

60 inch Telescope Log

Observer: Felco
 PI: Felco

Spectrograph: FAST

Grating: 300

Page: 8023

Date: 12/1/94

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|------------|------|------|-----|-----|-------------------------|
| 1-10 | BIAS | | | | | for 1080 |
| 11-20 | FLAT | | | | | |
| 26-40 | SKY | | | | | |
| 41 | N711 | | | 84 | 300 | |
| 42 | comp | | | ↑ | | |
| 43 | 01536+0521 | | | 84 | 300 | |
| 44 | comp | | | ↑ | | |
| 45 | 01493+0325 | | | 84 | 300 | |
| 46 | comp | | | ↑ | | |
| 47 | 01498+3556 | | | 84 | 600 | |
| 48 | comp | | | ↑ | | |
| 49 | I 1756 | | | 84 | 600 | |
| 50 | comp | | | ↑ | | |
| 51 | 02008+2350 | | | 84 | 900 | superposed star, lat em |
| 52 | comp | | | ↑ | | |
| 53 | 02051+0154 | | | 84 | 180 | |
| 54 | comp | | | ↑ | | |
| 55 | N7331 | | | 57 | 180 | |
| 56 | comp | | | ↑ | | |
| 57 | Feige 110 | | | 56 | 120 | |
| 58 | comp | | | ↑ | | |
| 59 | I 1774 | | | 84 | 900 | |
| 60 | comp | | | ↑ | | |
| 61 | 02146+0935 | | | 84 | 300 | |
| 62 | comp | | | ↑ | | |
| 63 | 02074+0725 | | | 84 | 600 | |
| 64 | comp | | | ↑ | | |
| 65 | 02355+4127 | | | 84 | 120 | |
| 66 | comp | | | ↑ | | |
| 67 | 02435+3450 | | | 84 | 300 | |

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| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|---------------|------|------|-----|------|----------------------------|
| 68 | comp | | | ↑ | | |
| 69 | 021972+0102 | | | 84 | 120 | |
| 70 | comp | | | ↑ | | |
| 71 | 025531+0535 | | | 84 | | |
| 72 | comp | | | ↑ | | |
| 73 | 021929+570816 | | | 83 | 600 | row = 42 v. bright * = 3 |
| 74 | comp | | | ↑ | | |
| 75 | 021929+571123 | | | 83 | 300 | |
| 76 | comp | | | ↑ | | |
| 77 | 021931+570307 | | | 83 | 600 | |
| 78 | comp | | | ↑ | | |
| 79 | 021933+570932 | | | 83 | 600 | row = 42 v. bright * = 4 |
| 80 | comp | | | ↑ | | |
| 81 | 021933+571453 | | | 83 | 300 | |
| 82 | comp | | | ↑ | | |
| 83 | 021935+570553 | | | 83 | 500 | clouds, reds? |
| 84 | comp | | | ↑ | | |
| 85 | 021935+570553 | | | 83 | 500 | ok! clouds passed |
| 86 | comp | | | ↑ | | |
| 87 | NGC 2811 | | | 2 | 1200 | bin x 2 maybe? " faint! |
| 88 | comp | | | ↑ | | |
| 89 | G191 B2B | | | 56 | 120 | std |
| 90 | comp | | | ↑ | | |
| 91 | G191 B2R | | | 56 | 120 | bin x 2 |
| 92 | comp | | | ↑ | | |
| 93 | 04393+0057 | | | 84 | 300 | ✓ bin |
| 94 | comp | | | ↑ | | |
| 95 | 04378-0208 | | | 84 | 600 | v. dim |
| 96 | comp | | | ↑ | | |
| 97 | 04394-0152 | | | 84 | 300 | |

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| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|------------|------|------|-----|-----|------------------------------|
| 98 | comp | | | ↑ | | |
| 99 | 04485+0038 | | | 84 | 300 | |
| 100 | comp | | | ↑ | | |
| 101 | 04440-0246 | | | 84 | 300 | |
| 102 | comp | | | ↑ | | |
| 103 | 04544-0256 | | | 84 | 300 | |
| 104 | comp | | | ↑ | | |
| 105 | 04438+0325 | | | 84 | 180 | |
| 106 | comp | | | ↑ | | |
| 107 | 04513+0135 | | | 84 | 180 | |
| 108 | comp | | | ↑ | | |
| 109 | 05132+0706 | | | 84 | 300 | |
| 110 | comp | | | ↑ | | |
| 111 | 05140+0623 | | | 84 | 300 | |
| 112 | comp | | | ↑ | | |
| 113 | 05177+0631 | | | 84 | 300 | |
| 114 | comp | | | ↑ | | |
| 115 | 05145+0652 | | | 84 | 180 | |
| 116 | comp | | | ↑ | | |
| 117 | 05182+0313 | | | 84 | 180 | |
| 118 | comp | | | ↑ | | |
| 119 | 05183+0312 | | | 84 | 200 | repeat from 11/30 8020/99 |
| 120 | comp | | | ↑ | | |
| 121 | 05390+1829 | | | 84 | 300 | |
| 122 | comp | | | ↑ | | |
| 123 | 05466+1241 | | | 84 | 200 | |
| 124 | comp | | | ↑ | | |
| 125 | 05518+1510 | | | 84 | 300 | |
| 126 | comp | | | ↑ | | |
| 127 | 06522+2419 | | | 84 | 300 | |

60 inch Telescope Log

Observer: Falco

PI: Falco

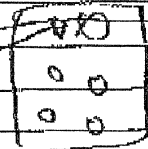
Spectrograph: FAST

Grating: 300

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Date: 12/2/99

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|------------|------|------|-----|-----|------------------------------|
| 128 | comp | | | ↑ | | |
| 129 | 06516+4104 | | | 84 | 180 | |
| 130 | comp | | | ↑ | | |
| 131 | 06523+4045 | | | 84 | 240 | row ~ 40 may not -be emp. |
| 132 | comp | | | ↑ | | |
| 133 | 06539+4521 | | | 84 | 200 | |
| 134 | comp | | | ↑ | | |
| 135 | I 2175 | | | 84 | 300 | too short? |
| 136 | comp | | | ↑ | | |
| 137 | 07009+2920 | | | 84 | 300 | |
| 138 | comp | | | ↑ | | |
| 139 | 07048+3145 | | | 84 | 200 | |
| 140 | comp | | | ↑ | | |
| 141 | 07054+4954 | | | 84 | 300 | row ~ 40 |
| 142 | comp | | | ↑ | | |
| 143 | 07068+5014 | | | 84 | 200 | |
| 144 | comp | | | ↑ | | |
| 145 | 07054+4842 | | | 84 | 120 | row 40 |
| 146 | comp | | | ↑ | | |
| 147 | 07061+4759 | | | 84 | 300 | |
| 148 | comp | | | ↑ | | |
| 149 | 07092+2840 | | | 84 | 300 | |
| 150 | comp | | | ↑ | | |
| 151 | 07145+4105 | | | 84 | 300 | |
| 152 | comp | | | ↑ | | |
| 153 | 07181-0128 | | | 84 | 300 | |
| 154 | comp | | | ↑ | | |
| 155 | 07384+6019 | | | 84 | 180 | |
| 156 | comp | | | ↑ | | |
| 157 | 07435+3908 | | | 84 | 120 | |

FAST | RA 90

 too interesting not to do all
 in rest - tell Margaret

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | Page: <u>8027</u> | |
|------------------------|------------|------|---------------------------|-----|----------------------|--|
| Observer: <u>Falco</u> | | | Grating: <u>300</u> | | Date: <u>12/2/99</u> | |
| PI: <u>Falco</u> | | | | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 158 | comp | | | ↑ | | |
| 159 | 07435+3908 | | | 84 | 300 | <p>clear + cold</p> <p>also on between D, E!</p> |
| 160 | comp | | | ↑ | | |
| 161 | 07435+3908 | | | 84 | 300 | |
| 162 | comp | | | ↑ | | |
| 163 | 07437+6050 | | | 84 | 300 | |
| 164 | comp | | | ↑ | | |
| 165 | 07460+2845 | | | 84 | 300 | |
| 166 | comp | | | ↑ | | |
| 167 | 07459+5602 | | | 84 | 200 | |
| 168 | comp | | | ↑ | | |
| 169 | 07475+5018 | | | 84 | 200 | PA 76 barely? |
| 170 | comp | | | ↑ | | |
| 171 | 07471+6200 | | | 84 | 300 | PA 90 |
| 172 | comp | | | ↑ | | |
| 173 | 07469+3633 | | | 84 | 200 | ? faint? |
| 174 | comp | | | ↑ | | |
| 175 | 09580+3651 | | | 84 | 120 | row 40 faint? |
| 176 | comp | | | ↑ | | |
| 177 | 10026+1930 | | | 84 | 300 | |
| 178 | comp | | | ↑ | | |
| 179 | 10044-0100 | | | 84 | 300 | |
| 180 | comp | | | ↑ | | |
| 181 | 10037+0118 | | | 84 | 180 | |
| 182 | comp | | | ↑ | | |
| 183 | 10221+0640 | | | 84 | 300 | |
| 184 | comp | | | ↑ | | |
| 185 | 07093+2841 | | | 84 | 300 | |
| 186 | comp | | | ↑ | | |
| 187 | 07153+3128 | | | 84 | 300 | maybe |

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | Page: <u>8035</u> | |
|----------------------------|---------------|------------|---------------------------|-----|----------------------|-------------------------------------|
| Observer: <u>Ann Bragg</u> | | | Grating: <u>std</u> | | Date: <u>12/3/99</u> | |
| PI: <u>Bragg</u> | | | | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 1-10 | BIAS | | | | | binby 2 ↓ |
| 11-20 | FLAT | | | | 12s | |
| 21-30 | BIAS | | | | | binby 4 ↓ |
| 31-40 | FLAT | | | | 6s | beam=1040 ↓ |
| 41-45 | DARK | | | | 900s | |
| 46 | sky | | | | 2s | counts a little low binby ↓ |
| 47 | sky | | | | 4s | |
| 48-52 | sky | | | | 6s | |
| 53 | comp | | | | ↑ | |
| 54-58 | sky | | | | 20s | binby 2 ↓ |
| 59 | comp | | | | (12s) ↑ | |
| 60 | n 7331 | 22 37 04 | +34 09 43 | 57 | 120s | velocity std binby 4 |
| 61 | comp | | | | ↑ | |
| 62 | Figello | 23 19 56 | -5 09 37 | 56 | 120s | |
| 63 | comp | | | | ↑ | really windy - (closing) for no |
| 64 | 021940p570952 | 2 19 40.8 | +57 09 52.2 | 83 | 300s | still wind → less gusty no |
| 65 | comp | | | | ↑ | |
| 66 | 021942p570921 | 2 19 42.8 | +57 04 21.5 | 83 | 450s | extra * to the west dears |
| 67 | comp | | | | ↑ | |
| 68 | 021943p571254 | 2 19 43.8 | +57 12 54 | 83 | 450s | → poor seeing ← |
| 69 | comp | | | | ↑ | |
| 70 | 021945p570753 | 2 19 44 | +57 07 53.4 | 83 | 450s | extra * to the East |
| 71 | comp | | | | ↑ | |
| 72 | 091945p571104 | 2 19 45.0 | +57 11 4.9 | 83 | 600s | extra * on each side (want beam 42) |
| 73 | comp | | | | ↑ | |
| 74 | 021945p571303 | 2 19 45.70 | 57 13 03.4 | 83 | 600s | may be extra on east want ~ 40 |
| 75 | comp | | | | ↑ | |
| 76 | 021944p570935 | 2 19 44.3 | +57 09 36 | 83 | 600s | |
| 77 | comp | | | | ↑ | |
| 78 | 021946p570234 | 2 19 46.5 | +57 02 34.4 | 83 | 600s | |
| 79 | comp | | | | ↑ | |

60 inch Telescope Log

Observer: Bragg
 PI: Bragg, Calvet

Spectrograph: FAST
 Grating: std.
 Date: 12/3/99

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| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|---------|---------------|------------|------------|-----|-------|---------------------------------------|
| 80 | 021946p570443 | 2 19 46.4 | 57 04 43.7 | 83 | 600 | ~ line 40 |
| 81 | comp | | | | ↑ | |
| 82 | 021946p570647 | 2 19 46.9 | 57 06 47.9 | 83 | 600s | seeing better now |
| 83 | comp | | | | ↑ | |
| 84 | 021949p570551 | 2 19 49.5 | 57 05 51.0 | 83 | 600s | awful seeing |
| 85 | comp | | | | ↑ | |
| 86 | 9Vsolb-41256 | 5 36 9.65 | -1 55 53.7 | 112 | 750s | (loops -- too long) not enough counts |
| 87 | comp | | | | ↑ | |
| 88 | " | " | " | 112 | 1500s | |
| 89 | comp | | | | | still weak |
| 90 | 9Vsolb 40327 | 5 34 56.53 | -2 05 32.8 | 112 | 600s | weak |
| 91 | comp | | | | ↑ | |
| 92 | " | " | " | 112 | 1500s | |
| 93 | comp | | | | ↑ | |
| 94 | 9Vsolb-41376 | 5 36 18.34 | -1 52 41.6 | 112 | 1200s | long enough on first try! |
| 95 | comp | | | | ↑ | |
| 96 | 9Vsolb-43250 | 5 39 04.10 | -1 59 57.9 | 112 | 1200s | |
| 97 | comp | | | | ↑ | |
| 98 | 9Vsolb-44524 | 5 30 00.92 | -0 59 35.8 | 112 | 900s | |
| 99 | comp | | | | ↑ | |
| 100 | 9Vsolb-47157 | 5 32 47.42 | -0 40 35.3 | 112 | 900s | |
| 101 | comp | | | | ↑ | |
| 102 | 4576b-092 | 7 19 45.88 | 56 45 55.9 | 64 | 300s | too weak? |
| 103 | comp | | | | ↑ | |
| 104 | " | " | " | 64 | 600s | |
| 105 | comp | | | | ↑ | |
| 106 | 4576b-091 | 7 27 53.52 | 57 03 06.1 | 64 | 900s | |
| 107 | comp | | | | ↑ | |
| 108 | 4576-096 | 7 17 4.27 | 56 44 02.4 | 64 | 1500s | |
| 109 | comp | | | | ↑ | |
| 110 | 4576-100 | 7 28 3.34 | 57 10 55.2 | 64 | 1500s | |
| 111 | comp | | | | ↑ | |
| 112-121 | BIAS | | | | | |
| 122-131 | FLAT | | | | | |

60 inch Telescope Log

Observer: Bragg

PI: Maheshvi, Bragg

Spectrograph: FAST

Grating: std

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Date: 12/4/99

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|---------------|------------|-----------|-----|--------|--|
| 1-10 | BIAS | | | | | binby2 ↓ |
| 11-20 | FLAT | | | | 12s | |
| 21-30 | BIAS | | | | | binby4 ↓ |
| 31-40 | FLAT | | | | 60s | focus 1030 |
| 41-45 | DARK | | | | 900s | ↓ |
| 46-50 | sky flat | | | | 60s | |
| 51 | comp | | | | ↑ | |
| 52-56 | sky flat | | | | 20s | binby2 ↓ |
| 57 | comp | | | | ↑(12s) | |
| 58 | BIAS | | | | | binby4 (to test header) |
| 59 | N7331 | 22 37 02 | +34 01 43 | 57 | 120s | |
| 60 | comp | | | | ↑ | |
| 61 | Feige 110 | 23 19 52 | -5 09 47 | 56 | 120s | |
| 62 | comp | | | | ↑ | |
| 63 | srqb 075.007 | 00 34 28.9 | +25 26 00 | 59 | 180s | superposed star - cannot |
| 64 | comp | | | | ↑ | |
| 65 | srqb 075.009 | 00 35 27.2 | +25 39 20 | 59 | 600s | (faint) may be extra to east |
| 66 | comp | | | | ↑ | |
| 67 | srqb 075.010 | 00 35 30.4 | +26 51 18 | 59 | 600s | (also faint) |
| 68 | comp | | | | ↑ | |
| 69 | 021949p570753 | 02 19 49.2 | +57 07 53 | 83 | 300s | extra * to west is also faint 021945p570753 |
| 70 | comp | | | | ↑ | |
| 71 | 021950p570906 | 02 19 50.9 | +57 09 06 | 83 | 450s | maybe extra to west (but dim) |
| 72 | comp | | | | ↑ | |
| 73 | 021952p570630 | 02 19 52.1 | +57 06 30 | 83 | 450s | v line 42 |
| 74 | comp | | | | ↑ | |
| 75 | 021954p570942 | 02 19 54.6 | +57 09 42 | 83 | 450s | |
| 76 | comp | | | | ↑ | |
| 77 | 021956p570408 | 02 19 56.3 | +57 04 08 | 83 | 450s | |
| 78 | comp | | | | ↑ | |

60 inch Telescope Log
 Observer: Bragg
 PI: Bragg
 Spectrograph: FAST
 Grating: 56
 Date: 12/4/99
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| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|---------------|------------|-------------|-----|---------|--|
| 79 | 021958p571014 | 02 19 58.2 | +57 11 14.5 | 83 | 450s | extra star to the E? nu |
| 80 | comp | | | | ↑ | |
| 81 | 021959p570656 | 02 19 59.1 | +57 06 56.5 | 83 | 450s | |
| 82 | comp | | | | ↑ | |
| 83 | 022002p570743 | 02 20 2.90 | +57 07 43.7 | 83 | 600s | |
| 84 | comp | | | | ↑ | |
| 85 | 022101p570717 | 02 21 1.20 | +57 07 17.8 | 83 | 600s | |
| 86 | comp | | | | ↑ | |
| 87 | 022104p570502 | 02 21 4.60 | +57 05 02.0 | 83 | 600s | |
| 88 | comp | | | | ↑ | |
| 89 | 022104p570859 | 02 21 4.5 | +57 08 59.3 | 83 | 600s | |
| 90 | comp | | | | ↑ | |
| 91 | 022108p570801 | 02 21 8.8 | +57 08 4.2 | 83 | 600s | |
| 92 | comp | | | | ↑ | |
| 93 | 022110p570737 | 02 21 10.2 | +57 07 37.2 | 83 | 600s | |
| 94 | comp | | | | ↑ | |
| 95 | 021909p570953 | 02 19 9.5 | +57 09 53.6 | 83 | 600s | extra star to W want one ~40 |
| 96 | comp | | | | ↑ | |
| 97 | 022110p571302 | 02 21 10.5 | +57 13 02.6 | 83 | 450s | |
| 98 | comp | | | | ↑ | |
| 99 | 022118p570806 | 02 21 18.2 | +57 08 06.4 | 83 | 600s | |
| 100 | comp | | | | ↑ | |
| 101 | SN99dq | 2 33 59 | +20 58 25 | 2 | 1200s | not sure if I got pos ang 20°, bin by 2 |
| 102 | comp | | | | ↑ (12s) | |
| 103 | PG 0310p149 | 3 13 36 | +15 06 23 | 56 | 240s | pos ang 0° OK ✓ |
| 104 | comp | | | | ↑ (12s) | also dim |
| 105 | | | | 56 | 450s | OK ~ line 90° |
| 106 | comp | | | | ↑ | |
| 107 | 022118p571207 | 02 21 12.0 | +57 12 76 | 83 | 600s | bin by 4 |
| 108 | comp | | | | ↑ | |

90°
 ↓
 for
 to ch
 pos 2
 141

60 inch Telescope Log

Observer: Bragg

PI: Bragg, Calvet

Spectrograph: FAST

Grating: std

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Date: 12/4/99

reader wrong position = 90°

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|--------|---------------|------------|-------------|-----|-------|-----------------------------|
| 109 | 022120p570756 | 02 21 20.7 | +57 07 56.6 | 83 | 300s | too short, repeat |
| 110 | comp | | | | ↑ | |
| 111 | | " | " | 83 | 600s | |
| 112 | comp | | | | ↑ | |
| 113 | 022121p570240 | 2 21 21.70 | +57 02 40.2 | 83 | 600s | |
| 114 | comp | | | | ↑ | |
| 115 | 022122p571320 | 2 21 22.2 | +57 13 20.3 | 83 | 600s | extra to the east want 1 to |
| 116 | comp | | | | ↑ | |
| 117 | 022123p570130 | 2 21 23.20 | +57 01 30.7 | 83 | 450s | |
| 118 | comp | | | | ↑ | |
| 119 | 022123p570630 | 2 21 23.8 | +57 06 30.2 | 83 | 600s | |
| 120 | comp | | | | ↑ | |
| 121 | 022123p570937 | 2 21 23.7 | +57 09 37.4 | 83 | 600s | |
| 122 | comp | | | | ↑ | |
| 123 | 022124p571153 | 2 21 24.9 | +57 11 53.2 | 83 | 180s | |
| 124 | comp | | | | ↑ | |
| 125 | 022125p571333 | 2 21 26 | +57 13 32.6 | 83 | 300s | |
| 126 | comp | | | | ↑ | |
| 127 | 022126p57000 | 2 21 26.4 | +57 01 0.1 | 83 | 700s | |
| 128 | comp | | | | ↑ | |
| 129 | 022126p570553 | 2 21 26.8 | +57 05 53.1 | 83 | 600s | extra to do W? |
| 130 | comp | | | | ↑ | |
| 131 | 022126p571411 | 2 21 26.4 | +57 14 11.8 | 83 | 600s | |
| 132 | comp | | | | ↑ | |
| 133 | 022127p570849 | 2 21 27.6 | +57 08 49.2 | 83 | 600s | |
| 134 | comp | | | | ↑ | |
| 135 | 9V501b-45425 | 5 30 55.61 | -00 55 42.4 | 112 | 600s | a little short.... |
| 136 | comp | | | | ↑ | |
| 137 | 9V501b-48201 | 5 33 49.8 | -00 48 25.7 | 112 | 1500s | |
| 138 | comp | | | | ↑ | |

60 inch Telescope Log
 Observer: Bragg
 PI: Calvet
 Spectrograph: FAST
 Grating: std
 Date: 12/4/99
 Page: 8040

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|---------|----------------|------------|-------------|-----|-------|---------------------------|
| 139 | qvsonb - 52078 | 5 44 27.35 | -00 07 19.6 | 112 | 900s | |
| 140 | comp | | | | ↑ | |
| 141 | qvsonb - 52713 | 5 46 4.67 | +00 09 58.3 | 112 | 600s | |
| 142 | comp | | | | ↑ | |
| 143 | qvsonb - 52683 | 5 45 56.6 | -00 00 07.1 | 112 | 900s | extra 2 on west |
| 144 | comp | | | | ↑ | |
| 145 | qvsonb - 55671 | 5 41 25.9 | -00 32 55 | 112 | 600s | |
| 146 | comp | | | | ↑ | |
| 147 | qvsonb - 55334 | 6 00 04.48 | -02 06 45.7 | 112 | 450s | |
| 148 | comp | | | | ↑ | |
| 149 | qvsonb - 55144 | 05 52 19.7 | -00 16 33 | 112 | 450s | |
| 150 | comp | | | | ↑ | |
| 151 | qvsonb - 55143 | 05 41 45.9 | -00 30 45.3 | 112 | 450s | |
| 152 | comp | | | | ↑ | |
| 153 | a576b-014 | 7 22 3.19 | +56 29 15 | 64 | 1200s | |
| 154 | comp | | | | ↑ | |
| 155 | a576b-102 | 7 29 18.8 | +56 15 11.9 | 64 | 1500s | |
| 156 | comp | | | | ↑ | |
| 157 | a576b-107 | 7 22 22.9 | +54 56 11.8 | 64 | 1200s | |
| 158 | comp | | | | ↑ | |
| 159 | a576b-108 | 7 27 32.9 | +54 49 6.2 | 64 | 1500s | |
| 160 | comp | | | | ↑ | |
| 161 | a576b-112 | 7 20 37.9 | +56 28 50 | 64 | 1200s | (not sure if long enough) |
| 162 | comp | | | | ↑ | |
| 163-172 | BIAS | | | | | bin by 4 ↓ |
| 173-182 | FLAT | | | | 6s | |
| 183-192 | BIAS | | | | | bin by 2 ↓ |
| 193-202 | FLAT | | | | 12s | |
| 203-207 | DARK | | | | 900s | |

60 inch Telescope Log
 Observer: Braga
 PI: Mahavi, Braga
 Spectrograph: FAST
 Grating: std
 Date: 12/5/99
 Page: 8041

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|--------|---------------|------------|-------------|-----|---------|---|
| 1-10 | BIAS | | | | | binby 2 ↓ |
| 11-20 | FLAT | | | | 12s | |
| 21-30 | BIAS | | | | | binby 4 ↓ |
| 31-40 | FLAT | | | | 60s | focus 1050 |
| 41-45 | DARK | | | | 900s | |
| 46-50 | sky | | | | 60s | binby 4 ↓ |
| 51 | cen | | | | ↑ | |
| 52-56 | sky | | | | 20s | binby 2 ↓ |
| 57 | comp | | | | ↑ (12s) | |
| 58 | N7331 | 22 37 02 | +31 24 46.9 | 57 | 120s | binby 4 ↓ |
| 59 | comp | | | | ↑ | |
| 60 | Feige 110 | 23 17 23.5 | -5 26 22 | 56 | 180s | |
| 61 | comp | | | | ↑ | |
| 62 | srgh075.011 | 00 35 39.3 | +25 40 40 | 59 | 300s | |
| 63 | comp | | | | ↑ | |
| 64 | srgh075.019 | 00 36 18.3 | +25 48 25 | 59 | 430s | |
| 65 | comp | | | | ↑ | |
| 66 | srgh075.021 | 00 36 19.4 | +25 48 25 | 59 | 450s | |
| 67 | comp | | | | ↑ | |
| 68 | srgh075.024 | 00 36 32.5 | +25 48 16 | 59 | 600s | extra # is 022124p57115 would like it, too possible |
| 69 | comp | | | | ↑ | |
| 70 | 022124p57115 | 02 21 27.4 | +57 11 51.7 | 83 | 600s | 1-2 extra stars to the west want, done 42 |
| 71 | comp | | | | ↑ | |
| 72 | 022128p570304 | 02 21 29 | +57 03 01.3 | 83 | 450s | want brightest |
| 73 | comp | | | | ↑ | |
| 74 | 022128p570351 | 02 21 28.9 | +57 03 51.8 | 83 | 450s | |
| 75 | comp | | | | ↑ | |
| 76 | 022124p571359 | 02 21 28.9 | +57 13 59.9 | 83 | 450s | circus! |
| 77 | comp | | | | ↑ | |
| 78 | 022130p570124 | 02 21 30.6 | +57 01 24.6 | 83 | 450s | |
| 79 | comp | | | | ↑ | |
| 80 | | | | | 900s | |
| 81 | comp | | | | ↑ | |

71 is bright star to West on file 70 renamed it

022124 p 57115

chip gain calculation slightly low (~7.8)

60 inch Telescope Log
 Observer: Bragg
 PI: Bragg, Calvert
 Spectrograph: FAR
 Grating: std
 Date: 12/5/99
 Page: 8042

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|--------|---------------|------------|-------------|-----|-------|--|
| 82 | 022130p570359 | 02 21 30.8 | +57 03 59.8 | 83 | 600s | not so great... cirrus |
| 83 | comp | | | | ↑ | |
| 84 | 022132p570035 | 02 21 32.1 | +57 00 36 | 83 | 600s | " |
| 85 | comp | | | | ↑ | |
| 86 | 022133p570749 | 02 21 33.3 | +57 07 49.8 | 83 | 600s | " try longer exp? |
| 87 | comp | | | | ↑ | |
| 88 | | | | 83 | 1500s | barely OK |
| 89 | comp | | | | ↑ | |
| 90 | 022132p570035 | | | 83 | 1500s | trying longer exp (cirrus) |
| 91 | comp | | | | ↑ | |
| 92 | 022130p570359 | | | 83 | 1200s | redo bit of clouds |
| 93 | comp | | | | ↑ | |
| 94 | 022133p570923 | 2 21 34 | +57 09 23 | 83 | 900s | |
| 95 | comp | | | | ↑ | |
| 96 | 022133p571202 | 2 21 33.4 | +57 12 22 | 83 | 600s | |
| 97 | comp | | | | ↑ | |
| 98 | 022135p570831 | 2 21 35.9 | +57 08 31.9 | 83 | 600s | cloud-ack! want at ~140 |
| 99 | comp | | | | ↑ | |
| 100 | 022135p570950 | 2 21 35.2 | +57 09 50 | 83 | 900s | I think one on E is one I want (both might be good) |
| 101 | comp | | | | ↑ | |
| 102 | 022136p571523 | 2 21 37 | +57 15 23 | 83 | 900s | more clouds on their way... black |
| 103 | comp | | | | ↑ | |
| 104 | 022139p565914 | 2 21 39.7 | 56 59 54 | 83 | 1200s | |
| 105 | comp | | | | ↑ | |
| 106 | 022146p570822 | 2 21 40.3 | 57 08 22.9 | 82 | 1200s | doing exp bit of cloud |
| 107 | comp | | | | ↑ | |
| | | | | | | stopping for total cloud cover ↓ a little better now |
| 108 | qv Sony-57601 | 05 55 46.3 | 00 06 48 | 112 | 900s | |
| 109 | comp | | | | ↑ | |

60 inch Telescope Log

Observer: Bragg

PI: cdNet

Spectrograph: FACT

Grating: std

Page: 8043

Date: 12/5/99

| Number | Object | R.A. | Dec. | I/R | Exp | Comments |
|---------|--------------|-------------|--------------|-----|-------|--------------------------|
| 110 | gvsorb-54417 | 05 49 55.3 | +00 06 32.3 | 112 | 1500s | (long bit of clouds) |
| 111 | comp | | | | ↑ | may be extra to the east |
| 112 | gvsorb-53568 | 05 48 11.72 | -00 21 53 | 112 | 1200s | |
| 113 | comp | | | | ↑ | |
| | | | | | | clouded over again -- |
| | | | | | | try somewhere else |
| | | | | | | northward then |
| 114 | gvsorb-60484 | 05 51 9.6 | -00 51 0.5 | 112 | 1200s | later now |
| 115 | comp | | | | ↑ | |
| 116 | gvsorb-58275 | 05 45 10.4 | -00 31 22.5 | 112 | 1500s | |
| 117 | comp | | | | ↑ | |
| 118 | gvsorb-50206 | 05 57 27.79 | -00 13 13.10 | 112 | 1200s | |
| 119 | comp | | | | ↑ | |
| 120 | a574-117 | 07 21 50.98 | +56 15 52 | 64 | 1200s | NO COMP = REB |
| 121 | comp | 7 12 50 | +55 38 38 | | ↑ | MOVED |
| 122 | a574-115 | 07 12 50.4 | +55 38 38 | 64 | 1200s | extra obj to east |
| 123 | comp | | | | ↑ | |
| 124 | a574-103 | 07 20 42.98 | +57 10 22.2 | 64 | 1200s | |
| 125 | comp | | | | ↑ | |
| 126 | SN2986? | | | | 600s | hope 0° = parallel |
| 127 | SN2985 | 9 44 18 | -21 15 14 | 2 | 600s | → for real this time ← |
| 128 | Feige 37 (I) | | | | 120s | 20° = parallel |
| 129 | comp | | | | (12s) | |
| 130 | comp | | | | | |
| 131-140 | BIAS | | | | | bin by 4 ↓ |
| 141-150 | FLAT | | | | 6s | |
| 151-160 | BIAS | | | | | bin by 2 ↓ |
| 161-170 | FLAT | | | | 12s | |
| 171-175 | DARK | | | | 900s | |

at 9:20

60 inch Telescope Log

Observer: A. MahdaviPI: All/Mahdavi/KirchnerSpectrograph: FASTGrating: 300Page: 8044Date: December 6, 1999

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|-------------|------------|----------|-----|------------------|---------------------------------|
| 1-10 | BIAS | | | | | Bin by 4 |
| 11-20 | FLAT | | | | 6 ^s | ↓ |
| 21-30 | FLAT | | | | 12 ^s | Bin by 2 |
| 31-40 | BIAS | | | | | ↓ |
| 41-45 | DARK | | | | 900 ^s | Bin by 4 |
| 46-50 | SKY | | | | 3 ^s | Partly cloudy (overhead, too) |
| 51 | COMP | | | ↑ | | |
| 52 | FEIGE 110 | 23:17 | -5:26 | 56 | 180 ^s | |
| 53 | COMP | | | ↑ | | |
| 54 | N 7331 | 22:34 | 34:09 | 57 | 180 ^s | |
| 55 | COMP | | | ↑ | | |
| 56 | src6075.008 | 00:35:22 | 24:51:59 | 59 | 17 ^m | |
| 57 | COMP | | | ↑ | | Clearing |
| 58 | src6075.005 | 00:34:25 | 24:36:12 | 59 | 20 ^m | |
| 59 | COMP | | | ↑ | | |
| 60 | src6075.001 | 00:33:11 | 25:41:77 | 59 | 21 ^m | |
| 61 | COMP | | | ↑ | | |
| 62 | SN1999ge | 00:56:43.8 | -9:54:43 | 2 | 20 ^m | Rotated to parallactic Bin by 2 |
| 63 | COMP | | | ↑ | 12 ^s | angle -8.9° |
| 64 | FEIGE 110 | 23:17 | -5:26 | 56 | 5 ^m | Rotated to |
| 65 | COMP | | | ↑ | 12 ^s | 318° ↓ |
| 66 | src6075.012 | 00:35:47 | 27:14:07 | 59 | 20 ^m | Bin by 4 |
| 67 | COMP | | | ↑ | | |
| 68 | src6075.016 | 00:36:03 | 26:47:32 | 59 | 20 ^m | |
| 69 | COMP | | | ↑ | | |
| 70 | src6075.020 | 00:36:25 | 25:45:16 | 59 | 20 ^m | |
| 71 | COMP | | | ↑ | | |
| 72 | src6075.022 | 00:36:20.4 | 26:30:09 | 59 | 20 ^m | |
| 73 | COMP | | | ↑ | | |
| 74 | src6075.023 | 00:36:29.8 | 26:54:16 | 59 | 20 ^m | |

could get it

60 inch Telescope Log

Spectrograph: FAST

Observer: A. Mahdavi

Grating: 300

Page: 8045

PI: Mahdavi/Bragg/Kirshnedalvet

Date: December 6, 1999

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|--------|---------------|-----------|-----------|-----|-----------------|-------------------------|
| 75 | COMP | | | ↑ | | |
| 76 | Srg6075.31 | 00:37:05 | 25:07:38 | 59 | 23 ^m | Star to W |
| 77 | COMP | | | ↑ | | |
| 78 | Srg6075.36 | 00:37:08 | 25:44:33 | 59 | 10 ^m | |
| 79 | COMP | | | ↑ | | |
| 80 | 022139p571105 | | | 83 | 10 ^m | |
| 81 | COMP | | | ↑ | | |
| 82 | 022139p571148 | | | 83 | 10 ^m | |
| 83 | COMP | | | ↑ | | |
| 84 | 022143p570053 | | | 83 | 5 ^m | |
| 85 | COMP | | | ↑ | | |
| 86 | 022144p570653 | | | 83 | 8 ^m | |
| 87 | COMP | | | ↑ | | |
| 88 | 022145p570522 | | | 83 | 5 ^m | |
| 89 | COMP | | | ↑ | | |
| 90 | 022146p570208 | | | 83 | 12 ^m | Over star to W Bin by 2 |
| 91 | COMP | | | ↑ | | |
| 92 | SN1999em | 4:41:27.0 | -2:51:45 | 2 | 10 ^m | Angle 4° |
| 93 | COMP | | | ↑ | 12 ^s | |
| 94 | quasarb-56574 | 5:52:56 | -00:16:03 | 112 | 15 ^m | Bin by 4 |
| 95 | COMP | | | ↑ | | |
| 96 | quasarb-57440 | 5:54:12.7 | -00:19:07 | 112 | 15 ^m | |
| 97 | COMP | | | ↑ | | |
| 98 | quasarb-57451 | 5:54:50.0 | 00:07:32 | 112 | 12 ^m | |
| 99 | COMP | | | ↑ | | |
| 100 | quasarb-53126 | 5:38:39.3 | -00:38:39 | 112 | 12 ^m | |
| 101 | COMP | | | ↑ | | |
| 102 | quasarb-50513 | 5:35:42.1 | -00:59:42 | 112 | 12 ^m | |
| 103 | COMP | | | ↑ | | |
| 104 | quasarb-51967 | 5:39:26.2 | -00:53:51 | 112 | 12 ^m | |

60 inch Telescope Log

Observer: Mandavi

PI: Calvet/Rines/Kirshner

Spectrograph: FAST

Grating: 300

Page: 8046

Date: Dec 6, 1999

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|---------|--------------|-----------|-----------|-----|------------------|----------------------|
| 105 | COMP | | | ↑ | | |
| 106 | qvs016-45324 | 5:43:42.7 | -2:09:21 | 112 | 15 ^m | |
| 107 | COMP | | | ↑ | | |
| 108 | qvs016-56940 | 5:33:47.3 | -1:20:27 | 112 | 15 ^m | |
| 109 | COMP | | | ↑ | | |
| 110 | qvs016-57321 | 5:34:19.5 | -1:25:2 | 112 | 20 ^m | |
| 111 | COMP | | | ↑ | | |
| 112 | qvs016-53312 | 5:00:33 | 00:07:48 | 112 | 10 ^m | |
| 113 | COMP | | | ↑ | | |
| 114 | a5766-081 | 7:20:16.5 | 56:52:06 | 64 | 15 ^m | |
| 115 | COMP | | | ↑ | | |
| 116 | a5766-082 | 7:13:02.2 | 59:58:42 | 64 | 15 ^m | |
| 117 | COMP | | | ↑ | | |
| 118 | a5766-083 | 7:18:41.2 | 54:26:01 | 64 | 15 ^m | |
| 119 | COMP | | | ↑ | | |
| 120 | a5766-084 | 7:14:04.0 | 56:05:46 | 64 | 12 ^m | |
| 121 | COMP | | | ↑ | | |
| 122 | SN1999gh | 9:44:19.8 | -21:16:25 | 2 | 20 ^m | Bin by 2; angle = 0° |
| 123 | COMP | | | ↑ | 12 ^s | |
| 124 | Feige 34 | 10:36:41 | 43:21:50 | 56 | 3 ^m | angle = 19° |
| 125 | COMP | | | ↑ | 12 ^s | |
| 126 | Feige 34 | ↓ | ↓ | 56 | 90 ^s | Bin by 4 |
| 127 | COMP | | | ↑ | | |
| 128 | N3377 | 10:45 | 14:14 | 57 | 60 ^s | |
| 129 | COMP | | | ↑ | | |
| 130-139 | BIAS | | | | | |
| 140-149 | FLAT | | | | 15 | |
| 150-159 | FLAT | | | | 12 ^s | Bin by 2 |
| 160-169 | BIAS | | | | | |
| 170-174 | DARK | | | | 100 ^s | ↓ |

60 inch Telescope Log
 Observer: A. Mahdavi
 PI: All / Firshar / Mahdavi
 Spectrograph: FAST
 Grating: 300
 Date: December 7, 1999
 Page: 8047

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|--------|-------------|------------|----------|-----|-----------------|-------------------------------------|
| 1-10 | BIAS | | | | | Bin by 4 Mostly Cloudy |
| 11-20 | FLAT | | | | 6 ^s | ↓ |
| 21-30 | FLAT | | | | 12 ^s | Bin by 2 |
| 31-40 | BIAS | | | | | ↓ Clearing |
| 41-45 | DARK | | | | 15 ^m | ↓ Bin by 2! |
| 46-50 | SKY | | | | 3 ^s | Bin by 4 |
| 51 | COMP | | | ↑ | | |
| 52 | FEIGE 110 | 23:17 | -5:26 | 56 | 3 ^m | Angle = 73 |
| 53 | COMP | ↓ | ↓ | ↑ | | |
| 54 | FEIGE 110 | ↓ | ↓ | 56 | 5 ^m | Bin by 2 ↓ |
| 55 | COMP | | | ↑ | 12 ^s | ↓ |
| 56 | SN 1999el | 20:37:17.8 | 66:06:12 | 2 | 10 ^m | Angle = 58 interesting ↓ |
| 57 | COMP | | | ↑ | | ↓ |
| 58 | M31 | 00:40 | 40:59 | 57 | 1 ^m | Bin by 4 ↓ |
| 59 | COMP | | | ↑ | | |
| 60 | srGb075.035 | 00:37:07 | 25:54:39 | 59 | 15 ^m | |
| 61 | COMP | | | ↑ | | |
| 62 | srGb075.038 | 00:37:14.6 | 25:43:08 | 59 | 12 ^m | |
| 63 | COMP | | | ↑ | | |
| 64 | srGb075.037 | 00:37:08.9 | 25:44:52 | 59 | 15 ^m | |
| 65 | COMP | | | ↑ | | |
| 66 | srGb075.033 | 00:37:05.7 | 25:41:52 | 59 | 8 ^m | |
| 67 | COMP | | | ↑ | | |
| 68 | srGb075.039 | 00:37:24.8 | 23:55:46 | 59 | 12 ^m | |
| 69 | COMP | | | ↑ | | |
| 70 | srGb075.029 | 00:37:03.4 | 25:38:54 | 59 | 22 ^m | redo? yes |
| 71 | COMP | | | ↑ | | |
| 72 | srGb075.044 | 00:37:54.9 | 26:01:49 | 59 | 25 ^m | |
| 73 | COMP | | | ↑ | | |
| 74 | srGb075.046 | 00:38:03.6 | 25:11:33 | 59 | 20 ^m | |

70 Cosmic ray on top of what might be H β

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | Page: <u>8048</u> | |
|---------------------------------|---------------|------------|---------------------------|-----|-------------------------------|-----------|
| Observer: <u>A. Mahdavi</u> | | | Grating: <u>300</u> | | Date: <u>December 7, 1999</u> | |
| PI: <u>Mahdavi/Bragg/Calvet</u> | | | | | | |
| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
| 75 | COMP | | | ↑ | | |
| 76 | Srg6075.47 | 00:38:11.9 | 25:23:41 | 59 | 25 ^m | |
| 77 | COMP | | | ↑ | | |
| 78 | Srg6075.48 | 00:38:21.7 | 25:36:44 | 59 | 17 ^m | |
| 79 | COMP | | | ↑ | | |
| 80 | Srg6075.49 | 00:38:26.4 | 25:36:14 | 59 | 12 ^m | Star to E |
| 81 | COMP | | | ↑ | | |
| 82 | Srg6075.50 | 00:38:29.2 | 24:28:36 | 59 | 12 ^m | |
| 83 | COMP | | | ↑ | | |
| 84 | 022147p571147 | | | 83 | 10 ^m | |
| 85 | COMP | | | ↑ | | |
| 86 | 022147p571250 | | | 83 | 10 ^m | |
| 87 | COMP | | | ↑ | | |
| 88 | 022200p570132 | | | 83 | 10 ^m | |
| 89 | COMP | | | ↑ | | |
| 90 | 022217p570214 | | | 83 | 10 ^m | |
| 91 | COMP | | | ↑ | | |
| 92 | 022229p570503 | | | 83 | 12 ^m | |
| 93 | COMP | | | ↑ | | |
| 94 | 022230p570516 | | | 83 | 15 ^m | |
| 95 | COMP | | | ↑ | | |
| 96 | 022238p570014 | | | 83 | 15 ^m | |
| 97 | COMP | | | ↑ | | |
| 98 | qvs01b-45450 | 5:30:57.1 | -0:40:38 | 112 | 18 ^m | |
| 99 | COMP | | | ↑ | | |
| 100 | qvs01b-44714 | 5:40:24.7 | -1:52:31 | 112 | 20 ^m | |
| 101 | COMP | | | ↑ | | |
| 102 | qvs01b-64143 | 5:45:12.4 | -1:13:37 | 112 | 20 ^m | |
| 103 | COMP | | | ↑ | | |
| 104 | qvs01b-62237 | 5:39:58.0 | -1:31:56 | 112 | 18 ^m | |

| 60 inch Telescope Log | | Spectrograph: <u>FAST</u> | | Page: <u>8049</u> | | |
|---|---------------|---------------------------|------------|-------------------------------|-----------------|--------------------|
| Observer: <u>Mahdavi</u> | | Grating: <u>300</u> | | Date: <u>December 7, 1999</u> | | |
| PI: <u>Calvet/Rinos/Mahdavi/Kishner</u> | | | | | | |
| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
| 105 | COMP | | | ↑ | | |
| 106 | quso16-63408 | 5:41:58.1 | -1:34:16 | 112 | 18 ^m | |
| 107 | COMP | | | ↑ | | |
| 108 | quso16-63437 | 5:42:08.6 | -1:15:59 | 112 | 18 ^m | |
| 109 | COMP | | | ↑ | | |
| 110 | quso16-63469 | 5:42:26.3 | -1:20:24 | 112 | 12 ^m | |
| 111 | COMP | | | ↑ | | |
| 112 | quso16-61045 | 5:58:18.2 | -0:14:52 | 112 | 12 ^m | |
| 113 | COMP | | | ↑ | | |
| 114 | AS766-117 | 7:21:56.0 | 56:15:52 | 64 | 12 ^m | |
| 115 | COMP | | | ↑ | | |
| 116 | nrqs110.162 | 11:01:56.6 | 10:17:29 | 59 | 18 ^m | W |
| 117 | COMP | | | ↑ | | |
| 118 | nrqs110.162 E | 11:01:57.5 | 10:17:40 | 59 | 10 ^m | EAGN Broad em. |
| 119 | COMP | | | ↑ | | |
| 120 | nrqs110.159 | 11:01:28 | 10:21:46 | 59 | 12 ^m | Windy |
| 121 | COMP | | | ↑ | | |
| 122 | SN1999ad | 8:38:24.6 | 25:45:33.1 | 2 | 20 ^m | Bin by 2 Angle=65° |
| 123 | COMP | | | ↑ | 12 ^s | ↓ |
| 124 | SN1999gh | 9:44:19.8 | -21:16:25 | 2 | 10 ^m | Angle=5° |
| 125 | COMP | | | ↑ | 12 ^s | ↓ |
| 126 | nrqs110.163 | 11:02:03.4 | 10:19:58 | 59 | 15 ^m | Bin by 4 |
| 127 | COMP | | | ↑ | | |
| 128 | nrqs110.166 | 11:07:17.4 | 10:30:24 | 59 | 10 ^m | |
| 129 | COMP | | | ↑ | | |
| 130 | FEIGE 34 | 10:36 | 42:21 | 56 | 90 ^s | |
| 131 | COMP | | | ↑ | | |
| 132 | N 5577 | 10:45 | 14:14 | 57 | 60 ^s | |
| 133 | COMP | | | ↑ | | |
| 134-43 | BIAS | | | | | |

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | | |
|-----------------------------|--------------|------------|-------------------------------|-----|-------------------|---|
| Observer: <u>A. Mahdavi</u> | | | Grating: <u>300</u> | | Page: <u>8051</u> | |
| PI: <u>All/Mahdavi</u> | | | Date: <u>December 8, 1999</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 1-10 | BIAS | | | | | clear! |
| 11-20 | FLAT | | | | 6 ^s | |
| 21-30 | FLAT | | | | 12 ^s | Bin by 2 |
| 31-40 | BIAS | | | | | ↓ |
| 41-45 | DARK | | | | | Bin by 4 |
| 46-50 | SKY | | | | 20 ^s | Done problems, so count |
| 51 | COMP | | | ↑ | | rate is low, will try in AM. Done will not stop moving, even after several vitrex resets. Engineers had left various some equipment unplugged. |
| 52 | FEIGELIO | 23:17 | -5:26 | S6 | 150 ^s | |
| 53 | COMP | | | ↑ | | |
| 54 | M31 | 00:40 | 40:59 | S7 | 60 ^s | |
| 55 | COMP | | | ↑ | | |
| 56 | Srgb075.029 | 00:37:03.4 | 25:38:54 | S9 | 25 ^m | |
| 57 | COMP | | | ↑ | | |
| 58 | Srgb075.053 | 00:38:42 | 24:58:39 | S9 | 12 ^m | |
| 59 | COMP | | | ↑ | | |
| 60 | Srgb075.058 | 00:38:57 | 25:38:15 | S9 | 10 ^m | |
| 61 | COMP | | | ↑ | | |
| 62 | Srgb075.061 | 00:37:19 | 24:43:42 | S9 | 15 ^m | |
| 63 | COMP | | | ↑ | | |
| 64 | Srgb075.082E | 00:41:28 | 25:29:59 | S9 | 5 ^m | |
| 65 | COMP | | | ↑ | | |
| 66 | Srgb075.082W | | | S9 | 8 ^m | Slit related to 30° |
| 67 | COMP | | | ↑ | | to get "barn" |
| 68 | Srgb075.084 | 00:41:40 | 26:56:42 | S9 | 15 ^m | windy |
| 69 | COMP | | | ↑ | | |

56 - U. poor but emission line at same λ
 as observation taken last night

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | Page: <u>8052</u> | |
|-----------------------------|---------------|----------|---------------------------|-----|-------------------------------|--------------------|
| Observer: <u>A. Mahdavi</u> | | | Grating: <u>300</u> | | Date: <u>December 8, 1999</u> | |
| PI: <u>Mahdavi/Bragg</u> | | | | | | |
| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
| 70 | sr6075.087 | 00:42:21 | 25:03:38 | 59 | 15m | |
| 71 | COMP | | | ↑ | | |
| 72 | sr6075.089 | 00:42:27 | 25:10:57 | 59 | 15m | |
| 73 | COMP | | | ↑ | | |
| 74 | sr6075.091 | 00:42:31 | 25:17:30 | 59 | 15m | |
| 75 | COMP | | | ↑ | | |
| 76 | sr6075.090 | 00:42:28 | 25:37:05 | 59 | 18m | |
| 77 | COMP | | | ↑ | | |
| 78 | sr6075.092 | 00:42:37 | 25:18:15 | 59 | 12m | |
| 79 | COMP | | | ↑ | | |
| 80 | sr6075.096 | 00:42:51 | 25:54:06 | 59 | 15m | |
| 81 | COMP | | | ↑ | | |
| 82 | sr6075.100 | 00:43:49 | 26:11:11 | 59 | 18m | |
| 83 | COMP | | | ↑ | | |
| 84 | sr6075.121 | 00:43:52 | 24:21:19 | 59 | 10m | |
| 85 | COMP | | | ↑ | | |
| 86 | 022147p591521 | | | 83 | 7m | |
| 87 | COMP | | | ↑ | | |
| 88 | 022148p570741 | | | 83 | 7m | Bad seeing ~ 4" |
| 89 | COMP | | | ↑ | | |
| 90 | 022148p57506 | | | 83 | 15m | |
| 91 | COMP | | | ↑ | | |
| 92 | 022149p52017 | | | 83 | 9m | |
| 93 | COMP | | | ↑ | | |
| 94 | 022149p56123 | | | 83 | 12m | Row 38 is the star |
| 95 | COMP | | | ↑ | | |
| 96 | 022149p57124 | | | 83 | 15m | Row 32-35 |
| 97 | COMP | | | ↑ | | |
| 98 | 022150p510017 | | | 83 | 18m | |
| 99 | COMP | | | ↑ | | |

H 96 - ALSO TOOK K OBJECT
(2 STARS NEAR CENTER)

60 inch Telescope Log
 Observer: A. Madhuj
 PI: Bing/Calvet/Rines/Kirchner
 Spectrograph: FAST
 Grating: 300
 Date: December 8, 1999
 Page: 8033

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|---------------|-----------|-----------|-----|-----|------------------|
| 100 | 022150p590547 | | | 83 | 20m | Row 40 |
| 101 | COMP | | | ↑ | | |
| 102 | qvsnb-54930 | 5:40:39 | -00:49:05 | 112 | 20m | |
| 103 | COMP | | | ↑ | | |
| 104 | qvsnb-54654 | 5:50:16 | 00:5:6 | 112 | 10m | |
| 105 | COMP | | | ↑ | | |
| 106 | qvsnb-54935 | 5:40:39 | -00:49:14 | 112 | 12m | |
| 107 | COMP | | | ↑ | | |
| 108 | qvsnb-45116 | 5:41:33 | -1:57:58 | 112 | 18m | |
| 109 | COMP | | | ↑ | | |
| 110 | qvsnb-45132 | 5:41:39 | -1:59:40 | 112 | 12m | |
| 111 | COMP | | | ↑ | | |
| 112 | qvsnb-61071 | 5:58:19.6 | -00:28:19 | 112 | 12m | |
| 113 | COMP | | | ↑ | | |
| 114 | qvsnb-62233 | 5:59:29 | 00:07:21 | 112 | 12m | |
| 115 | COMP | | | ↑ | | |
| 116 | qvsnb-62712 | 5:59:56 | -00:14:38 | 112 | 12m | |
| 117 | COMP | | | ↑ | | |
| 118 | a5766-085 | 7:26:49.4 | 54:30:55 | 64 | 12m | Star to W |
| 119 | COMP | | | ↑ | | |
| 120 | a5766-087 | 7:23:12.1 | 54:43:50 | 64 | 12m | |
| 121 | COMP | | | ↑ | | |
| 122 | a5766-088 | 7:10:58 | 56:29:25 | 64 | 12m | |
| 123 | COMP | | | ↑ | | |
| 124 | a5766-089 | 7:21:52 | 54:51:11 | 64 | 12m | |
| 125 | COMP | | | ↑ | | |
| 126 | a5766-093 | 7:19:55 | 56:51:49 | 64 | 15m | |
| 127 | COMP | | | ↑ | | |
| 128 | SN1999gh | 9:44:11.8 | -21:16:25 | 2 | 10m | Bin by 2 |
| 129 | COMP | | | ↑ | 12s | Angle = -3° ↓ |

| 60 inch Telescope Log | | | | Spectrograph: <u>FAST</u> | | Page: <u>8054</u> | |
|--------------------------|----------|-------------|------------|---------------------------|-----------------|-------------------------------|---------------------------|
| Observer: <u>Mahdavi</u> | | | | Grating: <u>300</u> | | Date: <u>December 8, 1999</u> | |
| PI: <u>Kirshner</u> | | | | | | | |
| Number | Object | R. A. | Dec. | L/R | Exp | Comments | |
| 130 | SNN3251 | 10:29:19.28 | 26:06:19.4 | 2 | 20 ^m | Bin by 2 | Angle = -55° |
| 131 | COMP | | | ↑ | 12 ^s | ↓ | |
| 132 | SN1999ew | 11:26:17.64 | 46:58:32.4 | 2 | 15 ^m | | Angle = 47° |
| 133 | COMP | | | ↑ | 12 ^s | ↓ | |
| 134 | Feige 34 | 10:39 | 43:08 | 56 | 3 ^m | | Angle = -16 |
| 135 | COMP | | | ↑ | 12 ^s | ↓ | |
| 136 | Feige 34 | ↓ | ↓ | 56 | 90 ^s | Bin by 4 | ↓ |
| 137 | COMP | | | ↑ | | | |
| 138 | N3377 | 10:45 | 14:14 | 57 | 60 ^s | | |
| 139 | COMP | | | ↑ | | | |
| 140-149 | BIAS | | | | | | |
| 150-159 | FLAT | | | | 6 ^s | | |
| 160-169 | FLAT | | | | 12 ^s | Bin by 2 | |
| 170-179 | BIAS | | | | | ↓ | |
| 180-184 | SKY | | | | | Bin by 4 | |
| 185 | COMP | | | ↑ | | ↓ | |
| 186-190 | DARK | | | | 15 ^m | Bin by 2 | NOT IN DIRECTORY (SPARKY) |

Do not have files 186-190

| 60 inch Telescope Log | | Spectrograph: <u>EAST</u> | | Page: <u>8055</u> | | |
|---------------------------------|---------------|---------------------------|----------|--------------------------|-----|---|
| Observer: <u>A. Maheshwari</u> | | Grating: <u>300</u> | | Date: <u>Dec 9, 1999</u> | | |
| PI: <u>All/Maheshwari/Braga</u> | | | | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 1-10 | BIAS | | | | | Cirrus, lots of cirrus |
| 11-20 | FLAT | | | | 6s | |
| 21-30 | FLAT | | | | 12s | Bin by 2 |
| 31-40 | BIAS | | | | | ↓ |
| 41-45 | DARK | | | | 15m | Bin by 4 |
| 46-50 | SKY | | | | 3s | Cloudy flats |
| 51 | COMP | | | ↑ | | |
| 52 | Frige 110 | 23:20 | -5:26 | 56 | 5m | Very cloudy, but can see |
| 53 | COMP | | | ↑ | | bright objects. |
| 54 | MSI | | | 57 | 2m | |
| 55 | COMP | | | ↑ | | |
| 56 | src 6075.042 | 00:37:41 | 25:28:10 | 59 | 12m | |
| 57 | COMP | | | ↑ | | |
| 58 | src 6075.070 | 00:40:25 | 24:26:33 | 59 | 10m | |
| 59 | COMP | | | ↑ | | |
| 60 | src 6075.071 | 00:40:30 | 25:01:24 | 59 | 15m | |
| 61 | COMP | | | ↑ | | |
| 62 | 022150p571552 | | | 83 | 10m | |
| 63 | COMP | | | ↑ | | |
| 64 | 022201p570559 | | | 83 | 18m | |
| 65 | COMP | | | ↑ | | |
| 66 | 022220p571536 | | | 83 | 7m | |
| 67 | COMP | | | ↑ | | |
| 68 | 022228p571538 | | | 83 | 12m | |
| 69 | COMP | | | ↑ | | |
| 70 | 022253p571144 | | | 83 | 10m | |
| 71 | COMP | | | ↑ | | |
| 72 | 022256p571143 | | | 83 | 5m | Accidentally moved to 74 |
| 73 | COMP | | | ↑ | | before long comparison exposure. |
| 74 | 022258p571107 | | | 83 | 8m | Moved back to 72, took this comparison exposure. |

60 inch Telescope Log
 Observer: A Mahdavi
 PI: Bray
 Spectrograph: FAST
 Grating: 300
 Date: Dec 9, 1999
 Page: 8056

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|--------|----------------|-------|------|-----|-----------------|---------------------|
| 75 | COMP | | | ↑ | | |
| 76 | 022254 p571212 | | | 83 | 8 ^m | |
| 77 | COMP | | | ↑ | | |
| 78 | 022300 p570812 | | | 83 | 6 ^m | |
| 79 | COMP | | | ↑ | | |
| 80 | 022301 p570715 | | | 83 | 6 ^m | |
| 81 | COMP | | | ↑ | | |
| 82 | 022302 p571024 | | | 83 | 6 ^m | |
| 83 | COMP | | | ↑ | | |
| 84 | 022304 p570737 | | | 83 | 3 ^m | |
| 85 | COMP | | | ↑ | | |
| 86 | 022304 p571007 | | | 83 | 6 ^m | |
| 87 | COMP | | | ↑ | | |
| 88 | 022305 p570657 | | | 83 | 6 ^m | |
| 89 | COMP | | | ↑ | | |
| 90 | 022308 p570905 | | | 83 | 10 ^m | |
| 91 | COMP | | | ↑ | | |
| 92 | 022152 p565453 | | | 83 | 20 ^m | |
| 93 | COMP | | | ↑ | | |
| 94 | 022238 p571143 | | | 83 | 10 ^m | |
| 95 | COMP | | | ↑ | | |
| 96 | 022245 p571140 | | | 83 | 20 ^m | |
| 97 | COMP | | | ↑ | | |
| 98 | 022246 p571107 | | | 83 | 15 ^m | |
| 99 | COMP | | | ↑ | | |
| 100 | 022258 p570216 | | | 83 | 18 ^m | |
| 101 | COMP | | | ↑ | | |
| 102 | 022301 p570306 | | | 83 | 20 ^m | |
| 103 | COMP | | | ↑ | | |
| 104 | 022302 p570801 | | | 83 | 18 ^m | Interspersed clouds |

60 inch Telescope Log
 Observer: A Mahdavi
 PI: Bragg/Kirshner/Galvet/Mahdavi
 Spectrograph: EAST
 Grating: 300
 Date: Dec 9, 1999
 Page: 8057

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|----------------|------------|----------|-----|-----|--------------------|
| 105 | COMP | | | ↑ | | |
| 106 | 022301p570854 | | | 83 | 18m | |
| 107 | COMP | | | ↑ | | |
| 108 | SN1999 em | 4:41:23 | -2:51:43 | 2 | 15m | 13m by 2 |
| 109 | COMP | | | ↑ | | |
| 110 | Hiltner 600 | 6:42:37 | 7:11:25 | 56 | 90° | |
| 111 | COMP | | | ↑ | | |
| 112 | quasar - 56362 | 5:52:33 | 00:01:02 | 112 | 25m | Continually cloudy |
| 113 | COMP | | | ↑ | | |
| 114 | quasar - 57817 | 5:34:51.5 | -1:23:46 | 112 | 16m | |
| 115 | COMP | | | ↑ | | |
| 116 | quasar - 49242 | 5:34:52.9 | -0:32:59 | 112 | 15m | |
| 117 | COMP | | | ↑ | | |
| 118 | SNN3184 | 10:18:16.7 | 41:26:28 | 2 | 5m | Net rotated |
| 119 | COMP | | | ↑ | 125 | |
| 120 | SNN3184 | ↓ | ↓ | 2 | 10m | Rotated to 80° |
| 121 | COMP | | | ↑ | 125 | |
| 122 | quasar 1649316 | 5:37:57.2 | -0:48:10 | 112 | 12m | |
| 123 | COMP | | | ↑ | | |
| 124 | ngc110.166 | 11:02:17.4 | 10:30:24 | 59 | 12m | |
| 125 | COMP | | | ↑ | | |
| 126 | ngc110.168 | 11:02:24 | 10:20:35 | 59 | 15m | |
| 127 | COMP | | | ↑ | | |
| 128 | ngc110.131E | 11:00:19.2 | 10:02:48 | 59 | 9m | |
| 129 | COMP | | | ↑ | | |
| 130 | ngc110.131W | | | 59 | 9m | Star to W |
| 131 | COMP | | | ↑ | | |
| 132 | SN 1999 gh | | | 2 | 10m | Rotated to -3° |
| 133 | COMP | | | ↑ | 125 | |
| 134 | ss26164.191 | 11:20:51.2 | -8:6:21 | 59 | 9m | |

60 inch Telescope Log

Observer: A. Mahdavi

PI: Mahdavi

Spectrograph: FAST

Grating: 300

Page: 80SP

Date: Dec 9, 1999

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|---------|--------------|------------|----------|-----|-----------------|---------------|
| 135 | COMP | | | ↑ | | |
| 136 | SS 26164.192 | 11:20:54.5 | -7:00:47 | S9 | 15 ^m | |
| 137 | COMP | | | ↑ | | |
| 138 | SS 26164.193 | 11:21:09.0 | -8:19:51 | S9 | 12 ^m | |
| 139 | COMP | | | ↑ | | |
| 140 | SS 26164.194 | 11:21:17.5 | -8:44:01 | S9 | 12 ^m | |
| 141 | COMP | | | ↑ | | |
| 142 | FEIGER 4 | | | S6 | 90 ^s | |
| 143 | COMP | | | ↑ | | |
| 144 | N 3377 | | | S7 | 60 ^s | |
| 145 | COMP | | | ↑ | | |
| 146-155 | BIAS | | | | | |
| 156-165 | FLAT | | | | 6 ^s | |
| 166-175 | FLAT | | | | 12 ^s | 13m by 2 ↓ |
| 176-185 | BIAS | | | | | |
| 186-190 | DARK | | | | | |

60 inch Telescope Log
 Observer: Jha
 PI: All / Garnavich

Spectrograph: FAST
 Grating: 300
 Date: 12/10/99

8059
 Page: ~~8055~~

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|----------|------------|-----------|-----|--------------------------------|------------------------------------|
| 1-10 | BIAS | | | *0 | | binby 4 |
| 11-20 | FLAT | | | | 6 ^s | " |
| 21-30 | FLAT | | | | 12 ^s | binby 2 |
| 31-40 | BIAS | | | | | " |
| 41-43 | DARK | | | | 15 ^m | binby 4 |
| 44-48 | SKY | zenith | | *57 | 2 ^s -3 ^s | " cloudy |
| 49 | COMP | | | ↑ | | |
| 50-51 | DARK | | | *0 | | binby 4 might as well do something |
| 52 | Feige 25 | 02 38 35 | 05 28 08 | *56 | 150 ^s | still some clouds, but better |
| 53 | COMP | | | ↑ | | |
| 54 | M31 | | | *57 | 60 ^s | |
| 55 | COMP | | | ↑ | | |
| 56 | 1996bo | 01:48:22.8 | +11:31:15 | *91 | 10 ^m | oops, binby 4 still PA = 0 |
| 57 | COMP | | | ↑ | | |
| 58 | 1996bo | " | " | *91 | 20 ^m | binby 2 |
| 59 | COMP | | | ↑ | | |
| 60 | 1996bo | " | " | *91 | 10 ^m | |
| 61 | COMP | | | ↑ | | |
| 62 | 1995ak | 02 45 49 | 03 13 50 | *91 | 20 ^m | PA = 100 |
| 63 | COMP | | | ↑ | | |
| 64 | 1995ak | " | " | *91 | 20 ^m | |
| 65 | COMP | | | ↑ | | |
| 66 | 1995ak | " | " | *91 | 20 ^m | |
| 67 | COMP | | | ↑ | | |
| 68 | 1992bp | 03 36 38 | -18 21 15 | *91 | 20 ^m | PA = 40 needs more signal! |
| 69 | COMP | | | ↑ | | |
| 70 | 1992bp | " | " | *91 | 20 ^m | |
| 71 | COMP | | | ↑ | | |
| 72 | 1992bp | " | " | *91 | 20 ^m | |
| 73 | COMP | | | ↑ | | |

PROGRAM 91 are scanned observations;
 NOT REDUCED

| 60 inch Telescope Log | | | | Spectrograph: <u>FAST</u> | | |
|--------------------------|-----------|----------|-----------|---------------------------|------------------|----------------------|
| Observer: <u>Jha</u> | | | | Grating: <u>300</u> | | Page: <u>8061</u> |
| PI: <u>All/Garnavich</u> | | | | Date: <u>12/11/99</u> | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 1-10 | BIAS | | | #0 | | binby4 |
| 11-20 | FLAT | | | | 6 ^s | " |
| 21-30 | FLAT | | | | 12 ^s | binby2 |
| 31-40 | BIAS | | | | | |
| 41-45 | DARK | | | | 15 ^m | binby4 |
| 46-50 | SKY | zenith | | #57 | 2-3 ^s | |
| 51 | COMP | | | ↑ | | |
| 52 | Feige 110 | 23 19 56 | -05 10 27 | #50 | 2 ^m | PA = 90° clear |
| 53 | COMP | | | ↑ | | (not parallactic) |
| 54 | Feige 110 | " | " | #56 | 4 ^m | binby2 |
| 55 | COMP | | | ↑ | | |
| 56 | M31 | 00 42 45 | 40 59 42 | #57 | 60 ^s | binby4 |
| 57 | COMP | | | ↑ | | |
| 58 | 1998dk | 23 14 40 | 04 36 14 | #91 | 10 ^m | binby2 PA = 100 scan |
| 59 | COMP | | | ↑ | | |
| 60 | 1998dk | " | " | #91 | 10 ^m | |
| 61 | COMP | | | ↑ | | |
| 62 | 1998dk | " | " | #91 | 10 ^m | |
| 63 | COMP | | | ↑ | | |
| 64 | 1998dk | 00 14 30 | -00 44 44 | #91 | 20 ^m | PA = 80 |
| 65 | COMP | | | ↑ | | |
| 66 | 1998dk | " | " | #91 | 20 ^m | |
| 67 | COMP | | | ↑ | | |
| 68 | 1998dk | " | " | #91 | 20 ^m | |
| 69 | COMP | | | ↑ | | |
| 70 | 1996b1 | 00 36 18 | 11 23 43 | #91 | 20 ^m | PA = 80 |
| 71 | COMP | | | ↑ | | |
| 72 | 1996b1 | " | " | #91 | 20 ^m | |
| 73 | COMP | | | ↑ | | |
| 74 | 1996b1 | " | " | #91 | 20 ^m | |

60 inch Telescope Log
 Observer: Jha
 PI: Garnavich/Kirshner/All

Spectrograph: FAST
 Grating: 300
 Date: 12/11/99

Page: 9062

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|--------|-------------|----------|-----------|-----|-----------------|------------------------|
| 75 | COMP | | | ↑ | | |
| 76 | 1998de | 00 48 03 | 27 36 41 | #91 | 15 ^m | PA = 90 |
| 77 | COMP | | | ↑ | | |
| 78 | 1998de | " | " | #91 | 15 ^m | |
| 79 | COMP | | | ↑ | | |
| 80 | 1998de | " | " | #91 | 15 ^m | |
| 81 | COMP | | | ↑ | | |
| 82 | 1998ef | 01 03 28 | 32 13 39 | #91 | 20 ^m | PA = 100 star on slit |
| 83 | COMP | | | ↑ | | |
| 84 | 1998ef | " | " | #91 | 20 ^m | |
| 85 | COMP | | | ↑ | | |
| 86 | 1998ef | " | " | #91 | 20 ^m | |
| 87 | COMP | | | ↑ | | |
| 88 | SN1999em | 04 41 30 | -02 52 21 | #2 | 10 ^m | PA = -9 |
| 89 | COMP | | | ↑ | | |
| 90 | Hiltner 600 | 06 45 15 | 02 08 18 | #56 | 60 ^s | PA = -41 (parallactic) |
| 91 | COMP | | | ↑ | | |
| 92 | 1993ac | 05 46 16 | 63 21 10 | #91 | 20 ^m | PA = -30 |
| 93 | COMP | | | ↑ | | |
| 94 | 1993ac | " | " | #91 | 20 ^m | |
| 95 | COMP | | | ↑ | | |
| 96 | 1993ac | " | " | #91 | 20 ^m | |
| 97 | COMP | | | ↑ | | |
| 98 | 1996bv | 06 16 26 | 57 02 53 | #91 | 20 ^m | PA = -56 |
| 99 | COMP | | | ↑ | | |
| 100 | 1996bv | " | " | #91 | 20 ^m | |
| 101 | COMP | | | ↑ | | |
| 102 | 1996bv | " | " | #91 | 20 ^m | |
| 103 | COMP | | | ↑ | | |
| 104 | 1998ec | 06 53 17 | 50 01 52 | #91 | 20 ^m | PA = -50 |

60 inch Telescope Log
 Observer: Jha
 PI: Gajnavich/All/Kirshner
 Spectrograph: FAST
 Grating: 300
 Date: 12/11/99
 Page: 8063

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|---------|----------|------------|-----------|-----|-----------------|--------------------------|
| 105 | COMP | | | ↑ | | |
| 106 | 1998ec | " | " | #91 | 20 ^m | |
| 107 | COMP | | | ↑ | | |
| 108 | 1998ec | " | " | #91 | 20 ^m | |
| 109 | COMP | | | ↑ | | |
| 110 | 1997do | 07 26 51 | 47 05 11 | #91 | 20 ^m | PA = -10 |
| 111 | COMP | | | ↑ | | |
| 112 | 1997do | " | " | #91 | 20 ^m | |
| 113 | COMP | | | ↑ | | |
| 114 | 1997do | " | " | #91 | 20 ^m | |
| 115 | COMP | | | ↑ | | |
| 116 | SN1999gh | 09 44 20 | -21 16 25 | #2 | 10 ^m | PA = 1 |
| 117 | COMP | | | ↑ | | |
| 118 | SN1999gi | 10 18 21 | 41 26 58 | #2 | 10 ^m | PA = 22 |
| 119 | COMP | | | ↑ | | |
| 120 | 1998bu | 10 46 47 | 11 48 11 | #91 | 10 ^m | PA = 45 |
| 121 | COMP | | | ↑ | | |
| 122 | 1998bu | " | " | #91 | 10 ^m | |
| 123 | COMP | | | ↑ | | |
| 124 | 1998bu | " | " | #91 | 10 ^m | |
| 125 | COMP | | | ↑ | | |
| 126 | 1989B | 11 20 13.9 | 13 00 19 | #91 | 10 ^m | PA = 90 |
| 127 | COMP | | | ↑ | | |
| 128 | 1989B | " | " | #91 | 10 ^m | |
| 129 | COMP | | | ↑ | | |
| 130 | 1989B | " | " | #91 | 5 ^m | sky brightening |
| 131 | COMP | | | ↑ | | |
| 132 | Feige 34 | 10 39 39 | 43 05 23 | #56 | 3 ^m | PA = 90 (not parallaxic) |
| 133 | COMP | | | ↑ | | |
| 134-143 | FLAT | | | #0 | 12 ^s | bibby 2 |

| 60 inch Telescope Log | | Spectrograph: <u>FAST</u> | | Page: <u>8065</u> | | |
|----------------------------|---------------|---------------------------|-----------|---------------------------|-------|----------------|
| Observer: <u>Garnavich</u> | | Grating: <u>300 e/m</u> | | Date: <u>Dec 12, 1999</u> | | |
| PI: <u>Garnavich</u> | | | | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 1-3 | Dark | | | | 1200s | bin by 2 |
| 4-13 | Bias | | | | 0 | |
| 14-22 | Flat | | | | 12 | |
| 23-29 | Sky | | | | 2-15 | |
| 30 | Comp | | | ↑ | 12 | |
| 31-36 | Nov. Apl 1999 | 19:23:05 | +4:57:20 | | 10-2s | bright! PA=90° |
| 37 | Comp | | | ↑ | 12 | |
| 38-39 | Feige 110 | | | | 60 | PA=0° |
| 40 | Comp | | | ↑ | 12 | |
| 41,42 | M31 | | | | 60 | |
| 43 | Comp | | | ↑ | 12 | |
| 44 | SN97cw | 00:25:17 | 12:53:06 | | 1200 | Scan PA=0 30° |
| 45 | Comp | | | ↑ | 12 | |
| 46 | SN97cw | | | | 1200 | Scan PA=0 |
| 47 | Comp | | | ↑ | 12 | |
| 48 | SN97cw | | | | 1200 | Scan PA=0 |
| 49 | Comp | | | ↑ | 12 | |
| 50 | SN99eb | 01:43:45 | 04:13:30 | | 900 | PA=25° |
| 51 | Comp | | | ↑ | 12 | |
| 52 | SN98dm | 01:26:14 | -06:06:14 | | 1200 | Scan PA=20 15" |
| 53 | Comp | | | ↑ | 12 | |
| 54 | SN98dm | | | | 1200 | Scan PA=20 |
| 55 | Comp | | | ↑ | 12 | |
| 56 | SN98dm | | | | 1200 | Scan PA=20 |
| 57 | Comp | | | ↑ | 12 | |
| 58,59 | SN99deg | 02:33:59 | +20:58:30 | | 1200 | 8 |
| 60 | Comp | | | ↑ | 12 | |
| 61 | SN92bp | 03:36:38 | -18:21:5 | | 1200 | Scan PA=40 10" |
| 62 | Comp | | | ↑ | 12 | |
| 63 | SN92bp | | | | 1200 | Scan |

60 inch Telescope Log

Spectrograph: FAST

Observer: Garnavich

Grating: 300

Page: 8066

PI: Garnavich

Date: Dec 12 1999

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|--------|----------|------------|-----------|-----|------|-----------------|
| 64 | Comp | | | ↑ | 12 | |
| 65 | SN92bp | | | | 1200 | Scan PA=40 10" |
| 66 | Comp | | | ↑ | 12 | |
| 67 | HZ14 | | | | 300 | PA=20° |
| 68 | Comp | | | ↑ | 12 | |
| 69 | New HT | 5:51:22.88 | +2:47:46 | | 900 | PA=12 |
| 70 | Comp | | | ↑ | 12 | |
| 71-72 | New HT | | | | 900 | |
| 73 | Comp | | | ↑ | 12 | |
| 74-75 | SN99jb | 08:10:13.7 | 33:57:30 | | 900 | PA=-60° |
| 76 | Comp | | | ↑ | 12 | |
| 77 | SN97E | 06:47:38 | +74:29:51 | | 900 | Scan PA=-30 15" |
| 78 | Comp | | | ↑ | 12 | |
| 79 | SN97E | | | | 900 | Scan |
| 80 | Comp | | | ↑ | 12 | |
| 81 | SN97E | | | | 900 | Scan |
| 82 | Comp | | | ↑ | 12 | |
| 83 | SN95E | 7:51:57 | +73:00:38 | | 1200 | Scan PA=-20° 1" |
| 84 | Comp | | | ↑ | 12 | |
| 85 | SN95E | | | | 1200 | Scan PA=-20° |
| 86 | Comp | | | ↑ | 12 | |
| 87 | SN95E | | | | 1200 | Scan |
| 88 | Comp | | | ↑ | 12 | |
| 89 | SN99gh | 9:44:20.2 | +21:16:13 | | 600 | PA=10 |
| 90 | Comp | | | ↑ | 12 | |
| 91 | SN99gi | 10:11:20 | 44:27:25 | | 600 | PA=10 |
| 92 | Comp | | | ↑ | 12 | |
| 93 | SN99ew | 11:26:21 | 46:58:04 | | 900 | PA=50 |
| 94 | Comp | | | ↑ | 12 | |
| 95 | Feige 34 | | | | 90 | PA=-50 |

60 inch Telescope log

Observer: P. Berland

PI: Andi

Spectrograph: FAST

Grating: 300R

Date: 12/13/99

Page: 8068

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|-------------|-------|--------|-----|------|-----------------|
| 1-10 | BDS | | | | 0s | CIRrus all over |
| 11-20 | FLAT | | | | 7s | |
| 21-30 | BDS | | | | 0s | |
| 31-40 | FLAT | | | | Ms | |
| 41,42 | Fc 4110 | 23:17 | -05:26 | S6 | 2.5m | clouds. |
| 43 | WMP | | | ↑ | | |
| 44 | N7469 | 23:03 | +08:32 | G | 3m | |
| 45 | WMP | | | ↑ | | |
| 46 | SR 0505.054 | 00:38 | +25:43 | S9 | 4m | |
| 47 | WMP | | | ↑ | | |
| 48 | 054 | 00:38 | +26:57 | S9 | 12m | |
| 49 | WMP | | | ↑ | | |
| 50 | 052 | 00:38 | +24:16 | S9 | 5m | |
| 51 | WMP | | | ↑ | | |
| 52 | 057 | 00:38 | +26:52 | S9 | 3m | |
| 53 | WMP | | | ↑ | | |
| 54 | 059 | 00:39 | +25:23 | S9 | 5m | |
| 55 | WMP | | | ↑ | | |
| 56 | 060 | 00:39 | +25:27 | S9 | 5m | |
| 57 | WMP | | | ↑ | | |
| 58 | 062 | 00:39 | +25:15 | S9 | 5m | |
| 59 | WMP | | | ↑ | | |
| 60 | 063 | 00:39 | +25:38 | B | 2m | |
| 61 | WMP | | | ↑ | | |
| 62 | 065 | 00:39 | +24:15 | B | 5m | |
| 63 | WMP | | | ↑ | | |
| 64 | 64 | 00:39 | +25:32 | B | 15m | |
| 65 | COMP | | | ↑ | | |
| 66 | 074 | 00:40 | +24:24 | B | 20m | |
| 67 | WMP | | | ↑ | | |

10/7 Berland

jetbo market

60 inch Telescope Log

Observer: PS
 PI: Andi

Spectrograph: FAST
 Grating: 300L
 Date: 12/13/99

Page: 8069

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|-------------|-------|--------|-----|-----|-----------|
| 68 | smg 075.068 | 00:40 | +27:48 | S9 | 5m | clearing! |
| 69 | WMP | | | ↑ | | |
| 70 | 069 | 00:40 | +27:35 | S9 | 5m | |
| 71 | WMP | | | ↑ | | |
| 72 | 075 | 00:40 | +25:31 | S9 | 12m | |
| 73 | WMP | | | ↑ | | |
| 74 | 076 | 00:40 | +27:12 | S9 | 7m | |
| 75 | WMP | | | ↑ | | |
| 76 | 077 | 00:40 | +27:14 | S9 | 5m | |
| 77 | WMP | | | ↑ | | |
| 78 | 078 | 00:41 | +25:35 | S9 | 5m | |
| 79 | WMP | | | ↑ | | |
| 80 | 079 | 00:41 | +25:40 | S9 | 15m | |
| 81 | WMP | | | ↑ | | |
| 82 | 080 | 00:41 | +25:40 | S9 | 6m | |
| 83 | WMP | | | ↑ | | |
| 84 | 085 | 00:42 | +25:33 | S9 | 7m | |
| 85 | WMP | | | ↑ | | |
| 86 | 086 | 00:42 | +25:33 | S9 | 4m | |
| 87 | WMP | | | ↑ | | |
| 88 | 095 | 00:42 | +27:15 | S9 | 4m | |
| 89 | WMP | | | ↑ | | |
| 90 | α496-002 | 04:16 | +2:12 | G9 | 2m | |
| 91 | WMP | | | ↑ | | |
| 92 | 003 | 04:20 | +15:50 | G9 | 2m | |
| 93 | WMP | | | ↑ | | |
| 94 | 024 | 04:23 | -15:50 | G9 | 2m | |
| 95 | WMP | | | ↑ | | |
| 96 | 006 | 04:24 | -09:23 | G9 | 7m | |
| 97 | WMP | | | ↑ | | |

60 inch Telescope Log

Observer: PberlandPI: Rimesh GellerSpectrograph: FASTGrating: 300LPage: 8070Date: 12/13/99

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|-----------|-------|--------|-----|-----|---------------------|
| 98 | α 496-007 | 04:31 | -11:17 | 69 | 2m | |
| 99 | WMP | | | f | | |
| 100 | 005 | 04:51 | -14:33 | 69 | 2m | |
| 101 | WMP | | | f | | |
| 102 | 001 | 04:45 | -17:16 | 69 | 2m | |
| 103 | WMP | | | f | | |
| 104 | 010 | 04:46 | -16:28 | 69 | 5m | |
| 105 | WMP | | | f | | |
| 106 | 012 | 04:47 | -15:31 | 67 | 3m | |
| 107 | WMP | | | f | | |
| 108 | 009 | 04:23 | -15:44 | 69 | 8m | |
| 109 | WMP | | | f | | |
| 110 | 011 | 04:31 | -11:42 | 69 | 8m | |
| 111 | WMP | | | f | | |
| 112 | 013 | 04:27 | -10:49 | 69 | 3m | |
| 113 | WMP | | | f | | |
| 114 | 016 | 04:25 | -09:54 | 69 | 3m | |
| 115 | WMP | | | f | | |
| 116 | 015 | 04:47 | -10:14 | 69 | 3m | |
| 117 | WMP | | | f | | |
| 118 | 017 | 04:35 | -14:13 | 69 | 2m | (Star) w/ 6-22 10.5 |
| 119 | WMP | | | f | | |
| 120 | 018 | 04:21 | -09:49 | 69 | 7m | |
| 121 | WMP | | | f | | |
| 122 | 019 | 04:23 | -11:47 | 69 | 2m | |
| 123 | WMP | | | f | | |
| 124 | 020 | 04:46 | -13:45 | 69 | 5m | |
| 125 | WMP | | | f | | |
| 126 | 021 | 04:27 | -09:24 | 69 | 10m | |
| 127 | WMP | | | f | | |

60 inch Telescope Log

Observer: PB
 PI: R. Meszeller

Spectrograph: FAST
 Grating: 300R
 Date: 12/13/99

Page: 8071

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|----------|-------|--------|-----|-----|----------|
| 128 | 9496-022 | 04:57 | -12:26 | 64 | 7m | |
| 129 | WMP | | | f | | |
| 130 | 023 | 04:20 | -09:45 | 64 | 5m | |
| 131 | WMP | | | f | | |
| 132 | 024 | 04:21 | -15:45 | 64 | 4m | |
| 133 | WMP | | | f | | |
| 134 | 027 | 04:21 | -09:47 | 64 | 2m | |
| 135 | WMP | | | f | | |
| 136 | 025 | 04:24 | -09:18 | 64 | 3m | |
| 137 | WMP | | | f | | |
| 138 | 026 | 04:24 | -08:26 | 64 | 7m | |
| 139 | WMP | | | f | | |
| 140 | 028 | 04:46 | -17:03 | 64 | 3m | |
| 141 | WMP | | | f | | |
| 142 | 029 | 04:45 | -10:45 | 64 | 8m | |
| 143 | WMP | | | f | | |
| 144 | 030 | 04:40 | -13:12 | 64 | 7m | |
| 145 | WMP | | | f | | |
| 146 | 031 | 04:33 | -10:48 | 64 | 8m | |
| 147 | WMP | | | f | | |
| 148 | 032 | 04:17 | -13:55 | 64 | 8m | |
| 149 | WMP | | | f | | |
| 150 | 014 | 04:51 | -14:37 | 64 | 15m | em dk |
| 151 | WMP | | | f | | |
| 152 | 028 | 04:42 | -08:05 | 64 | 15m | em |
| 153 | WMP | | | f | | |
| 154 | 033 | 04:42 | -18:21 | 64 | 6m | |
| 155 | WMP | | | f | | |
| 156 | 034 | 04:44 | -09:03 | 64 | 6m | |
| 157 | WMP | | | f | | |

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | Page: <u>9072</u> | |
|------------------------------|---------------|-------|---------------------------|-----|-------------------|--------------------------------|
| Observer: <u>PB</u> | | | Grating: <u>300L</u> | | | |
| PI: <u>Scott & Rinas</u> | | | Date: <u>12/13/99</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 158-160 | S32 | 04:57 | -01:19 | Z | 30s, 90, 10m | |
| 161 | COMP | | | f | | |
| 162-163 | Hiltner 60 | 06:42 | -02:20 | 56 | 45s | |
| 164 | COMP | | | f | | |
| 165-166 | IX Mon | 07:25 | +03:35 | Z | 100, 5m | |
| 167 | COMP | | | f | | |
| 168 | g5766-086-090 | 07:21 | +57:06 | 69 | 12m | PA=50 2 gals bin by 2 |
| 169 | COMP | | | f | | |
| 170 | 95 | 07:28 | +57:03 | 69 | 10m | gal 90 near 92 gal 86 @ row 83 |
| 171 | COMP | | | f | | 1cm slightly blurred |
| 172 | 97 | 07:27 | +55:27 | 69 | 10m | |
| 173 | COMP | | | f | | |
| 174 | 98 | 07:25 | +54:21 | 69 | 12m | |
| 175 | COMP | | | f | | some clouds |
| 176 | 101 | 07:11 | +56:39 | 69 | 10m | |
| 177 | COMP | | | f | | |
| 178 | 106 | 07:29 | +56:14 | 69 | 15m | windy! |
| 179 | COMP | | | f | | |
| 180 | 109 | 07:17 | +56:17 | 69 | 15m | |
| 181 | COMP | | | f | | |
| 182 | 110 | 07:17 | +54:50 | 69 | 10m | |
| 183 | COMP | | | f | | |
| 184 | 111 | 07:29 | +56:42 | 69 | 12m | |
| 185 | COMP | | | f | | |
| 186 | 113 | 07:13 | +56:23 | 69 | 12m | |
| 187 | COMP | | | f | | |
| 188 | 114 | 07:29 | +51:04 | 69 | 12m | |
| 189 | COMP | | | f | | |
| 190 | 118 | 07:20 | +57:00 | 69 | 15m | |
| 191 | COMP | | | f | | |

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | Page: <u>8073</u> | |
|-----------------------|---------------|-------|---------------------------|-----|-----------------------|------------------------|
| Observer: <u>PB</u> | | | Grating: <u>3002</u> | | Date: <u>12/13/99</u> | |
| PI: <u>-</u> | | | | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 192 | 091230 p52050 | 09:16 | +52:50 | 84 | 12m | yuck |
| 193 | CMP | | | † | | |
| 194 | | | | | | |
| 196 | 175 | 11:18 | -07:39 | 59 | 15m | sup & em dr |
| 197 | CMP | | | † | | |
| 198-9 | Ferret 39 | 10:39 | +47:21 | 56 | 3m | |
| 200 | CMP | | | † | | |
| 201-2 | GLUMA | 11:41 | +54:12 | 57 | 1s | |
| 203 | CMP | | | † | | |
| 204-6 | HD-77974 | 08:41 | +44:53 | 87 | 2s | seems wack & clouds |
| 207 | CMP | | | † | | |
| 208-20 | B5-2703 | 07:13 | +51:26 | 87 | 10s-20s | windy! |
| 211 | CMP | | | † | | |
| 212 | 09280 p0620 | 09:30 | +06:07 | 89 | 5m | |
| 213 | CMP | | | † | | |
| 214 | 09297 p1059 | 09:32 | +10:45 | 84 | 10m | close - clouds. |
| 215 | CMP | | | † | | |
| 216-225 | B3AK | | | | 0 | dawn |
| 216-235 | FLAT | | | | 2s | |
| 216-245 | B3AK | | | | 0 | |
| 216-255 | FLAT | | | | 14s | |

192 Western most obj is a star
 middle obj extracted cz = -70 km/sec

60 inch Telescope Log

Observer: PBerlindPI: MegeathSpectrograph: FASTGrating: 300RDate: 12/14/99Page: 8074

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|------------|--------|------|-----|-----|-------------------------|
| 1-10 | BIAS | | | | 0s | |
| 11-20 | FLAT | | | | 7s | |
| 21-30 | BIAS | | | | 0s | lots of thick cirrus |
| 31-40 | FLAT | | | | 14s | |
| 41-45 | SKY | Zenith | | S6 | 2s | ARC sunset. |
| 46 | COMP | | | ↑ | 5s | |
| 47-49 | XZ | | | 87 | 2s | |
| 50 | COMP | | | ↑ | | |
| 51-53 | Calasec | | | 87 | 2s | |
| 54 | COMP | | | ↑ | | |
| 55-57 | HD217056 | | | 87 | 2s | |
| 58 | COMP | | | ↑ | | |
| 59-61 | BS-8989 | | | 87 | 2s | |
| 62 | COMP | | | ↑ | | |
| 63-65 | BS-152 | | | 87 | 2s | |
| 66 | COMP | | | ↑ | | |
| 67-69 | Calasec-28 | | | 87 | 2s | |
| 70 | COMP | | | ↑ | | |
| 71-73 | BS341 | | | 87 | 2s | |
| 74 | COMP | | | ↑ | | |
| 75-77 | 107P5C | | | 87 | 2s | |
| 78 | COMP | | | ↑ | | |
| 79-80 | M31 | 00:40 | +40 | 57 | 30s | |
| 81 | COMP | | | ↑ | | |
| 82-83 | M32 | 00:39 | +40 | 57 | 1m | |
| 84 | COMP | | | ↑ | | |
| 85-87 | HD12623 | | | 57 | 2s | |
| 88 | COMP | | | ↑ | | |
| 89-91 | HD13686 | | | 87 | 2s | |
| 92 | COMP | | | ↑ | | |

60 inch Telescope Log

Observer: PBPI: Scott/AmSpectrograph: FASTGrating: 3000Date: 12/14/99Page: 9075

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|--------|-------------|-------|--------|-----|-----|-----------------------------|
| 93 | 022155p5705 | 02:21 | +57:05 | 83 | 10m | |
| 94 | COMP | | | ↑ | | |
| 95 | 022256p5712 | 02:22 | +57:12 | 83 | 15m | stop + go through clouds |
| 96 | COMP | | | ↑ | | |
| 97 | 022709p5710 | 02:23 | +57:10 | 83 | 12m | |
| 98 | COMP | | | ↑ | | |
| 99 | 022253p5712 | 02:22 | +57:12 | 83 | 15m | |
| 100 | COMP | | | ↑ | | |
| 101 | 022705p5706 | 02:23 | +57:06 | 83 | 15m | |
| 102 | COMP | | | ↑ | | |
| 103 | 022305p5710 | 02:23 | +57:10 | 83 | 10m | |
| 104 | COMP | | | ↑ | | |
| 105 | 022306p5708 | 02:23 | +57:08 | 83 | 5m | |
| 106 | COMP | | | ↑ | | |
| 107 | 022207p5704 | 02:23 | +57:04 | 83 | 7m | |
| 108 | COMP | | | ↑ | | |
| 109 | 022307p5710 | 02:23 | +57:10 | 83 | 15m | |
| 110 | COMP | | | ↑ | | |
| 111 | 022308p5706 | 02:23 | +57:06 | 83 | 15m | |
| 112 | COMP | | | ↑ | | |
| 113 | 022309p5704 | 02:23 | +57:04 | 83 | 15m | |
| 114 | COMP | | | ↑ | | |
| 115 | 022311p5708 | 02:23 | +57:08 | 83 | 20m | |
| 116 | COMP | | | ↑ | | |
| 117 | 022136p5715 | 02:21 | +57:15 | 83 | 20m | redo from 12/5/99 |
| 118 | COMP | | | ↑ | | |
| 119 | 022148p5713 | 02:21 | +57:13 | 83 | 20m | ☉ bmbg2 |
| 120 | COMP | | | ↑ | | |
| 121 | 022155p5713 | 02:21 | +57:13 | 83 | 15m | |
| 122 | COMP | | | ↑ | | |

60 inch Telescope Log

Observer: PBPI: AnnSpectrograph: FASTGrating: 3002Date: 12/14/99Page: 8076

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|---------|-------------|-------|--------|-----|-----|------------------------|
| 123 | 022157p570 | 02:21 | +57:0 | 83 | 12m | clouds. |
| 124 | WMP | | | ↑ | | |
| 125 | 022200p5703 | 02:22 | +57:03 | 83 | 12m | |
| 126 | WMP | | | ↑ | | |
| 127 | 022200p5710 | 02:22 | +57:10 | 83 | 8m | |
| 128 | WMP | | | ↑ | | |
| 129 | 022201p5710 | 02:22 | +57:10 | 83 | 6m | |
| 130 | WMP | | | ↑ | | |
| 131 | 022203p5705 | 02:22 | +57:05 | 83 | 7m | |
| 132 | WMP | | | ↑ | | |
| 133 | 022158p5702 | 02:21 | +57:06 | 83 | 12m | bin by 2; bit's nearby |
| 134 | WMP | | | ↑ | | |
| 135 | 022158p5706 | 02:21 | +57:06 | 83 | 5m | |
| 136 | WMP | | | ↑ | | |
| 137 | 022155p5715 | 02:21 | +57:15 | 83 | 8m | |
| 138 | WMP | | | ↑ | | |
| 139-140 | Caltech 23 | | | | | 2" slit ↓ |
| 141 | WMP | | | | | |
| 142-144 | HD 28487 | | | | | |
| 145 | WMP | | | | | |
| 146-MK | HD 227271 | 04:20 | +50:16 | 87 | | |
| 149 | WMP | | | ↑ | | |
| 150-1 | tau Cen | 07:11 | +30:15 | 87 | | |
| 152 | WMP | | | ↑ | | |
| 153-55 | chi Cen | 04:03 | +21:48 | 87 | | |
| 156 | WMP | | | ↑ | | |
| 157-5 | 41 Cen | 05:07 | +10:16 | 87 | | |
| 160 | WMP | | | ↑ | | |

60 inch Telescope Log

Observer: PBPI: McCarthy CalvertSpectrograph: FASTGrating: 300LDate: 12/17/99Page: 8077

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|---------|----------------|-------|--------|-----|---------|--------------------|
| 161-163 | 96-180 | 04:51 | -10:05 | 87 | 60s-30s | 2" Slit ↓ |
| 164 | COMP | | | ↑ | | |
| 165-167 | 98-193 | 0652 | -10:27 | 87 | 2m | clearing area |
| 168 | COMP | | | ↑ | | |
| 169-171 | 99-185 | 07:57 | -10:45 | 87 | 60s | |
| 172 | COMP | | | ↑ | | |
| 173 | Hiltner 600 | 06:42 | +02:42 | 56 | 60s | |
| 174 | COMP | | | ↑ | | |
| 175 | Hiltner 600 | 06:42 | +02:42 | 56 | 60s | 3" Slit ↓ |
| 176 | COMP | | | ↑ | | |
| 177 | 955016 S6418EW | 05:33 | -01:14 | 112 | 15m | bin by 2 ETW comps |
| 178 | COMP | | | ↑ | | |
| 179 | 1639203 | 05:33 | -01:46 | 112 | 8m | |
| 180 | COMP | | | ↑ | | |
| 181 | 1649518 | 05:35 | -10:27 | 112 | 12m | |
| 182 | COMP | | | ↑ | | |
| 183 | 1649584 | 05:35 | -10:28 | 112 | 12m | |
| 184 | COMP | | | ↑ | | |
| 185 | 1660227 | 05:37 | -01:08 | 112 | 12m | |
| 186 | COMP | | | ↑ | | |
| 187 | 1661016 | 05:38 | -01:13 | 112 | 5m | |
| 188 | COMP | | | ↑ | | |
| 189 | 1661173 | 05:38 | -01:16 | 112 | 12m | |
| 190 | COMP | | | ↑ | | |
| 191 | 1661927 | 05:39 | -01:20 | 112 | 15m | |
| 192 | COMP | | | ↑ | | |
| 193 | 95766-104 | 07:29 | +55:22 | 64 | 15m | |
| 194 | COMP | | | ↑ | | |

60 inch Telescope Log

Observer: PBPI: Ken & Tom McGrathSpectrograph: FASTGrating: 3002Date: 12/14/99Page: 8078

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|---------|-----------|-------|--------|-----|----------|---------------|
| 195 | a5766-105 | 07:30 | +56:45 | 64 | 12m | good sky! |
| 196 | COMP | | | ↑ | | |
| 197 | SN1999gd | 08:38 | +25:45 | 2 | 20m | PA=90 |
| 198 | COMP | | | ↑ | | |
| 199 | a5766-116 | 07:19 | +56:48 | 64 | 11m | |
| 200 | COMP | | | ↑ | | |
| 201 | 119 | 07:23 | +56:33 | 64 | 11m | |
| 202 | COMP | | | ↑ | | |
| 203 | 120 | 07:25 | +54:22 | 64 | 12m | |
| 204 | COMP | | | ↑ | | |
| 205 | 121 | 07:25 | +54:26 | 64 | 10m | |
| 206 | COMP | | | ↑ | | |
| 207 | 122 | 07:21 | +54:40 | 64 | 12m | comp gal to W |
| 208 | COMP | | | ↑ | | |
| 209-210 | 100-162 | 08:53 | -00:43 | 87 | 30s, 15s | 2" slit ↓ |
| 211 | COMP | | | ↑ | | |
| 212-213 | 100-394 | 08:53 | -00:32 | 87 | 60s, 2m | |
| 214 | COMP | | | ↑ | | |
| 215-6 | 101-315 | 09:51 | -00:27 | 87 | 2m | |
| 217 | COMP | | | ↑ | | |
| 218-219 | 101-324 | 09:55 | -00:23 | 87 | 30s | |
| 220 | COMP | | | ↑ | | |
| 221-223 | 101-333 | 09:56 | -00:27 | 87 | 10s, 5s | |
| 224 | COMP | | | ↑ | | |
| 225-226 | 102-466 | 10:41 | -00:55 | 87 | 30s, 1m | |
| 227 | COMP | | | ↑ | | |
| 228-230 | 102-620 | 10:55 | -00:48 | 87 | 1m | |
| 231 | COMP | | | ↑ | | |

60 inch Telescope Log

Observer: PBPI: Tom M.Spectrograph: FASTGrating: 300LDate: 12/17/99Page: 8079

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|---------|----------|-------|--------|-----|---------|-----------------------|
| 232-233 | 103-526 | 11:56 | -0:30 | 87 | 1m/2m | 2" slit ↓ |
| 234 | COMP | | | ↑ | | |
| 235-237 | HD-73974 | 08:41 | +19:53 | 87 | 13s | |
| 238 | COMP | | | ↑ | | |
| 239 | Ferje 34 | 10:39 | +43 | 86 | 2m | |
| 240 | COMP | | | ↑ | | |
| 241-2 | 61-Uma | 11:41 | +9:12 | 87 | 1s | |
| 243 | COMP | | | ↑ | | |
| 244-6 | 104-206 | 12:41 | -0:37 | 87 | 10, 20s | |
| 247 | COMP | | | ↑ | | |
| 248 | 104-428 | 12:41 | -0:26 | 87 | 4m | |
| 249 | COMP | | | ↑ | | |
| 250 | 104-237 | 12:42 | -0:51 | 87 | 8m | |
| 251 | COMP | | | ↑ | | |
| 252 | 104-443 | 12:42 | -0:25 | 87 | 8m | |
| 253 | COMP | | | ↑ | | |
| 254 | 104-479 | 12:43 | -0:32 | 87 | 12m | PA-85 yes! New |
| 255 | COMP | | | ↑ | | supernova discovery!! |
| 256 | 104-239 | 12:42 | -0:46 | 87 | 5m | off to W |
| 257 | COMP | | | ↑ | | |
| 258 | 104-460 | 12:43 | +0:28 | 87 | 5m | |
| 259 | COMP | | | ↑ | | |
| 260 | 104-489 | 12:44 | -0:30 | 87 | 5m | |
| 261 | COMP | | | ↑ | | |
| 267-3 | 104-598 | 12 | -0 | 87 | 3m | |
| 264 | COMP | | | ↑ | | |
| 265 | H244 | 13:01 | +36:23 | 86 | 3m | |
| 266 | COMP | | | ↑ | | |
| 267-26 | FLAT | | | | 10s | |
| 277-286 | FLAT | | | | 7s | 3" slit ↓ |
| 287-296 | BIAS | | | | 0s | |
| 297-306 | FLAT | | | | 14s | |
| 307-316 | BIAS | | | | | |
| 317-326 | DARK | | | | 15m | |

to: Tokarz
 Flat Susan
 PY 1 of 6

60 inch Telescope log
 Observer: P. Berline
 PI: Andi
 Spectrograph: FAST
 Grating: 300.0
 Date: 12/15/99
 Page: 8080

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|----------------|-------|--------|-----|-----|--------------|
| 1-10 | BIAS | | | | 0s | |
| 11-20 | FLAT | | | | 7s | |
| 21-30 | BIAS | | | | 0s | |
| 31-40 | FLAT | | | | 14s | |
| 41-45 | SKY | | | 56 | 2s | |
| 46 | COMP | | | ↑ | | of 111 stars |
| 47-48 | M31 | 00:40 | +40:59 | 55 | 9s | |
| 49 | WAP | | | ↑ | | |
| 50-51 | M22 | 00:39 | +40 | 57 | 45s | |
| 52 | WAP | | | ↑ | | |
| 53 | 225m280 | 00:49 | +41:21 | 57 | 4m | |
| 54 | WAP | | | ↑ | | |
| 55-57 | HD217086 | 22:54 | +66:27 | 56 | 5s | |
| 58 | WAP | | | ↑ | | |
| 59 | Scratch 075013 | 00:37 | +16:19 | 59 | 5m | wh |
| 60 | COMP | | | ↑ | | |
| 61 | 041 | 00:37 | +15:56 | 59 | 5m | |
| 62 | WAP | | | ↑ | | |
| 63 | 045 | 00:37 | +15:08 | 59 | 10m | |
| 64 | WAP | | | ↑ | | |
| 65 | 098 | 00:43 | +24:48 | 59 | 10m | |
| 66 | WAP | | | ↑ | | |
| 67 | 104 | 00:44 | +16:12 | 59 | 5m | |
| 68 | WAP | | | ↑ | | |
| 69 | 105 | 00:44 | +24:14 | 59 | 10m | |
| 70 | WAP | | | ↑ | | |
| 71 | 107 | 00:44 | +16:30 | 59 | 4m | |
| 72 | WAP | | | ↑ | | |
| 73 | 109 | 00:44 | +24:44 | 59 | 10m | |
| 74 | COMP | | | ↑ | | |

| 60 inch Telescope Log | | | Spectrograph: <u>FAST</u> | | Page: <u>8061</u> | |
|-----------------------|---------------|-------|---------------------------|-----|-------------------|--------------------------------------|
| Observer: <u>PB</u> | | | Grating: <u>300R</u> | | | |
| PI: <u>Andi</u> | | | Date: <u>12/15/99</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 75 | src 6075.122 | 0045 | +2515 | 59 | 5m | |
| 76 | COMP | | | ↑ | | |
| 77 | SNage317 | 0057 | +4347 | 2 | 15m | PA=0 |
| 78 | COMP | | | ↑ | | |
| 79 | src 6075.115 | 00:45 | +2546 | 59 | 8m | |
| 80 | COMP | | | ↑ | | |
| 81 | 117.118 | 00:45 | +2416 | 59 | 12m | PA=22; bin by 2. 2 gals |
| 82 | COMP | | | ↑ | | |
| | | | | | | 1180 row 74 → 1170 row 77 |
| 83 | 123.124 | 00:45 | +2512 | 59 | 6m | PA=65; 2 gals |
| 84 | COMP | | | ↑ | | |
| | | | | | | 1240 row 83 → 1230 row 80 |
| 85 | 127 | 00:46 | +2508 | 59 | 7m | |
| 86 | COMP | | | ↑ | | |
| 87 | 129 | 00:46 | +2409 | 59 | 5m | |
| 88 | COMP | | | ↑ | | |
| 89 | 130 | 00:46 | +2458 | 59 | 5m | |
| 90 | COMP | | | ↑ | | |
| 91 | 131 | 00:46 | +2602 | 59 | 6m | |
| 92 | COMP | | | ↑ | | |
| 93 | 132 | 00:46 | +2555 | 59 | 6m | |
| 94 | COMP | | | ↑ | | |
| 95 | 133 | 00:46 | +2508 | 59 | 6m | |
| 96 | COMP | | | ↑ | | |
| 97 | 135 | 00:46 | +2537 | 59 | 4m | |
| 98 | COMP | | | ↑ | | |
| 99 | SN1999dg | 0220 | +20 | 2 | 20m | PA=11 |
| 100 | COMP | | | ↑ | | |
| 101 | 022219 pos 2L | 02:22 | +57:02 | 83 | 5m | PA=40 |
| 102 | COMP | | | ↑ | | |

| 60 inch Telescope Log | | | | Spectrograph: <u>FAST</u> | | Page: <u>082</u> | |
|-----------------------|-------------|-------|--------|---------------------------|-----|--------------------|--|
| Observer: <u>AB</u> | | | | Grating: <u>WAL</u> | | | |
| PI: <u>Ann</u> | | | | Date: <u>12/15/99</u> | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments | |
| 103 | 022220p5705 | 02:22 | +57:05 | 83 | 9m | | |
| 104 | COMP | | | ↑ | | Secondary wave | |
| 105 | 022222p5705 | 02:22 | +57:05 | 83 | 10m | | |
| 106 | COMP | | | ↑ | | | |
| 107 | 022222p5710 | 02:22 | +57:10 | 83 | 7m | close comp to NE ♂ | |
| 108 | COMP | | | ↑ | | | |
| 109 | 022227p5711 | 02:22 | +57:11 | 83 | 5m | | |
| 110 | COMP | | | ↑ | | | |
| 111 | 022227p5711 | 02:22 | +57:11 | 83 | 5m | | |
| 112 | COMP | | | ↑ | | | |
| 113 | 022229p5708 | 02:22 | +57:08 | 83 | 5m | | |
| 114 | COMP | | | ↑ | | | |
| 115 | 022233p5711 | 02:22 | +57:11 | 83 | 5m | | |
| 116 | COMP | | | ↑ | | | |
| 117 | 022233p5715 | 02:22 | +57:15 | 83 | 15m | | |
| 118 | COMP | | | ↑ | | | |
| 119 | 022235p5712 | 02:22 | +57:12 | 83 | 15m | | |
| 120 | COMP | | | ↑ | | | |
| 121 | 022237p5703 | 02:22 | +57:03 | 83 | 12m | | |
| 122 | COMP | | | ↑ | | | |
| 123 | 022238p5703 | 02:22 | +57:03 | 83 | 10m | | |
| 124 | COMP | | | ↑ | | | |
| 125 | 022238p5711 | 02:22 | +57:11 | 83 | 5m | | |
| 126 | COMP | | | ↑ | | | |
| 127 | SN1999em | 04:41 | -02:51 | 2 | 10m | bin by 4 PA=10 | |
| 128 | COMP | | | ↑ | | | |
| 129 | 022240p5706 | 02:22 | +57:06 | 83 | 7m | | |
| 130 | COMP | | | ↑ | | | |
| 131 | 022242p5704 | 02:22 | +57:04 | 83 | 12m | | |
| 132 | COMP | | | ↑ | | | |

| 60 inch Telescope Log | | | | Spectrograph: <u>FAST</u> | | Page: <u>8083</u> |
|--------------------------|--------------|-------|--------|---------------------------|-----|------------------------------|
| Observer: <u>PB</u> | | | | Grating: <u>300L</u> | | |
| PI: <u>Ann/Nuria/Ken</u> | | | | Date: <u>12/15/99</u> | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 133 | 022245p5701 | 02:22 | +5701 | 83 | 8m | |
| 134 | WMP | | | ↑ | | |
| 135 | 022245p5712 | 02:22 | +5712 | 83 | 12m | |
| 136 | WMP | | | ↑ | | |
| 137 | 022245p5708 | 02:22 | +5708 | 83 | 4m | |
| 138 | WMP | | | ↑ | | |
| 139 | 022245p5705 | 02:23 | +5705 | 83 | 10m | |
| 140 | WMP | | | ↑ | | |
| 141 | qusonb 45177 | 05:41 | -0143 | 112 | 10m | PA-OL |
| 142 | WMP | | | ↑ | | |
| 143 | Ab. 45110 | 05:41 | -0701 | 112 | 20m | extended H α emission |
| 144 | WMP | | | ↑ | | all air cond. |
| 145 | Hiltnerbed | 06:12 | +172 | 56 | 45s | |
| 147 | WMP | | | ↑ | | |
| 148 | qusonb 45135 | 05:51 | -0143 | 112 | 12m | |
| 149 | WMP | | | ↑ | | |
| 150 | 62015 | 05:52 | -0149 | 112 | 12m | |
| 151 | WMP | | | ↑ | | |
| 152 | a5766-123 | 07:12 | +18:10 | 64 | 12m | finishes notebook |
| 153 | WMP | | | ↑ | | |
| 154 | 124 | 07:12 | +18:03 | 64 | 12m | |
| 155 | WMP | | | ↑ | | |
| 156 | 127 | 07:12 | +18:02 | 64 | 8m | |
| 157 | WMP | | | ↑ | | |
| 158 | 125 | 07:11 | +18:02 | 64 | 8m | |
| 159 | WMP | | | ↑ | | |
| 160 | 126 | 07:11 | +18:29 | 64 | 12m | |
| 161 | WMP | | | ↑ | | |
| 162 | 128 | 07:11 | +18:49 | 64 | 12m | finishes notebook |
| 163 | WMP | | | ↑ | | |

| 60 inch Telescope Log | | | | Spectrograph: <u>FAST</u> | | Page: <u>8084</u> |
|-------------------------|-------------|---------------------|--------|---------------------------|-----|--|
| Observer: <u>PB</u> | | Grating: <u>300</u> | | Date: <u>12/15/99</u> | | |
| PI: <u>Falco / And.</u> | | | | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 164 | SN1999gi | 10:18 | +11:26 | Z | 10m | PA=70 |
| 165 | COMP | | | T | | |
| 166 | Faye 31 | 10:31 | +11:5 | 56 | 90s | PA=70 |
| 167 | COMP | | | T | | |
| 168 | D9352p2824 | 06:38 | +24:53 | 84 | 5m | PA=70 |
| 169 | COMP | | | T | | |
| 170 | 09093p3815 | 09:12 | +35:03 | 84 | 4m | → sup star on nucleus. redo from 4/8/99 |
| 171 | 09093p3815 | " | " | 84 | 15m | → all galaxy |
| 172 | COMP | | | T | | |
| 173 | 09363p368 | 09:39 | +16:34 | 84 | 5m | |
| 174 | COMP | | | T | | |
| 175 | 09356p1117 | 09:28 | +17:02 | 84 | 4m | |
| 176 | COMP | | | T | | |
| 177 | 09367p1920 | 09:39 | +19:07 | 84 | 4m | |
| 178 | COMP | | | T | | |
| 179 | 09391p1112 | 09:41 | +11:28 | 84 | 2m | ↓ to E |
| 180 | COMP | | | T | | |
| 181 | 09337p1133 | 09:33 | +11:19 | 84 | 10m | |
| 182 | COMP | | | T | | |
| 183 | SN1999gh | 09:44 | -21:16 | Z | 12m | PA=0 |
| 184 | COMP | | | T | | |
| 185 | 09343p1020 | 09:26 | -02:34 | 84 | 5m | |
| 186 | COMP | | | T | | |
| 187 | 5528169.125 | 11:18 | -07:34 | 59 | 12m | PA=90 |
| 188 | COMP | | | T | | |
| 189 | 177 | 11:18 | -06:04 | 59 | 9m | |
| 190 | COMP | | | T | | |
| 191 | 179 | 11:19 | -06:35 | 59 | 15m | |
| 192 | COMP | | | T | | |

60 inch Telescope Log

Observer: PB

PI: _____

Spectrograph: FAST

Grating: 3002

Date: 12/14/99

Page: 8084(a)

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|---------|-------------|-------|--------|-----|--------|---------------|
| 193 | SS26164.181 | 11:19 | -07:27 | S9 | 12m | |
| 194 | COMP | | | ↑ | | |
| 195 | 208 | 11:22 | -07:03 | S9 | 6m | |
| 196 | COMP | | | ↑ | | |
| 197 | SNmag 4653 | 12:13 | -07:32 | Z | 15m | PA=-30 |
| 198 | COMP | | | ↑ | | |
| 199 | H244 | 13:21 | +X | S6 | 2m | PA=90 |
| 200 | COMP | | | ↑ | | |
| 201 | MRK421 | 11:01 | +39.12 | 6 | 4m | |
| 202 | COMP | | | ↑ | | |
| 203 | N4051 | 12:00 | +1448 | 6 | 2m | |
| 204 | COMP | | | ↑ | | |
| 205-7 | N4151 | 12:08 | +3941 | 6 | 1m. 2x | |
| 208 | COMP | | | ↑ | | clear @ dawn! |
| 219-218 | IBMS | | | | 03 | |
| 219-219 | FLAT | | | | 7s | |
| 219-220 | IBMS | | | | 03 | |
| 219-221 | FLAT | | | | Ms | |
| 249-256 | DARK | | | | 15m | |

★ END OF FAST Run ★

★ Start of FAST Run ★

| 60 inch Telescope Log | | Spectrograph: <u>FAST</u> | | Page: <u>8102</u> | | |
|--------------------------|---------------|------------------------------|--------|-------------------|-----|--|
| Observer: <u>PBerlin</u> | | Grating: <u>3002, 3'Slit</u> | | | | |
| PI: <u>Andi</u> | | Date: <u>12/29/99</u> | | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 1-10 | test | | | | | MSC Files |
| 11-20 | BIAS | | | | 03 | |
| 21-30 | FLAT | | | | 75 | CIRrus all over |
| 31-40 | BIAS | | | | 03 | |
| 41-50 | FLAT | | | | 115 | cool sensitivity down a bit! |
| 51-53 | HD211066 | 22:51 | +62:27 | 56 | 50 | |
| 54 | WMP | | | ↑ | | |
| 55-56 | M31 | 20:40 | +40 | 59 | 30s | |
| 57 | WMP | | | ↑ | | |
| 58-59 | M32 | 20:40 | +40 | 59 | 30s | |
| 60 | WMP | | | ↑ | | |
| 61 | MRK335 | 20:29 | +19 | 6 | 3m | |
| 62 | WMP | | | ↑ | | |
| 63 | NT169 | 23:28 | +08 | 6 | 5m | |
| 64 | WMP | | | ↑ | | |
| 65 | AKN564 | 22:42 | +24:43 | 6 | 5m | |
| 66 | WMP | | | ↑ | | |
| 67 | S146075-137 | 00:46 | +21:45 | 59 | 10m | |
| 68 | WMP | | | ↑ | | |
| 69 | 138 | 00:47 | +24:35 | 59 | 10m | |
| 70 | WMP | | | ↑ | | |
| 71 | 134 | 00:46 | +25:26 | 59 | 15m | |
| 72 | WMP | | | ↑ | | |
| 73 | 125 | 00:46 | +25 | 59 | 20m | cc |
| 74 | WMP | | | ↑ | | |
| 75 | 021801p571219 | 02:17 | +57:02 | 53 | 20m | |
| 76 | WMP | | | ↑ | | |
| 77 | 021801p571219 | 02:18 | +57:12 | 53 | 20m | → 3 stars, we want 2, → star @ row 64 |
| 78 | WMP | | | ↑ | | 021801p571219 to E-row 80 + @ row 93 - don't want |

021801 p571219 @ row 88

60 inch Telescope Log
 Observer: RB
 PI: mbr
 Spectrograph: F1157
 Grating: 302
 Date: 12/27/99
 Page: 8103

| Number | Object | R. A. | Dec. | L/R | Exp | Comments |
|--------|--------------|-------|--------|-----|-----|----------------|
| 79 | 021759 p5708 | 02:17 | +57:06 | 63 | 20m | clearing some. |
| 80 | WMP | | | r | | |
| 81 | 021802 p5707 | 02:18 | +57:07 | 63 | 20m | |
| 82 | WMP | | | r | | |
| 83 | 021803 p5706 | 02:18 | +57:06 | 63 | 20m | |
| 84 | WMP | | | r | | |
| 85 | 022802 p5209 | 02:18 | +57:09 | 63 | 20m | |
| 86 | WMP | | | r | | |
| 87 | 021803 p5706 | 02:18 | +57:06 | 63 | 20m | |
| 88 | WMP | | | r | | |
| 89 | 0446-036 | 04:43 | -04:18 | 64 | 5m | |
| 90 | WMP | | | r | | |
| 91 | 037 | 04:22 | -10:31 | 64 | 20m | |
| 92 | WMP | | | r | | |
| 93 | 038 | 04:27 | -04:45 | 64 | 10m | |
| 94 | WMP | | | r | | |
| 95 | 039 | 04:27 | -13:50 | 64 | 8m | |
| 96 | WMP | | | r | | |
| 97 | 040 | 04:15 | -13:13 | 64 | 4m | |
| 98 | WMP | | | r | | |
| 99 | 041 | 04:52 | -13:32 | 64 | 20m | |
| 100 | WMP | | | r | | move clouds |
| 101 | 05766-129 | 07:12 | +56:24 | 64 | 15m | |
| 102 | WMP | | | r | | |
| 103 | 130 | 07:25 | +56:15 | 64 | 15m | |
| 104 | WMP | | | r | | |
| 105 | 140 | 07:26 | +56:35 | 64 | 20m | |
| 106 | WMP | | | r | | |
| 107 | 07112 p5057 | 07:50 | +50 | 64 | 4m | |
| 108 | WMP | | | r | | |

60 inch Telescope Log
 Observer: PB
 PI: Falco

Spectrograph: FAST
 Grating: 302
 Date: 12/27/99

Page: 8104

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|---------|-------------|-------|--------|-----|-----|-------------------|
| 109 | 07128 p6826 | 07:14 | +18:20 | 89 | 6m | |
| 110 | COMP | | | f | | |
| 111 | 07329 p6226 | 07:37 | +16:20 | 89 | 6m | bright moon |
| 112 | COMP | | | f | | + clouds |
| 113 | 07329 p6227 | 07:37 | +16:20 | 89 | 6m | = ratty spectrum |
| 114 | COMP | | | f | | |
| 115 | 07305 p7406 | 07:36 | +13:59 | 89 | 20m | |
| 116 | COMP | | | f | | |
| 117 | 07320 p7351 | 07:38 | +13:41 | 89 | 20m | |
| 118 | COMP | | | f | | |
| 119 | 07365 p4920 | 07:40 | +19:16 | 89 | 20m | |
| 120 | COMP | | | f | | |
| 121 | 07382 p7203 | 07:40 | +16:55 | 89 | 4m | |
| 122 | COMP | | | f | | |
| 123 | 07353 p6886 | 07:40 | +16:47 | 89 | 4m | stopped by clouds |
| 124 | COMP | | | f | | |
| 125 | 07320 p8115 | 07:32 | +18:45 | 89 | 5m | stopped again |
| 126 | COMP | | | f | | |
| 127 | 07351 p5505 | 07:40 | +14:48 | 89 | 5m | |
| 128 | COMP | | | f | | |
| 129-138 | BIAS | | | | 0s | clouds @ dawn |
| 139-148 | FLAT | | | | 7s | |
| 149-158 | BIAS | | | | 0s | |
| 159-168 | FLAT | | | | 14s | |
| 169-178 | DARK | | | | 6m | 6m by 4 |

NEW COMPUTER
UPDATED SYSTEM
FOR Y2K COMPLIANCE

Fluo60

60 inch Telescope Log
 Observer: P Berlin
 PI: Ken et al
 Spectrograph: FAST
 Grating: 300R
 Date: 12/28/99
 Page: 8/05

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|-------------|-------|--------|-----|-----|----------------------|
| 1-10 | BIDS | | | | 05 | 1st 1/2 cloudy |
| 11-20 | FLAT | | | | 8 | Engineering; running |
| 21-30 | BIDS | | | | 05 | on Fluo 60 - solars |
| 31-40 | FLAT | | | | 145 | |
| 41 | Tau Gem | 07 | +39 | 57 | 15 | on the sky ~ 1 am |
| 42 | COMP | | | ↑ | | |
| 43 | α576b.137 | 07:23 | +57:30 | 69 | 15m | wk |
| 44 | COMP | | | ↑ | | |
| 45 | .138 | 07:20 | +57:05 | 69 | 15m | ok |
| 46 | COMP | | | ↑ | | |
| 47 | 141 | 07:19 | +57:58 | 69 | 15m | |
| 48 | COMP | | | ↑ | | |
| 49 | SN 1999gh | 08: | -09 | 2 | 20m | PA=0 |
| 50 | COMP | | | ↑ | | |
| 51 | .145 | 07:26 | +57:33 | 69 | 15m | |
| 52 | COMP | | | ↑ | | |
| 53 | .147 | 07:20 | +57 | 69 | 15m | |
| 54 | COMP | | | ↑ | | |
| 55 | .150 | 07:30 | +57 | 69 | 20m | |
| 56 | COMP | | | ↑ | | |
| 57 | SN 1999gh | 09:49 | -21:16 | 2 | 20m | PA=0 |
| 58 | COMP | | | ↑ | | |
| 59 | 67430 p4457 | 07:46 | +44:47 | 69 | 4m | |
| 60 | COMP | | | ↑ | | |
| 61 | 07451 p2520 | 07:48 | +44:13 | 69 | 6m | |
| 62 | COMP | | | ↑ | | |
| 63-64 | F45239 | 10:56 | +17:05 | 66 | 40s | |
| 65 | COMP | | | ↑ | | |

12:20 2

| 60 inch Telescope Log | | | | Spectrograph: <u>FAST</u> | | Page: <u>8106</u> |
|-----------------------|-------------|----------------------|-------|---------------------------|-----|------------------------------|
| Observer: <u>PB</u> | | Grating: <u>300R</u> | | Date: <u>12/28/99</u> | | |
| PI: <u>Andri</u> | | | | | | |
| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
| 66 | nr95241.004 | 13:18 | +3245 | S9 | 6m | |
| 67 | WMP | | | f | | |
| 68 | 001 | 13:16 | +3202 | S9 | 10m | yuck OK - BUT |
| 69 | WMP | | | f | | it doesn't look good |
| 70 | 006 | 13:18 | +3250 | S9 | 6m | |
| 71 | WMP | | | f | | |
| 72 | 008 | 13:18 | +3238 | S9 | 8m | thin clouds + bright moon |
| 73 | WMP | | | f | | |
| 74 | 009 | 13:19 | +3275 | S9 | 8m | |
| 75 | WMP | | | f | | |
| 76 | 017 | 13:19 | +3229 | S9 | 7m | |
| 77 | WMP | | | f | | |
| 78 | 018 | 13:19 | +3221 | S9 | 8m | |
| 79 | WMP | | | f | | |
| 80 | 019 | 13:20 | +3251 | S9 | 8m | |
| 81 | WMP | | | f | | |
| 82 | SN1999sg | 12:33 | +15 | Z | 10m | |
| 83 | WMP | | | f | | |
| 84 | H244 | 13:20 | +76 | S6 | 2m | |
| 85 | WMP | | | f | | |
| 86 | 024 | 13:20 | +3223 | S9 | 6m | clouds & moon |
| 87 | WMP | | | f | | |
| 88-97 | BTAS | | | B | | |
| 98-107 | FLAT | | | 75 | | |
| 108-117 | BTAS | | | B | | |
| 118-127 | FLAT | | | M5 | | |
| 128-137 | DARK | | | | | |

60 inch Telescope Log

Observer: CALKINS

PI: Kochanek et al

Spectrograph: FAST

Grating: 600L

Date: 12/30/99

Page: 8107

| Number | Object | R.A. | Dec. | L/R | Exp | Comments |
|--------|--------|-------|-------|-----|------|------------------|
| 1-5 | Dark | | | | 15m | Bimby 2, 2" slit |
| 6-15 | BIAS | | | | 0s | Tilt = 742 |
| 16-25 | FLAT | | | | 35s | |
| 26,27 | MF2084 | 00 33 | 39 52 | #88 | 7.5m | Row 75, PA = -43 |
| 28 | comp | | | ↑ | | |
| 29,30 | MF2102 | 00 42 | 38 49 | #88 | 7.5m | PA = -37° |
| 31 | comp | | | ↑ | | |
| 32,33 | MF2163 | 01 08 | 33 12 | #88 | 7.5m | PA = -50 |
| 34 | comp | | | ↑ | | |
| 35,36 | MF2160 | 01 07 | 40 14 | #88 | 7.5m | PA = 90° |
| 37 | comp | | | ↑ | | |
| 38,39 | MF2103 | 00 11 | 33 05 | #88 | 7.5m | PA = 70° |
| 40 | comp | | | ↑ | | |
| 41,42 | MF2491 | 2 42 | 32 42 | #88 | 7.5m | PA = 59° |
| 43 | comp | | | ↑ | | |
| 44,45 | MF2115 | 00 47 | 23 03 | #88 | 7.5m | PA = -65° |
| 46 | comp | | | ↑ | | |
| 47 | comp | | | ↓ | | |
| 48-50 | MF2185 | 01 15 | 31 59 | #88 | 15m | PA = -9 |
| 51 | comp | | | ↑ | | |
| 52 | H314 | 04 41 | 10 59 | #56 | 6m | PA = 90° |
| 53 | comp | | | ↑ | | |
| 54,55 | MF2526 | 2 49 | 13 08 | #88 | 7.5m | PA = -15° |
| 56 | comp | | | ↑ | | |
| 57,58 | M2165 | 7 09 | 21 46 | #88 | 7.5m | PA = 10° |
| 59 | comp | | | ↑ | | |
| 60 | comp | | | ↓ | | |
| 61-62 | MF2761 | 7 47 | 22 02 | #88 | 15m | PA = -26 |
| 63 | comp | | | ↑ | | |
| 64-73 | BIAS | | | | 0s | |

