| 169 | COMP | | | ↑ | | |
| 170 | 467.075550 | 01:28 | +14:43 | SS | 6m | em |
| 171 | COMP | | | ↑ | | |
| 172-173 | AKB | 01:36 | +54:15 | 12 | 10, 90s | |
| 174 | COMP | | | ↑ | | |
| 175 | A001073 m15.50 | 02:04 | +47:56 | 3 | 3m | EF strepslers ↓ * to W |
| 176 | COMP | | | ↑ | | |
| 177 | N003359 m15.50 | 02:26 | +50:02 | 3 | 3m | |
| 178 | COMP | | | ↑ | | |
| 179 | Z001577 m13.90 | 02:18 | +57:05 | 3 | 5m | LSB em |
| 180 | COMP | | | ↑ | | |
| 181 | Z015016 m15.50 | 02:36 | +54:35 | 3 | 6m | WK em * to W |
| 182 | COMP | | | ↑ | | seeing worse |
| 183-184 | DLT em | 04:33 | +25:20 | 12 | 20, 3m | |
| 185 | COMP | | | ↑ | | |
| 186-187 | DRT em | 04:47 | +16:58 | 3 | 10, 2m | |
| 188 | COMP | | | ↑ | | |
| 189 | 028 | 05:38 | +17:24 | 43 | 15m | WK em |
| 190 | COMP | | | ↑ | | |
| 191 | 029 | 05:42:21 | +22:36:46 | 43 | 30s | ZAMS * w/ jets + shock! |
| 192 | 029N | 05:42:21 | +22:36:46 | 43 | 6m | nebulae - jets |
| 193 | COMP | | | ↑ | | WK em |

| 60 inch Telescope Log | | | | Spectrograph: <u>FAST</u> | | Page: <u>4957</u> | |
|-----------------------|-----------------|-------|--------|---------------------------|-----|---------------------|--|
| Observer: <u>PB</u> | | | | Grating: <u>300L</u> | | | |
| PI: <u>Pintoja</u> | | | | Date: <u>11/8/96</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments | |
| 194 | 030 | 05:39 | R9-08 | 43 | 15m | | |
| 195 | COMP | | | ↑ | | | |
| 196 | 035 | 05:45 | H7:35 | 43 | 15m | 2 objects; wk no em | |
| 197 | COMP | | | ↑ | | | |
| 198 | 036 | 05:45 | H4:47 | 43 | 15m | wk | |
| 199 | COMP | | | ↑ | | Seeing worse | |
| 200 | 059 | 06:02 | +09:11 | 43 | 12m | | |
| 201 | COMP | | | ↑ | | | |
| 202 | Hiltner 60 | 06:42 | +02 | 0 | 45s | | |
| 203 | COMP | | | ↑ | | | |
| 204 | 060 | 06:02 | +28:08 | 43 | 10m | * to W bin by 2 | |
| 205 | COMP | | | ↑ | | | |
| 206 | 061 | 06:04 | +32:25 | 43 | 10m | | |
| 207 | COMP | | | ↑ | | | |
| 208 | 065 | 06:12 | +38:42 | 43 | 10m | | |
| 209 | COMP | | | ↑ | | | |
| 210 | 053 | 06:58 | +38:14 | 43 | 12m | | |
| 211 | COMP | | | ↑ | | Seeing > 2-3" | |
| 212 | 054 | 06:58 | +28:52 | 43 | 15m | | |
| 213 | COMP | | | ↑ | | Seeing >> 5" | |
| 214 | 073 | 06:16 | +03:11 | 43 | 5m | wk em | |
| 215 | COMP | | | ↑ | | | |
| 216 | Z009625, m15.30 | 08:18 | H1:37 | 3 | 10m | | |
| 217 | COMP | | | ↑ | | | |
| 218 | Z009778, m15.30 | 09:09 | H9:24 | 3 | 7m | | |
| 219 | COMP | | | ↑ | | | |
| 220-222 | N315 | 10:02 | -07:28 | 0 | 3m | | |
| 223 | COMP | | | ↑ | | | |
| 224-228 | HDS2971 | 06:57 | +27:13 | 0 | 6s | | |
| 229 | COMP | | | ↑ | | | |

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | Page: <u>4788</u> | |
|-----------------------|-----------|-------|---------------------------|-----|-------------------|-----------------------|
| Observer: <u>PB</u> | | | Grating: <u>300</u> | | | |
| PI: <u>AA</u> | | | Date: <u>11/8/96</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 230-232 | HD 256036 | 06-22 | 172-52 | 0 | 6s | |
| 233 | COMP | | | ↑ | | |
| 238-240 | HD 45087 | 06-26 | 171-04 | 0 | 6s | u. for changes camera |
| 241 | COMP | | | ↑ | | down |
| 242-244 | HD 45714 | 06-27 | 174-53 | 0 | 4s | |
| 245 | COMP | | | ↑ | | |
| 246-248 | HD 46223 | 06-29 | 174-49 | 0 | 6s | |
| 249 | COMP | | | ↑ | | |
| 250-252 | HD 46150 | 06-31 | 174-55 | 0 | 6s | |
| 253 | COMP | | | ↑ | | |
| 254-256 | HD 47129 | 06-37 | 06-07 | 0 | 4s | |
| 257 | COMP | | | ↑ | | |
| 258-267 | BIAS | | | 0 | 0s | |
| 268-277 | FLAT | | | 0 | 6s | |
| 278-287 | BIAS | | | 0 | 0s | bin by 2 |
| 288-297 | FLAT | | | 0 | 12s | bin by 2 |

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | Page: <u>4989</u> | |
|-------------------------|----------------|--------|---------------------------|-----|-------------------|-----------------|
| Observer: <u>PBernd</u> | | | Grating: <u>RUR</u> | | | |
| PI: <u>Gretter</u> | | | Date: <u>11/9/96</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 1-10 | BIAS | | | 0 | 0s | bin by 4 |
| 11-20 | FLAT | | | 0 | 6s | " |
| 21-30 | BIAS | | | 0 | 0s | bin by 2 |
| 31-40 | FLAT | | | 0 | 12s | " |
| 41-45 | sky | zenith | | 0 | 2s | bin by 4 |
| 46 | COMP | | | ↑ | 5s | |
| 47-49 | HD 186512 | 19:55 | +06:24 | 0 | 1s | Cirrus to S+W |
| 50 | COMP | | | ↑ | | |
| 51-53 | HD 193570 | 20:18 | +24:58 | 0 | 3s | |
| 54 | COMP | | | ↑ | | |
| 55-57 | HD 192639 | 20:14 | +37:21 | 0 | 4s | |
| 58 | COMP | | | ↑ | | |
| 59-61 | HD 193522 | 20:18 | +40:43 | 0 | 4s | |
| 62 | COMP | | | ↑ | | |
| 63-66 | HD 192661 | 20:10 | +40 | 12 | 5s | |
| 67 | COMP | | | ↑ | | |
| 68-70 | CX Cyg | 19:50 | +35:41 | 12 | 2, 20, 120 | |
| 71 | COMP | | | ↑ | | |
| 72-73 | ZAnd | 23:33 | +48:49 | 12 | 3, 60s | |
| 74 | COMP | | | ↑ | | |
| 75 | MRK 335 | 00:03 | +4:55 | 6 | 2m | |
| 76 | COMP | | | ↑ | | |
| 77 | NG 469 | 23:03 | +08:52 | 6 | 2m | |
| 78 | COMP | | | ↑ | | |
| 79-80 | Comet HB | 17:45 | -02:40 | 0 | 45s, 90s | MIC; 20" N |
| 81 | COMP | | | ↑ | | |
| 82 | NOO 0485-11.70 | 18:08 | +11:42 | 3 | 5m | Wk com piz 2100 |
| 83 | COMP | | | ↑ | | |
| 84 | ZOO 5042m 4.8 | 12:03 | +36:33 | 3 | 4m | |
| 85 | COMP | | | ↑ | | |

| 60 inch Telescope Log | | Spectrograph: <u>F16T</u> | | Page: <u>4990</u> | | |
|-----------------------|--------------|---------------------------|--------|-------------------|-----|-----------------|
| Observer: <u>PB</u> | | Grating: <u>202</u> | | | | |
| PI: <u>Gretter</u> | | Date: <u>11/9/96</u> | | | | |
| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
| 86 | 2001964m1410 | 2254 | +22:04 | 3 | 3m | |
| 87 | COMP | | | ↑ | | |
| 88 | 520.032953 | 22:22 | +11:04 | 3 | 18m | |
| 89 | COMP | | | ↑ | | |
| 90 | 520.058231 | 22:31 | +11:19 | 3 | 20m | wk em |
| 91 | COMP | | | ↑ | | |
| 92 | 520.041812 | 22:37 | +11:27 | 3 | 20m | |
| 93 | COMP | | | ↑ | | |
| 94 | 523.087122 | 23:48 | +14:19 | SS | 15m | |
| 95 | COMP | | | ↑ | | |
| 96 | 523.089764 | 23:30 | +14:27 | SS | 17m | em |
| 97 | COMP | | | ↑ | | |
| 98 | 523.089891 | 23:47 | +14:28 | SS | 12m | em |
| 99 | COMP | | | ↑ | | clouds in the W |
| 100 | 523.089903 | 23:46 | +14:29 | SS | 15m | wk em |
| 101 | COMP | | | ↑ | | |
| 102 | 520.090299 | 23:48 | +14:30 | SS | 7m | |
| 103 | COMP | | | ↑ | | |
| 104 | 523.091079 | 23:36 | +14:31 | SS | 9m | |
| 105 | COMP | | | ↑ | | |
| 106 | 523.091466 | 23:34 | +14:33 | SS | 8m | wk |
| 107 | COMP | | | ↑ | | |
| 108 | 523.091532 | 23:39 | +14:38 | SS | 10m | |
| 109 | COMP | | | ↑ | | |
| 110 | 523.093569 | 23:37 | +14:41 | SS | 10m | |
| 111 | COMP | | | ↑ | | |
| 112 | 523.094206 | 23:51 | +14:42 | SS | 6m | wk |
| 113 | COMP | | | ↑ | | |
| 114 | 523.097160 | 23:36 | +14:53 | SS | 7m | |
| 115 | COMP | | | ↑ | | |

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | Page: <u>4991</u> | |
|--------------------------------|-------------|-------|---------------------------|-----|-------------------|--------------------------------|
| Observer: <u>PB</u> | | | Grating: <u>3002</u> | | | |
| PI: <u>Geller/Grosz/Huchra</u> | | | Date: <u>11/9/96</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 116 | 523.099669 | 23:41 | +15:40 | SS | 8m | |
| 117 | COMP | | | ↑ | | |
| 118 | 523.099851 | 23:41 | +15:02 | SS | 7m | |
| 119 | COMP | | | ↑ | | |
| 120 | 523.100204 | 23:41 | +15:03 | SS | 8m | |
| 121 | COMP | | | ↑ | | |
| 122 | 523.100534 | 23:41 | +15:05 | SS | 8m | em |
| 123 | COMP | | | ↑ | | |
| 124 | 523.100850 | 23:41 | +15:14 | SS | 7m | em |
| 125 | COMP | | | ↑ | | |
| 126 | 523.102282 | 23:36 | +15:20 | SS | 12m | |
| 127 | COMP | | | ↑ | | |
| 128 | 523.107191 | 23:51 | +15:27 | SS | 7m | |
| 129 | COMP | | | ↑ | | |
| 130 | 523.110476 | 23:38 | +15:38 | SS | 8m | em |
| 131 | COMP | | | ↑ | | |
| 132 | 523.112198 | 23:52 | +15:42 | SS | 7m | finishes the list! |
| 133 | COMP | | | ↑ | | |
| 134 | 01421p0439N | 01:42 | +04:39 | 53 | 12m | em! S Knot obs yesterday |
| 135 | COMP | | | ↑ | | H, ST, NO N LOW COUNTS IN COMP |
| 136 | 1823F1 | 23:40 | +16:25 | 42 | 3m | |
| 137 | COMP | | | ↑ | | |
| 138 | 1823F2 | 23:40 | +16:22 | 42 | 4m | #140 also on chip (S |
| 139 | COMP | | | ↑ | | |
| 140 | 1823F3 | 23:40 | +16:22 | 42 | 2m | strong em! |
| 141 | COMP | | | ↑ | | |
| 142 | 02306p1019 | 02:33 | +10:31 | 53 | 8m | LSB binby2 at the mag 1 |
| 143 | COMP | | | ↑ | | |
| 144 | 02303p3317 | 02:30 | +10:16 | 53 | 5m | wKen @ fix 2020 |
| 145 | COMP | | | ↑ | | |

file 142 - there is some fuzz below middle star -
 extended thin bit there is almost nothing
 there - no emission - called at
 file (143 w)

| 60 inch Telescope Log | | Spectrograph: <u>FAST</u> | | Page: <u>499Z</u> | | |
|-----------------------|---------------|---------------------------|--------|----------------------|--------------|--------------------|
| Observer: <u>PB</u> | | Grating: <u>300</u> | | Date: <u>11/9/96</u> | | |
| PI: <u>Geller</u> | | | | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 146 | 467.085213 | 01:15 | +15:24 | SS | 6m | |
| 147 | COMP | | | ↑ | | clear |
| 148 | 467.086012 | 01:11 | +15:27 | SS | 7m | seeing ~2" |
| 149 | COMP | | | ↑ | | |
| 150 | 467.086588S | 01:12 | +15:30 | SS | 7m | |
| 151 | 467.086588N | 01:12 | +15:30 | SS | 7m | |
| 152 | COMP | | | ↑ | | |
| 153 | 467.086810 | 01:13 | +15:30 | SS | 7m | |
| 154 | COMP | | | ↑ | | |
| 155 | 467.087016 | 01:14 | +15:32 | SS | 8m | em |
| 156 | COMP | | | ↑ | | |
| 157 | 467.087217 | 01:12 | +15:32 | SS | 5m | |
| 158 | COMP | | | ↑ | | |
| 159 | 467.087923 | 01:12 | +15:35 | SS | 8m | |
| 160 | COMP | | | ↑ | | |
| 161 | 467.087924 | 01:14 | +15:35 | SS | 7m | em |
| 162 | COMP | | | ↑ | | |
| 163 | 467.088011 | 01:12 | +15:36 | SS | 5m | Finishes the list! |
| 164 | COMP | | | ↑ | | |
| 165-167 | AKR | 01:36 | +54:15 | 12 | 10s, 40s, 5s | |
| 168 | COMP | | | ↑ | | OBJECT IN COMP |
| 169 | Z014916M15.50 | 01:19 | +22:00 | 3 | 4m | |
| 170 | COMP | | | ↑ | | |
| 171 | Z010627M15.30 | 01:52 | +01:20 | 3 | 7m | em |
| 172 | COMP | | | ↑ | | |
| 173 | Z014852M15.50 | 02:03 | +18:17 | 3 | 7m | em |
| 174 | COMP | | | ↑ | | |
| 175 | 469.059693 | 02:09 | +12:50 | 3 | 18m | |
| 176 | COMP | | | ↑ | | |
| 177 | 471.059924 | 02:43 | +11:05 | 3 | 20m | |

USED
 COMP 170 for files 165-167.
 7 sec must be off

| 60 inch Telescope Log | | Spectrograph: <u>FAST</u> | | Page: <u>4993</u> | | |
|-----------------------|-------------|---------------------------|--------|----------------------|-----------|--|
| Observer: <u>PB</u> | | Grating: <u>3002</u> | | Date: <u>11/9/96</u> | | |
| PI: _____ | | | | | | |
| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
| 178 | COMP | | | ↑ | | |
| 179 | 471.092433 | 03:01 | +13:24 | 3 | 18m | |
| 180 | COMP | | | ↑ | | seeing variable |
| 181 | Akn 120 | 05:16 | +00:09 | 6 | 2m | |
| 182 | COMP | | | ↑ | | clear skies |
| 183-184 | DL Tau | 04:33 | +25:20 | 12 | 20sec, 3m | |
| 185 | COMP | | | ↑ | | |
| 186-187 | DRTau | 04:47 | +16:58 | 12 | 10sec, 2m | |
| 188 | COMP | | | ↑ | | |
| 189 | Hiltner 600 | 06:51 | | 0 | 45 sec | |
| 190 | COMP | | | ↑ | | |
| 191 | 078 | 06:19 | +30:30 | 43 | 15m | |
| 192 | COMP | | | ↑ | | |
| 193 | 084 | 06:25 | +25:43 | 43 | 8m | ← nice one to use as a template for the rest of these heavily extracted gals |
| 194 | COMP | | | ↑ | | |
| 195 | 092 | 06:36 | +20:54 | 43 | 12m | |
| 196 | COMP | | | ↑ | | |
| 197 | 097 | 06:39 | +23:57 | 43 | 15m | |
| 198 | COMP | | | ↑ | | |
| 199 | 105 | 06:46 | +18:03 | 43 | 13m | em |
| 200 | COMP | | | ↑ | | |
| 201 | 107 | 06:51 | +16:17 | 43 | 4m | new supernova! on nucleus |
| 202 | COMP | | | ↑ | | |
| 203 | 108 | 06:52 | +15:14 | 43 | 4m | |
| 204 | COMP | | | ↑ | | |
| 205 | 109 | 06:52 | +14:47 | 43 | 3m | |
| 206 | COMP | | | ↑ | | |
| 207 | 136 | 06:55 | +15:30 | 43 | 5m | |
| 208 | COMP | | | ↑ | | |
| 209 | 133 | 07:05 | +12:49 | 43 | 10m | em |

| 60 inch Telescope Log | | Spectrograph: FAST | | Page: 4995 | | |
|------------------------------|--------------------|------------------------------|--------|----------------|---------------|----------|
| Observer: H. Arce | | Grating: 300 μ ; 3" slit | | Date: 11/10/96 | | |
| PI: Kenyon & Wilkes & Geller | | | | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 1-10 | Bias | - | - | 0 | 0s | bin by 4 |
| 11-20 | Flats | - | - | 0 | 6s | " " " |
| 21-30 | Bias | - | - | 0 | 0s | bin by 2 |
| 31-40 | Flats | - | - | 0 | 12s | bin by 2 |
| 41-44 | Sky | - | - | 0 | 2s | |
| 45 | Sky | - | - | 0 | 4s | |
| 46 | Comp | | | ↑ | | |
| 47-49 | CICy | 19:50 | +35:41 | 12 | 2, 20, 120sec | |
| 50 | Comp | | | ↑ | | |
| 51-52 | Z And | 23:33 | +48:19 | 12 | 3, 60sec | |
| 53 | Comp | | | | | |
| 54 | BD α 284211 | 22:51 | +28:52 | 0 | 45s | |
| 55 | Comp | | | ↑ | | |
| 56 | MRK 335 | 00:06 | +20:11 | 6 | 2m | |
| 57 | Comp | | | ↑ | | |
| 58 | N7469 | 23:03 | +08:51 | 6 | 2m | |
| 59 | Comp | | | ↑ | | |
| 60 | MRK 509 | 20:44 | -10:43 | 6 | 2m | |
| 61 | Comp | | | | | |
| 62 | 520.039014 | 22:42 | +11:19 | 3 | 20m | |
| 63 | Comp | | | ↑ | | |
| 64 | 520.033005 | 22:43 | +11:04 | 3 | 20m | |
| 65 | Comp | | | ↑ | | |
| 66 | 520.046970 | 22:50 | +11:56 | 3 | 20m | |
| 67 | Comp | | | ↑ | | |
| 68 | 524.048867 | 00:03 | +08:17 | 55 | 20m | clouds |
| 69 | Comp | | | ↑ | | |
| 70 | 524.048382 | 23:59 | +08:15 | 55 | 12m | |
| 71 | Comp | | | | | |
| 72 | 524.049567 | 00:07 | +08:22 | 55 | 7m | |

60 inch Telescope Log

Observer: H. ArcePI: Geller / Kenyon / KirshnerSpectrograph: FASTGrating: 3002, 3" slitPage: 5996Date: 11/10/96

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|---------|------------|-------|--------|-----|---------|----------|
| 73 | Comp | - | - | ↑ | | |
| 74 | 524.049763 | 00:04 | +08:23 | 55 | 7m | |
| 75 | Comp | | | ↑ | | |
| 76 | Feige 110 | 23:18 | -05:27 | 0 | 2m | |
| 77 | Comp | | | ↑ | | |
| 78 | 524.048392 | 23:58 | 08:15 | 55 | 7m | |
| 79 | Comp | | | ↑ | | |
| 80 | 524.047580 | 00:09 | +08:10 | 55 | 15m | |
| 81 | Comp | | | ↑ | | |
| 82-83 | AxPer | 01:26 | +54:15 | 12 | 5s, 90s | |
| 84 | Comp | | | ↑ | | |
| 85 | Feige 25 | 02:38 | +05:27 | 0 | 2m | |
| 86 | Comp | | | ↑ | | |
| 87 | SN1996bo | 01:48 | +11:30 | 2 | 15m | bin by 2 |
| 88 | Comp | | | ↑ | | |
| 89 | 524.043477 | 23:58 | +07:44 | 55 | 10m | |
| 90 | Comp | | | ↑ | | |
| 91 | 524.046949 | 00:04 | +08:06 | 55 | 12m | |
| 92 | Comp | | | ↑ | | |
| 93 | 524.047445 | 00:00 | +08:09 | 55 | 7m | |
| 94 | Comp | | | ↑ | | |
| 95 | 524.008141 | 00:03 | +04:17 | 55 | 7m | |
| 96 | Comp | | | ↑ | | |
| 97 | 524.017749 | 00:14 | +05:14 | 55 | 7m | |
| 98 | Comp | | | ↑ | | |
| 99 | DL Tau | 04:32 | +25:20 | 12 | 20sec | |
| 100 | DL Tau | 04:33 | +25:20 | 12 | 3m | |
| 101 | Comp | | | ↑ | | |
| 102-103 | DR Tau | 04:47 | +16:57 | 12 | 10s, 2m | |
| 104 | Comp | | | ↑ | | |

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | Page: <u>4997</u> | |
|-------------------------------------|-----------------|-------|-------------------------------|-----|-------------------|----------------------|
| Observer: <u>H. Arce</u> | | | Grating: <u>300L; 3" slit</u> | | | |
| PI: <u>Arce / Briceño / Prosser</u> | | | Date: <u>11/10/96</u> | | | |
| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
| 105 | H α 14 | 04:41 | +10:58 | 0 | 2m | |
| 106 | comp | | | ↑ | | |
| 107 | 111105 | 04:22 | +25:48 | 37 | 20m | |
| 108 | comp | | | ↑ | | |
| 109 | 101095 | 04:22 | +25:27 | 37 | 6m | |
| 110 | comp | | | ↑ | | |
| 111 | 081075 | 04:22 | +24:49 | 37 | 7m | |
| 112 | comp | | | ↑ | | |
| 113 | 021011 | 04:22 | +23:05 | 37 | 6m | |
| 114 | comp | | | ↑ | | |
| 115 | Tau 6 SSE - 2el | 04:32 | +17:53 | 38 | 20m | |
| 116 | comp | | | ↑ | | |
| 117 | Tau 6 SE - 10el | 04:32 | +17:58 | 38 | 20m | |
| 118 | comp | | | ↑ | | |
| 119 | 011005 | 04:22 | +22:28 | 37 | 5m | |
| 120 | comp | | | ↑ | | |
| 121 | 041033 | 04:22 | +23:37 | 37 | 8m | |
| 122 | comp | | | ↑ | | |
| 123 | 121115 | 04:22 | +20:08 | 37 | 3m | |
| 124 | comp | | | ↑ | | |
| 125 | L101 | 04:23 | +25:06 | 37 | 1m | |
| 126 | comp | | | ↑ | | |
| 127 | N22.1 | 04:22 | +25:46 | 37 | 8m | |
| 128 | comp | | | ↑ | | |
| 129 | Tau 2 NW 47 | 04:18 | +28:26 | 38 | 15m | clouds, no detection |
| 130 | comp | | | ↑ | | |
| 131 | Hiltner 600 | 06:45 | +02:07 | 0 | 30s | |
| 132 | comp | | | ↑ | | |
| 133 | f2 Na | 06:27 | -04:31 | 20 | 5m | |
| 134 | comp | | | ↑ | | |

60 inch Telescope Log
 Observer: H. Arce
 PI: Kenkon Wilkins/Beller/Arce
 Spectrograph: FAST
 Grating: 300g, 3" slit
 Date: 11/11/96
 Page: 4999

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|------------|-------|--------|-----|-------------|---|
| 1-10 | Bias | - | - | 0 | 0s | |
| 11-20 | Flats | - | - | 0 | 60s | |
| 21-30 | Bias | - | - | 0 | 0s | bin by 2 |
| 31-40 | Flats | - | - | 0 | 12s | bin by 2 |
| 41-45 | Sky | - | - | 0 | 2s | bin by 4 ↓ |
| 46 | comp | - | - | ↑ | | |
| 47 | BDp284211 | 21:51 | +28:51 | 0 | 45s | |
| 48 | comp | | | ↑ | | |
| 49-51 | CI Cys | 19:50 | +35:41 | 12 | 2s, 20s, 2m | clouds |
| 52 | comp | | | ↑ | | |
| 53-54 | Z And | 22:33 | +18:49 | 12 | 3s, 60s | clouds |
| 55 | comp | | | ↑ | | |
| 56 | N7469 | 23:03 | +08:51 | 6 | 2m | clouds |
| 57 | comp | | | | | |
| 58 | MRK 335 | 00:05 | +19:55 | 6 | 5m | |
| 59 | comp | | | ↑ | | |
| 60 | HD 217086 | 22:56 | +62:43 | 0 | 5s | |
| 61 | comp | | | ↑ | | |
| 62 | 521.051990 | 22:52 | +12:11 | 3 | 25m | |
| 63 | comp | | | ↑ | | |
| 64 | 522.045943 | 23:11 | +12:04 | 3 | 30m | |
| 65 | comp | | | ↑ | | |
| 66 | 524.007636 | 23:56 | +04:01 | 55 | 20m | clouds white interesting |
| 67 | comp | | | ↑ | | |
| 68 | 524.094914 | 23:54 | +07:52 | 55 | 20m | clouds white int. with ^{and} _{object} |
| 69 | comp | | | ↑ | | |
| 70 | N5.4 | 04:22 | +23:08 | 37 | 3m | clouds white int. |
| 71 | comp | | | ↑ | | |
| 72 | N5.3 | 04:22 | +23:04 | 37 | 3m | |
| 73 | comp | | | ↑ | | |

68 is a star
 as the ~~the~~ correct
 object - check
 fairly close

68 is incorrect object
 READ

| 60 inch Telescope Log | | | | Spectrograph: FAST | | |
|-----------------------------|------------|-------|--------|------------------------|---------|------------|
| Observer: H. Arce | | | | Grating: 300L, 3" slit | | Page: 5000 |
| PI: Arce / Kenyon / Briceño | | | | Date: 11/11/96 | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 74 | N5.5 | 04:22 | +23:04 | 37 | 2m | clouds |
| 75 | comp | | | ↑ | | |
| 76 | N23.1 | 04:22 | +25:55 | 37 | 2m | clouds |
| 77 | comp | | | ↑ | | |
| 78 | PG0216p032 | 02:19 | +03:25 | 0 | 5m | clouds |
| 79 | comp | | | ↑ | | |
| 80-81 | Ax Per | 01:36 | +54:15 | 12 | 20s, 5m | clouds |
| 82 | comp | | | ↑ | | |
| 83 | B2.1 | 04:21 | +27:15 | 37 | 5m | clouds |
| 84 | comp | | | ↑ | | |
| 85 | N21.1 | 04:22 | +25:45 | 37 | 7m | clouds |
| 86 | comp | | | ↑ | | |
| 87 | N21.2 | 04:22 | +25:44 | 37 | 6m | clouds |
| 88 | comp | | | ↑ | | |
| 89 | N14.5.2 | 04:22 | +24:40 | 37 | 10m | clouds |
| 90 | comp | | | ↑ | | |
| 91 | N14.5.1 | 04:22 | +24:37 | 37 | 10m | clouds |
| 92 | comp | | | ↑ | | |
| 93 | B2.2 | 04:21 | +27:10 | 37 | 10m | clouds |
| 94 | comp | | | ↑ | | |
| 95 | Tau6SSW235 | 04:31 | +17:56 | 38 | 10m | |
| 96 | comp | | | ↑ | | |
| 97-98 | DL Tau | 04:33 | 25:20 | 12 | 20s, 6m | clouds |
| 99 | comp | | | ↑ | | |
| 100-101 | DRTau | 04:47 | +16:58 | 12 | 20s, 3m | clouds |
| 102 | comp | | | ↑ | | |
| 103 | HZ14 | 04:40 | +10:59 | 0 | 3m | |
| 104 | comp | | | ↑ | | |
| 105 | TauSSW98 | 04:31 | +17:53 | 38 | 20m | |
| 106 | comp | | | ↑ | | |

| 60 inch Telescope Log | | | Spectrograph: FAST | | | |
|---------------------------------------|-------------|-------|-------------------------------|-----|-------------------|----------|
| Observer: <u>H. Arce</u> | | | Grating: <u>300L, 3" slit</u> | | Page: <u>5001</u> | |
| PI: <u>Arce / Krishnaec / Pantaja</u> | | | Date: <u>11/11/96</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 107 | Ld.1 | 04:21 | +25:20 | 37 | 20m | clouds |
| 108 | comp | | | ↑ | | |
| 109 | N5.1 | 04:22 | +23:06 | 37 | 20m | clouds |
| 110 | comp | | | ↑ | | |
| 111 | SN1996bt | 06:51 | +16:17 | 2 | 15m | bin by 2 |
| 112 | comp | | | ↑ | | |
| 113 | 104 | 06:48 | +11:51 | 43 | 15m | |
| 114 | comp | | | ↑ | | |
| 115 | 115 | 06:53 | +11:22 | 43 | 20m | |
| 116 | comp | | | ↑ | | |
| 117 | Hiltner 600 | 06:45 | +02:08 | 0 | 3m | |
| 118 | comp | | | ↑ | | |
| 119 | 044 | 05:55 | +39:05 | 43 | 20m | |
| 120 | comp | | | ↑ | | |
| 121 | 114 | 06:53 | +14:13 | 43 | 18m | |
| 122 | comp | | | ↑ | | |
| 123 | 127 | 06:59 | +06:14 | 43 | 8m | |
| 124 | comp | | | ↑ | | |
| 125 | 137 | 07:05 | +01:38 | 43 | 10m | |
| 126 | comp | | | ↑ | | |
| 127 | 138 | 07:05 | +10:20 | 43 | 8m | |
| 128 | comp | | | ↑ | | |
| 129 | 140 | 07:05 | +14:44 | 43 | 10m | |
| 130 | comp | | | ↑ | | |
| 131 | Feige 34 | 10:39 | +43:06 | 0 | 2m | |
| 132 | comp | | | ↑ | | |
| 133 | HD 52971 | 07:00 | +27:09 | 0 | 10s | |
| 134 | comp | | | ↑ | | |
| 135 | N3031 | 09:55 | +69:04 | 0 | 2m | |
| 136 | comp | | | ↑ | | |

60 inch Telescope Log

Observer: H. ArcePI: Kenyon/W. Iles & GellerSpectrograph: FASTGrating: 3029, 3" slitPage: 5003Date: 11/12/96

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|------------|-------|--------|-----|------------|--|
| 1-10 | Bias | - | - | 0 | 0s | |
| 11-20 | Flat | - | - | 0 | 6s | |
| 21-30 | Bias | - | - | 0 | 0s | bin by 2 |
| 31-40 | Flat | - | - | 0 | 12s | bin by 2 |
| 41-45 | sky | - | - | 0 | 25 | bin by 4 ↓ |
| 46 | comp | - | - | ↑ | | |
| 47 | BDp284211 | 21:50 | +28:40 | 0 | 45s | |
| 48 | comp | | | ↑ | | |
| 49-50 | Z And | 23:33 | +48:49 | 12 | 3s, 1m | |
| 51 | comp | | | ↑ | | |
| 52-54 | C1 Cys | 19:50 | +35:40 | 12 | 2s, 20, 2m | |
| 55 | comp | | | ↑ | | |
| 56 | 3C390.3 | 18:42 | +79:46 | 6 | 6m | |
| 57 | comp | | | ↑ | | |
| 58 | HD217086 | 22:56 | +67:43 | 0 | 5s | |
| 59 | comp | | | ↑ | | |
| 60 | N7469 | 23:03 | +08:51 | 6 | 2m | |
| 61 | comp | | | ↑ | | |
| 62 | MRK335 | 00:04 | +19:57 | 6 | 2m | |
| 63 | comp | | | ↑ | | |
| 64 | 521.031589 | 23:03 | +11:08 | 3 | 25m | There could be the emission of cosmic ray. ~6800 A |
| 65 | comp | | | ↑ | | |
| 66 | 521.054066 | 22:54 | +12:17 | 3 | 30m | |
| 67 | comp | | | ↑ | | |
| 68 | 521.046341 | 22:52 | +11:54 | 3 | 25m | |
| 69 | comp | | | ↑ | | |
| 70 | 465.042318 | 00:29 | +13:18 | 3 | 16m | |
| 71 | comp | | | ↑ | | |
| 72 | 465.015673 | 00:17 | +10:55 | 3 | 18m | |
| 73 | comp | | | ↑ | | |

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | | Page: <u>5004</u> |
|---|-------------|-------|-------------------------------|-----|---------|--------------------------------------|
| Observer: <u>H. Arce</u> | | | Grating: <u>3000, 3" slit</u> | | | |
| PI: <u>Geller & Barton & Kenyon</u> | | | Date: <u>11/12/196</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 74 | 524.009997 | 00:04 | +04:28 | 55 | 10m | |
| 75 | comp | | | ↑ | | |
| 76 | 524.03993 | 00:08 | +04:52 | 55 | 8m | |
| 77 | comp | | | ↑ | | |
| 78 | 524.014366 | 00:01 | +04:54 | 55 | 10m | There could be Hd. cen. near 6800 Å. |
| 79 | comp | | | ↑ | | |
| 80 | 524.014451 | 00:14 | +04:54 | 55 | 8m | |
| 81 | comp | | | ↑ | | |
| 82 | 524.017934 | 00:02 | +05:15 | 55 | 5m | |
| 83 | comp | | | ↑ | | |
| 84 | 524.018498 | 00:06 | +05:18 | 55 | 5m | |
| 85 | comp | | | ↑ | | |
| 86 | 524.018296 | 00:01 | +05:17 | 55 | 12m | |
| 87 | comp | | | ↑ | | |
| 88 | gr921-galZA | 01:25 | +34:43 | 33 | 8m | |
| 89 | comp | | | ↑ | | |
| 90 | gr921-galZB | 01:27 | +34:45 | 33 | 5m | |
| 91 | comp | | | ↑ | | |
| 92-93 | AXPer | 01:36 | +54:15 | 12 | 5s, 90s | |
| 94 | comp | | | ↑ | | |
| 95 | Feige 24 | 02:35 | +03:43 | 0 | 2m | |
| 96 | comp | | | ↑ | | |
| 97 | 524.032817 | 00:18 | +06:41 | 55 | 5m | |
| 98 | comp | | | ↑ | | |
| 99 | 524.041576 | 00:00 | +07:33 | 55 | 8m | |
| 100 | comp | | | ↑ | | |
| 101 | 524.022450 | 03:56 | +05:42 | 55 | 8m | |
| 102 | comp | | | ↑ | | |
| 103 | 469.063150 | 01:57 | +13:00 | 3 | 22m | |
| 104 | comp | | | ↑ | | |

| 60 inch Telescope Log | | | Spectrograph: <u>FAS7</u> | | Page: <u>5005</u> | |
|---|------------|------|-------------------------------|-----|-------------------|---|
| Observer: <u>H. Arce</u> | | | Grating: <u>300L, 3" slit</u> | | | |
| PI: <u>Arce / Briceño / Kemp / Wilkes</u> | | | Date: <u>11/12/96</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 105 | B1.1 | 4:21 | +27:10 | 37 | 3m | |
| 106 | comp | | | ↑ | | |
| 107 | NS.2 | 4:22 | +23:07 | 37 | 3m | |
| 108 | comp | | | ↑ | | |
| 109 | NS.1 | 4:22 | +23:05 | 37 | 5m | |
| 110 | comp | | | ↑ | | |
| 111 | N20.1 | 4:22 | +25:27 | 37 | 5m | |
| 112 | comp | | | ↑ | | |
| 113 | N20.2 | 4:22 | +25:28 | 37 | 10m | |
| 114 | comp | | | ↑ | | |
| 115 | O21011 | 4:22 | +23:04 | 37 | 15m | |
| 116 | comp | | | ↑ | | |
| 117 | Tau6NNE317 | 4:32 | +18:26 | 38 | 10m | |
| 118 | comp | | | ↑ | | |
| 119 | Tau6NNE218 | 4:32 | +18:22 | 38 | 20m | small star to the east included in slit |
| 120 | comp | | | ↑ | | |
| 121 | Tau2NW47 | 4:18 | +28:25 | 38 | 20m | |
| 122 | comp | | | ↑ | | |
| 123 | Tau6NE97 | 4:32 | +18:12 | 38 | 25m | |
| 124 | comp | | | ↑ | | |
| 125-126 | DL Tau | 4:33 | +25:20 | 12 | 20s, 3m | |
| 127 | comp | | | ↑ | | |
| 128-129 | DR Tau | 4:47 | +16:58 | 12 | 10s, 2m | |
| 130 | comp | | | ↑ | | |
| 131 | HZ 14 | 4:40 | +10:59 | 0 | 2m | |
| 132 | comp | | | ↑ | | |
| 133 | Akn 120 | 5:16 | -00:09 | 6 | 2m | |
| 134 | comp | | | ↑ | | |
| 135 | 82.1 | 4:21 | +27:11 | 37 | 10m | |
| 136 | comp | | | ↑ | | |

2
 25 + 27
 27

60 inch Telescope Log

Observer: H. ArcePI: Arce / Prosser / Pantof / BartonSpectrograph: FASTGrating: 300 L, 3"Page: 5006Date: 11/12/96

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|-------------|-------|--------|-----|-----|----------|
| 137 | TDC071 | 4:22 | +23:19 | 37 | 8m | |
| 138 | Comp | | | ↑ | | |
| 139 | TDC085 | 4:22 | +23:33 | 37 | 5m | |
| 140 | Comp | | | ↑ | | |
| 141 | TDC101 | 4:22 | +23:53 | 37 | 8m | |
| 142 | Comp | | | ↑ | | |
| 143 | f1U | 6:28 | -04:57 | 54 | 5m | |
| 144 | Comp | | | ↑ | | |
| 145 | f10 | 6:28 | -04:41 | 54 | 8m | |
| 146 | Comp | | | ↑ | | |
| 147 | f15 | 6:28 | -04:48 | 54 | 8m | |
| 148 | Comp | | | ↑ | | |
| 149 | 128 | 06:59 | +14:06 | 43 | 20m | |
| 150 | Comp | | | ↑ | | |
| 151 | 132 | 07:01 | +13:57 | 43 | 12m | |
| 152 | Comp | | | ↑ | | |
| 153 | 126 | 06:58 | +18:38 | 43 | 20m | |
| 154 | Comp | | | ↑ | | |
| 155 | 130 | 07:01 | +19:37 | 43 | 7m | |
| 156 | Comp | | | ↑ | | |
| 157 | gr5341-gal? | 09:10 | +22:52 | 33 | 20m | |
| 158 | Comp | | | ↑ | | |
| 159 | 144 | 07:07 | +13:12 | 43 | 10m | |
| 160 | Comp | | | ↑ | | |
| 161 | 146 | 07:10 | +06:26 | 43 | 12m | |
| 162 | Comp | | | ↑ | | |
| 163 | Feige 34 | 10:39 | +43:06 | 0 | 2m | |
| 164 | Comp | | | ↑ | | |
| 165 | H1052971 | 07:00 | +27:09 | 0 | 10s | |
| 166 | Comp | | | ↑ | | |

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | Page: <u>5008</u> | |
|----------------------------|------------|----------|---------------------------|-----|-----------------------|---|
| Observer: <u>J. PETERS</u> | | | Grating: <u>300</u> | | Date: <u>11/13/96</u> | |
| PI: <u>e.t.al</u> | | | | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 1-18 | Fleet | Bin By | 2 | | | we have Lots of Thin clouds floating around |
| 18-21 | Bias | Bin By | 2 | | | |
| 22-26 | Evesky | | | 0 | 35 | Thin clouds |
| 27 | Comp | | | ↑ | | |
| 28 | HD 317086 | 22 54 49 | 62 27 55 | 0 | 55 | |
| 29 | Comp | | | ↑ | | |
| 30 | N 7531 | 22 34 46 | 34 09 43 | 0 | 2 ^m | |
| 31 | Comp | | | ↑ | | Try This before To many clouds come in! |
| 32 | MRK 509 | 20 41 26 | -10 54 18 | 6 | 2 ^m | |
| 33 | Comp | | | ↑ | | ↓ |
| 34 | N 7469 | 23 03 15 | 08 52 25 | 6 | 2 ^m | |
| 35 | Comp | | | ↑ | | |
| 36 | MRK 335 | 00 03 45 | 19 55 27 | 6 | 2 ^m | ↓ |
| 37 | Comp | | | ↑ | | |
| 38 | CICyg | 19 50 12 | 35 41 04 | 12 | 25 | ↓ |
| 39 | CICyg | ↓ | ↓ | 12 | 20 ^s | |
| 40 | CICyg | ↓ | ↓ | 12 | 2 ^m | |
| 41 | Comp | | | | | Thin clouds |
| 42 | 2 And | 23 33 40 | 48 49 06 | 12 | 35 | |
| 43 | 2 And | ↓ | ↓ | 12 | 60 ^s | Thin clouds |
| 44 | Comp | | | | | |
| 45 | 524.005322 | 23 56 15 | 04 01 33 | 55 | 10 ^m | Thin clouds |
| 46 | Comp | | | ↑ | | |
| 47 | 524.010230 | 00 01 04 | 04 27 59 | 55 | 6 ^m | STM 180 WEST end 31.7. |
| 48 | Comp | | | ↑ | | Thin clouds |
| 49 | 524.010904 | 00 19 28 | 04 33 21 | 55 | 20 ^m | |
| 50 | Comp | | | ↑ | | ↓ |
| 51 | 524.011201 | 00 16 18 | 04 35 20 | 55 | 15 ^m | |
| 52 | Comp | | | ↑ | | |
| 53 | 524.011463 | 00 02 34 | 04 37 20 | 55 | 5 ^m | ↓ |

MIKE KUNTZ had some files for plate x532 on cfa 9 To ffp here. The images are OK but you can't read the obj names on any writing on the plates. Ted may try and work this out on 11/14

60 inch Telescope Log

Spectrograph: FAST

Observer: J. Peters

Grating: 300

Page: 5009

PI: e.t.al

Date: 11/13/96

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|------------|----------|----------|-----|-----|-------------------|
| 54 | Comp P | | | ↑ | | LOTS THIN CLOUDS! |
| 55 | 524.011552 | 00 03 18 | 04 37 39 | 55 | 10M | ↓ |
| 56 | Comp P | | | ↑ | | |
| 57 | 524.012695 | 00 03 45 | 04 44 33 | 55 | 5M | |
| 58 | Comp P | | | ↑ | | |
| 59 | 524.013255 | 00 11 14 | 04 48 03 | 55 | 10M | |
| 60 | Comp P | | | ↑ | | |
| 61 | 524.016142 | 13 55 56 | 05 04 56 | 55 | 20M | |
| 62 | Comp P | | | ↑ | | |
| 63 | 524.016172 | 00 14 55 | 05 05 04 | 55 | 10M | |
| 64 | Comp P | | | ↑ | | |
| 65 | 524.016898 | 00 18 54 | 05 08 58 | 55 | 20M | ↙ IN OUT clouds |
| 66 | Comp P | | | ↑ | | |
| 67 | 524.016898 | ↓ | ↓ | 55 | 20M | ↓ |
| 68 | Comp P | | | ↑ | | |
| 69 | 524.018905 | 00 00 32 | 05 21 42 | 55 | 10M | |
| 70 | Comp P | | | ↑ | | Ugh, THIN CLOUDS |
| 71 | 524.019079 | 13 57 18 | 05 22 28 | 55 | 20M | ↓ |
| 72 | Comp P | | | ↑ | | |
| 73 | 524.020823 | 00 13 37 | 05 32 26 | 55 | 20M | |
| 74 | Comp P | | | ↑ | | |
| 75 | 524.022772 | 00 04 49 | 05 44 14 | 55 | 20M | |
| 76 | Comp P | | | ↑ | | |
| 77 | 524.025394 | 00 13 50 | 05 59 41 | 55 | 5M | |
| 78 | Comp P | | | ↑ | | |
| 79 | 524.027498 | 00 02 16 | 06 00 36 | 55 | 20M | |
| 80 | Comp P | | | ↑ | | |
| 81 | 524.027065 | 00 02 47 | 06 09 28 | 55 | 20M | ↓ |
| 82 | Comp P | | | ↑ | | |
| 83 | 524.027065 | ↓ | ↓ | | 20M | |

60 inch Telescope Log

Observer: J. Peters + KimPI: et.alSpectrograph: FASTGrating: 300Page: 5011Date: 11/14/96

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|--------|------------|----------|------------|-----|-----------------|--------------------------|
| 1-1 | Comp | made | Wavelength | | | Solution |
| 2-10 | Flat | | | 0 | 6 ^s | |
| 11-21 | Bias | | | 0 | | |
| 22-26 | EVERSKY | | | 0 | 2 ^s | OW Clouds NO comp |
| 27 | H0192181 | 20 10 46 | 40 07 01 | 0 | 5 ^s | THRU Clouds |
| 28 | Comp | | | ↑ | | |
| 29 | N7331 | 22 34 46 | 34 09 43 | 0 | 2 ^m | THRU Clouds |
| 30 | Comp | | | ↑ | | |
| 31 | EAud | 23 33 4 | 48 47 06 | 12 | 3 ^s | CICyg NOT done IN |
| 32 | EAud | ↓ | ↓ | 12 | 60 ^s | Clouds |
| 33 | Comp | | | ↑ | | Went INTO Clouds. |
| 34 | N7469 | 23 03 15 | 08 52 25 | 6 | 2 ^m | THRU THRU Cloud OR Hole |
| 35 | Comp | | | ↑ | | |
| 36 | MRK335 | 00 03 45 | 19 55 27 | 6 | 2 ^m | THRU Clouds |
| 37 | Comp | | | ↑ | | |
| 38 | 522.054196 | 23 22 54 | 12 30 42 | 3 | 20 ^m | Clouds + MOON |
| 39 | Comp | | | ↑ | | |
| 40 | 522.029693 | 23 12 21 | 11 14 42 | 3 | 20 ^m | STR East of obj PARTIN |
| 41 | Comp | | | | | SLIT! I don't have a |
| 42 | 522.043332 | 23 20 08 | 11 56 31 | 3 | 20 ^m | LOT of Hope for THis obj |
| 43 | Comp | | | ↑ | | No faith Here either |
| 44 | 522.053870 | 23 30 10 | 12 28 27 | 3 | 20 ^m | |
| 45 | Comp | | | ↑ | | Clouded out 9:00PM |
| 46 | DARK | | | 0 | 15 ^m | I'm good at doing DARK |
| 47 | DARK | | | 0 | 15 ^m | Susan, Purra |
| 48 | DARK | | | 0 | 15 ^m | |
| 49 | DARK | | | 0 | 15 ^m | |
| 50 | AXPER | 01 36 23 | 54 15 02 | 12 | 5 ^s | THRU Clouds |
| 51 | n.a. | 1 | 1 | | 9 ^s | |

60 inch Telescope Log

Observer: DONG - Woo KIM

PI: DONG - Woo KIM

Spectrograph: FAST

Grating: 300

Page: 5014

Date: 11/16/96

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|----------------------|------------|-------------|--------|-----|---|
| 1-2 | Comp | | | | 5 | |
| 3-12 | KLAT | | | | 6 | |
| 13-22 | BIAS | | | | | |
| 23-28 | sky | | | | 2 | Blank sky |
| 29 | 1504 C201 | 21:07:58 | -05:17:39 | 4 | 30 | Emission lines (many) |
| 30 | 1504 C201 | " | " | | 300 | " " |
| 31 | BDp 284211 | 21:46:57.1 | 28:37:48 | (910) | 60 | std * 1 |
| 32 | HD 192281 | 20:10:47 | 40:1:01 | (1170) | 5 | " |
| 33 | 2181 pI 01 | 22:54:10.5 | 16 06 53.2 | 2 | 300 | A=1.06 blank emission ^{M-K} |
| 34 | " | " | " | | 600 | " |
| 35 | 1852 p201 | 22 55 31 | 5 36 42.2 | 2 | 300 | A=1.12 emission line |
| 36 | 1849 pI 01 | 22 56 36.5 | 5 25 17.2 | 4 | 300 | A=1.11 " " S |
| 37 | M31 p201 | 23 20 38.3 | 8 21 77.2 | 2 | 300 | A=1.09 blank emission ^{M-K} |
| 38 | 1447 u201 | 22 38 57.5 | -05 39 21.3 | 2/42 | 300 | A=1.12 too faint |
| 39 | Comp | 4 | 4 | | | |
| 40 | 2365 p202 | 00 08 41.6 | 20 56 51 | 2 | 300 | A=1.03 blank emission ^{M-K} |
| 41 | Comp | 4 | 4 | | | |
| 42 | 1286 u 001 | 01 10 35.5 | -16 48 27.5 | 23 | 300 | A=1.64 emission line |
| 43 | Comp | | | | | |
| 44 | 1286 u 001 | " | " | | 300 | A=1.62 " ✓ |
| 45 | Comp | | | | | |
| 46 | 1892 pI 02 | 21 56 59.5 | +7 20 50.9 | v m1 | 300 | A=1.27 red star |
| 47 | Comp | | | | | |
| 48 | 2145 pI 01 | 23 10 18.7 | 14 47 22.7 | v m1 | 300 | A=1.08 blank emission ^{M-K} |
| 49 | Comp | | | | | |
| 50 | 2095 pI 01 | 1 58 20.9 | 37 29 57.8 | 2 | 300 | A= red star? |
| 51 | Comp | | | | | |
| 52 | 1279 u 001 | 2 19 5.5 | -17 24 14 | 4 | 300 | A=1.62 very faint emission |
| 53 | Comp | | | | | |
| 54 | 1279 u 001 | " | " | | 600 | A=1.60 |

60 inch Telescope Log

Observer: Dong-Woo KimPI: Dong-Woo KimSpectrograph: FASTGrating: 700Page: 5015Date: 11/16/96

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|------------|------------|-----------------|------------------|-----|--|
| 55 | Comp | | | | | |
| 56 | 2319 pL02 | 2 58 16.1 | 19 47 19.5 | 2 | 300 | A=1.08 1.08 M* |
| 57 | Comp | | | | | |
| 58 | 2019 pL01 | 3 16 8.7 | 11 22 41 | 2 | 300 | A=1.16 red * |
| 59 | Comp | | | | 6 | |
| 60 | 2451 pL01 | 3 49 7.3 | 23 35 17.2 | 4 | 600 | A=1.12 ?? |
| 61 | Comp | | | | | |
| 62 | 2148 pL01 | 4 20 57.3 | 14 44 10.5 | 4 | 300 | A=1.20 1.20 1.20 |
| 63 | Comp | | | | | |
| 64 | 2311 pL01 | 4 22 4.8 | 19 34 50.9 | 2/42 | 300 | A=1.16 M* 1.16 |
| 65 | Comp | | | | | |
| 66 | 2311 pL02 | 4 22 4.4 | 19 34 56.9 | | 300 | A=1.16 ?? |
| 67 | Comp | | | | | |
| 68 | 2205 pL02 | 4 27 33.6 | 16 52 22.1 | 2 | 300 | A=1.15 1.15 M* |
| 69 | Comp | | | | | |
| 70 | 1562 uI 02 | 4 46 37.3 | 4 20 58.6 | 42 | 300 | A=1.41 ?? |
| 71 | Comp | | | | | |
| 72 | 1562 uI 01 | | | 42 | 300 | A=1.37 ?? |
| 73 | Comp | | | | | |
| 74 | H214 | 04 38 15.6 | 10 57 57 (1950) | | 180 | A=1.13 standard |
| 75 | Comp | | | | | |
| 76 | 1296 pO 01 | 5 4 22.8 | 2 38 0.9 | 2 | 300 | A=1.24 ?? |
| 77 | " | | | | 600 | A=1.27 ?? |
| 78 | Comp | | | | | |
| 79 | G192 B2B | 5 1 31.5 | 52 45 52 (1950) | | 120 | standard * A=1.10 |
| 80 | Comp | | | | | |
| 81 | 2009 pO 01 | 2 46 13.8 | 10 56 56 | m ¹²⁵ | 300 | A=1.25 broad lines |
| 82 | Comp | | | | | |
| 83 | 2336 pO 01 | 8 38 30.9 | 19 48 19.4 | 2 | 300 | A=1.37 stars? |
| 84 | Comp | | | | | |

60 inch Telescope Log

Observer: Dong-Woo KimPI: " Spectrograph: FASTGrating: 300Page: 5016Date: 11/16/96

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|----------------------|----------------------|-------------|------|-----|-------------------------|
| 85 | 2582 pL02 | 8 37 37 | 25 47 50 | 4 | 300 | A=1.24 red star |
| 86 | Comp | 8 37 | | | | |
| 87 | 2669 pL01 | 8 39 17 | 36 19 9.7 | 2 | 300 | A=1.19 red * |
| 88 | Comp | | | | | |
| 89 | 4400 pL02 | 8 41 28 | 64 22 34 | 2 | 300 | A=1.31 M* |
| 90 | Comp | | | | | |
| 91 | 4415 pL02 | 8 40 18.5 | 64 36 41 | 2 | 300 | A=1.29 M* |
| 92 | Comp | 9 19 49.8 | | | | |
| 93 | 4357 pL02 | 8 40 18.5 | 62 27 6.2 | 2 | 300 | A=1.31 M* |
| 94 | Comp | | | | | |
| 95 | 3714 pL01 | 9 53 15 | 47 15 27 | 2 | 300 | A=1.26 M* |
| 96 | Comp | | | | | |
| 97 | 4599 pD01 | 10 15 47 | 71 27 4 | 2/42 | 300 | A=1.46 emission lines |
| 98 | Comp | | | | | |
| 99 | 4400 pL01 | 10 42 24 | 12 12 51 | 2 | 300 | A=1.51 BE M* |
| 100 | Comp | | | | | |
| 101 | 1648 pL07 | 10 12 22 | -01 28 16 | 2 | 120 | A=1.52 BE M* |
| 102 | Comp | | | | | |
| 103 | 4198 pL01 (4199) | 10 51 31 | 57 34 41 | 2 | 300 | A=1.30 BE M* |
| 104 | Comp | | | | | |
| 105 | 3865 pL01 | 10 59 16 | 51 24 48 | | 300 | A=1.20 ?? |
| 106 | Comp | | | | | |
| 107 | 4450 pL01 | 10 02 59 | 65 50 12 | | 300 | 1.71 M* |
| 108 | Comp | | | | | |
| 109 | 2526 pD01 | 11 04 7.5 | 21 45 21 | | 300 | 1.15 * * |
| 110 | 3725 pL01 | 11 42 42.2 | 46 24 36 | | 300 | 1.19 emission lines 300 |
| 111 | Comp | ↓ | ↓ | | | |
| 112 | 3725 pL01 | | | | 300 | 1.19 sky getting brig |
| 113 | Comp | | | | * | 1.24!! M4 * |
| 114 | BS 3061 (M4) | 7 46 52 | 3 32 (1990) | | 1 | |

60 inch Telescope Log

Observer: DONG WOOKIM
 PI: ↓

Spectrograph: FAST

Grating: 300

Page: 5018

Date: 11/17/96

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|--------------|-----------|------------|--------|------|-----------------------|
| 1 | Comp | | | | | |
| 2-11 | FLAT | | | | 6 | |
| 12-21 | BIAS | | | | | |
| 22-28 | SUN | | | | 2 | |
| 29 | Comp | | | | | |
| 30 | RPp284211 | 21 48 57 | 28 37 48 | (1950) | 60 | A=1.08 |
| 31 | 1505 C Tol | 21 7 58 | -5 19 39 | m2 | 300 | A=1.28 |
| 32 | ↓ | | | | 600 | A=1.28 |
| 33 | Comp | ↑ | ↑ | | | |
| 34 | 1631 u Tol | 23 03 36 | -8 29 57 | m2 | 300 | A=1.34 |
| 35 | Comp | ↓ | ↓ | | 600 | A=1.73 |
| 36 | 1431 u Tol | | | | | |
| 37 | Comp | ↑ | ↑ | | | |
| 38 | 1319 u Tol | 1 23 40 | -14 26 14 | m2 | 300 | A=1.46 emission lines |
| 39 | Comp | | | | | |
| 40 | 2350 p Tol | 0 8 26.5 | 20 34 32.5 | m2 | 300 | A |
| 41 | Comp ↓ | ↓ | ↓ | | | |
| 42 | 2350 p Tol ↓ | | | m2 | 600 | A=1.03 emission line |
| 43 | Comp | | | | | |
| 44 | 2350 p Tol | 0 8 26.9 | 20 34 52.0 | | 300 | A=1.03 . . ? |
| 45 | 4586 p Tol | 2 30 39.5 | 26 20 55 | m1 | 300 | A=1.0 emission line |
| 46 | Comp | ↓ | ↓ | | | |
| 47 | 2586 p Tol | | | | 600 | A=1.02 " |
| 48 | Comp | | | | | |
| 49 | 1404 C Tol | 2 10 28 | -10 15 40 | m1 | 600 | A=1.43 emission ? |
| 50 | Comp | ↓ | ↓ | | | |
| 51 | 1404 C Tol | | | | 1200 | A=1.41 |
| 52 | Comp | | | | | |
| 53 | 1075 p Tol | 3 6 39.5 | 3 42.9 | m1 | 300 | A=1.28 emission lines |
| 54 | Comp | | | | | |

60 inch Telescope Log

Observer: Dang-Woo Kim

PI: _____

Spectrograph: FASTGrating: 300Page: 5019Date: 11/17/96

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|------------|-----------|------------|-----|------|-------------------------|
| 55 | 1675 pD 01 | | | m1 | 600 | A=1.26 } emission lines |
| 56 | Comp | | | | | |
| 57 | 1279 uD 01 | 2 19 5.5 | -19 25 14 | | 600 | A=1.53 <redo>? |
| 58 | Comp | | | | | |
| 59 | 1596 uD 01 | 4 47 54.7 | -7 22 42.4 | m1 | 300 | A=1.53 } emission lines |
| 60 | Comp | ↓ | ↓ | | | |
| 61 | 1596 uD 01 | | | | 300 | A=1.57 } |
| 62 | Comp | | | | | |
| 63 | 1938 pL 02 | 4 16 30.2 | 10 15 3.1 | m1 | 600 | A=1.26 emission line |
| 64 | " | ↓ | ↓ | | 600 | A=1.24 (R=1.2?) |
| 65 | Comp | | | | | |
| 66 | 2009 pD 01 | 2 46 13.8 | 10 56 56 | | 600 | A=1.09 <redo> |
| 67 | Comp | | | | | |
| 68 | 2451 pD 01 | 3 49 7.3 | 23 35 12.2 | | 1200 | A=1.01 E? <redo> |
| 69 | Comp | | | | | |
| 70 | 1796 pD 01 | 5 4 22.8 | 2 38 8.9 | | 1800 | A=1.19 E? <redo> |
| 71 | Comp | | | | | |
| 72 | 4587 pD 01 | 7 18 57.7 | 70 59 20.6 | m2 | 600 | A=1.42 emission lines |
| 73 | Comp | | | | | |
| 74 | 3711 pL 05 | 8 13 19.2 | 46 8 48.9 | m1 | 300 | A=1.28 } emission lines |
| 75 | Comp | ↓ | ↓ | | | |
| 76 | 3711 pL 05 | | | | 300 | A=1.28 } |
| 77 | Comp | | | | | |
| 78 | 3791 pL 02 | 8 39 49.7 | 48 47 1.5 | m2 | 300 | A=1.34 } emission lines |
| 79 | Comp | ↓ | ↓ | | | |
| 80 | 3791 pL 02 | | | m2 | 300 | A=1.31 } |
| 81 | Comp | | | | | |
| 82 | 3716 pL 01 | 8 12 23 | 46 15 28.6 | m2 | 600 | A=1.20 emission lines |
| 83 | Comp | | | | | |

