

| 60 inch Telescope Log            |          | Spectrograph: <u>FAST</u> |        | Page: <u>7425</u>    |     |  |
|----------------------------------|----------|---------------------------|--------|----------------------|-----|--|
| Observer: <u>CALKINS</u>         |          | Grating: <u>300L</u>      |        | Date: <u>6/12/99</u> |     |  |
| PI: <u>All, Kirsbaum, Justin</u> |          |                           |        |                      |     |  |
| Number                           | Object   | R.A.                      | Dec.   | L/R                  | Exp | Comments                                   |
| 1-10                             | DARK     |                           |        |                      | 15m |  |
| 11-20                            | BEAS     |                           |        |                      | 0s  |  |
| 21-30                            | FLAT     |                           |        |                      | 6s  |  |
| 31-40                            | NEAS     |                           |        |                      | 0s  |  |
| 41-50                            | FLAT     |                           |        |                      | 12s |  |
| 51-55                            | sky      |                           |        | #57                  | 2s  |  |
| 56                               | comp     |                           |        | ↑                    |     |  |
| 57, 58                           | H244     | 13 23                     | 36 08  | #56                  | 2m  |  |
| 59                               | comp     |                           |        | ↑                    |     |  |
| 60, 61                           | H244     | 13 23                     | 36 07  | #56                  | 2m  | PA = 0°                                    |
| 62                               | comp     |                           |        | ↑                    |     |  |
| 63                               | N3379    | 10 47                     | 12 35  | #57                  | 1m  |  |
| 64                               | comp     |                           |        | ↑                    |     |  |
| 65                               | sn1999by | 9 21                      | 51 00  | #2                   | 15m | PA = 84°, star east                        |
| 66                               | comp     |                           |        | ↑                    |     |  |
| 67                               | A1644-11 | 12 56                     | -17 03 | #81                  | 20m |  |
| 68                               | comp     |                           |        | ↑                    |     |  |
| 69                               | A1644-12 | 12 55                     | -17 05 | #81                  | 20m |  |
| 70                               | comp     |                           |        | ↑                    |     |  |
| 71                               | A1644-13 | 12 57                     | -17 22 | #81                  | 20m |  |
| 72                               | comp     |                           |        | ↑                    |     |  |
| 73                               | A1644-14 | 12 57                     | -18 00 | #81                  | 20m | too faint <sup>emission!</sup> for a red!! |
| 74                               | comp     |                           |        | ↑                    |     |  |
| 75                               | A1644-15 | 12 59                     | -17 04 | #81                  | 15m | Superposed star                            |
| 76                               | comp     |                           |        | ↑                    |     |  |
| 77                               | A1644-16 | 12 59                     | -17 39 | #81                  | 20m |  |
| 78                               | comp     |                           |        | ↑                    |     |  |
| 79                               | A1644-18 | 12 59                     | -17 32 | #81                  | 12m | 2 STARS                                    |
| 80                               | comp     |                           |        | ↑                    |     |  |
| 81                               | A1644-20 | 12 55                     | -17 17 | #81                  | 20m | PA = 30°                                   |

75 Superposed star - obj beneath too dim

60 inch Telescope Log

Spectrograph: FAST

Observer: CALKINS

Grating: 300L

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PI: Justin Geller, Anshra

Date: 6/12/99

| Number | Object      | R.A.  | Dec.  | L/R | Exp | Comments         |
|--------|-------------|-------|-------|-----|-----|------------------|
| 82     | comp        |       |       | ↑   |     |                  |
| 83     | 2199.273491 | 16 23 | 41 26 | #64 | 10m | PA=90°           |
| 84     | comp        |       |       | ↑   |     | ↓                |
| 85     | 2199.275015 | 16 26 | 41 20 | #64 | 11m |                  |
| 86     | comp        |       |       | ↑   |     |                  |
| 87     | 2199.275898 | 16 27 | 41 29 | #64 | 7m  |                  |
| 88     | comp        |       |       | ↑   |     |                  |
| 89     | 2199.277639 | 16 30 | 41 29 | #64 | 15m |                  |
| 90     | comp        |       |       | ↑   |     |                  |
| 91     | 2199.278197 | 16 30 | 41 24 | #64 | 15m | PA=110°          |
| 92     | comp        |       |       | ↑   |     |                  |
| 93     | 2199.286047 | 16 18 | 38 46 | #64 | 12m |                  |
| 94     | comp        |       |       | ↑   |     |                  |
| 95     | 2199.290117 | 16 21 | 41 10 | #64 | 10m |                  |
| 96     | comp        |       |       | ↑   |     |                  |
| 97     | 2199.290845 | 16 22 | 41 17 | #64 | 8 m |                  |
| 98     | comp        |       |       | ↑   |     |                  |
| 99     | 2199.291651 | 16 24 | 41 06 | #64 | 17m |                  |
| 100    | comp        |       |       | ↑   |     |                  |
| 101    | 2199.291658 | 16 24 | 41 14 | #64 | 15m | seeing degrading |
| 102    | comp        |       |       | ↑   |     |                  |
| 103    | 2199.291995 | 16 24 | 41 08 | #64 | 20m |                  |
| 104    | comp        |       |       | ↑   |     |                  |
| 105    | 2199.293656 | 16 27 | 41 18 | #64 | 20m |                  |
| 106    | comp        |       |       | ↑   |     |                  |
| 107    | 21980947    | 18 09 | 38 13 | #68 | 4m  |                  |
| 108    | comp        |       |       | ↑   |     |                  |
| 109    | 21981153    | 18 11 | 36 26 | #68 | 4m  |                  |
| 110    | comp        |       |       | ↑   |     |                  |
| 111    | 21981216    | 18 12 | 39 02 | #68 | 4m  | star east        |

| 60 inch Telescope Log    |           |          | Spectrograph: <u>FAST</u> |     |      | Page: <u>7427</u>    |
|--------------------------|-----------|----------|---------------------------|-----|------|----------------------|
| Observer: <u>CALKINS</u> |           |          | Grating: <u>300L</u>      |     |      | Date: <u>6/12/99</u> |
| PI: <u>Huchra, All</u>   |           |          |                           |     |      |                      |
| Number                   | Object    | R.A.     | Dec.                      | L/R | Exp  | Comments             |
| 112                      | comp      |          |                           | ↑   |      |                      |
| 113                      | ZM181251  | 18 12    | 33 23                     | "68 | 3.5m |                      |
| 114                      | comp      |          |                           | ↑   |      |                      |
| 115                      | ZM181311  | 18 12    | 36 03                     | "68 | 5m   |                      |
| 116                      | comp      |          |                           | ↑   |      |                      |
| 117                      | ZM181334  | 18 13    | 15 35                     | "68 | 4m   | star west            |
| 118                      | comp      |          |                           | ↑   |      |                      |
| 119                      | ZM181352  | 18 13    | 16 39                     | "68 | 6m   | star east            |
| 120                      | comp      |          |                           | ↑   |      |                      |
| 121                      | ZM181440  | 18 14    | 34 42                     | "68 | 4.5m |                      |
| 122                      | comp      | 18:14:41 | +33:57:05                 | ↑   |      | moving?              |
| 123                      | ZM181449  | 18 14    | 13 26                     | "68 | 5m   | seeing terrible!!    |
| 124                      | comp      |          |                           | ↑   |      | (windy)              |
| 125                      | ZM181507  | 18 15    | 41 25                     | "68 | 3.5m | star east            |
| 126                      | comp      |          |                           | ↑   |      |                      |
| 127                      | ZM181552  | 18 15    | 36 06                     | "68 | 11m  | central spectra      |
| 128                      | comp      |          |                           | ↑   |      |                      |
| 129                      | ZM181553  | 18 15    | 33 55                     | "68 | 4m   |                      |
| 130                      | comp      |          |                           | ↑   |      |                      |
| 131                      | ZM181600  | 18 15    | 35 21                     | "68 | 3.5m |                      |
| 132                      | comp      |          |                           | ↑   |      |                      |
| 133                      | ZM181649  | 18 16    | 41 28                     | "68 | 7m   | bright star east     |
| 134                      | comp      |          |                           | ↑   |      |                      |
| 135/136                  | BDp284211 | 21 51    | 28 51                     | "56 | 30s  |                      |
| 137                      | comp      |          |                           | ↑   |      |                      |
| 138-147                  | BIAS      |          |                           |     | 0s   |                      |
| 148-157                  | FLAT      |          |                           |     | 6s   |                      |
| 158-167                  | BIAS      |          |                           |     | 0s   |                      |
| 168-177                  | FLAT      |          |                           |     | 12s  |                      |
| 178-187                  | DARK      |          |                           |     | 15m  |                      |