

|             |                    |               |    |   |    |   |  |  |  |
|-------------|--------------------|---------------|----|---|----|---|--|--|--|
| UT Date     |                    | 13 APRIL 2005 |    | University of Maryland / Kitt Peak National Observatory |    |   |  | Weather, Moon, Notes   |  |
| Page #      | 1                  | 1             | 4  | Observing Log   |    |   |  | Circus over most of sky during the day, but clearing. still patches @ sunset |  |
| Night #     | 5                  |               |    | Filters   |    | CCD Characteristics   |  | Moon ~ 15% illum sets at 6:12  |  |
| Telescope   | KPND 2.1 m         | 1             | DH | 5   | CZ | GAIN: 2.3 e-/ADU<br>READ NOISE: 7.5 e-<br>LINEAR TO: 60K<br>READ TIME: 75 sec |  | Pixel Scale 0.19"  |  |
| Observer    | FARNHAM, KNIGHT    | 2             | 4C | 6   | GC |   |  | E  |  |
| Assistant   | —                  | 3             | CN | 7   | RC |   |  |  |  |
| Inst. / CCD | DIRECT CCD / F31KB | 4             | BC | 8   | R  |   |  |  |  |

| Frame # | Object                   | R.A.     | Dec.       | Epoch | Start UT | Airmass | Exp. | Filter | Comments                    |
|---------|--------------------------|----------|------------|-------|----------|---------|------|--------|-----------------------------|
| 1       | DARK                     | :        | :          |       | :        |         | 1800 |        |                             |
| 2-11    | BIAS                     | :        | :          |       | :        |         |      |        | 820 counts                  |
| 12-16   | <del>DOME FLAT - R</del> | X        | REDD BELOW |       | :        |         | 50   | R      | low lamp @ <del>50</del> 50 |
| 17-21   | DOME FLAT - CN           | :        | :          |       | :        |         | 120  | CN     | high lamp @ max             |
| 22-26   | DOME FLAT - BC           | :        | :          |       | :        |         | 30   | BC     | "                           |
| 27-31   | DOME FLAT - GC           | :        | :          |       | :        |         | 10   | GC     | "                           |
| 32      | DOME FLAT - DH           | :        | :          |       | :        |         | 1800 | DH     | "                           |
| 33-37   | DOME FLAT - CZ           | :        | :          |       | :        |         | 30   | CZ     | high lamp @ 50              |
| 38-42   | DOME FLAT - RC           | :        | :          |       | :        |         | 7    | RC     | "                           |
| 43-47   | DOME FLAT - R            | :        | :          |       | :        |         | 50   | R      | low lamp @ high             |
| 48      | FOCUS                    | :        | :          |       | :        |         | 7x7  | R      | stat @ 20700 mixed from     |
| 49      | "                        | :        | :          |       | :        |         | 7x7  | R      | best at 20450 ~5 pix → 1.0" |
| 50      | COMET MACHOLE 2004 R2    | 11:46:17 | 70:49:43   | 2000  | 2:40:10  | 1.446   | 900  | RCN    | ~2000 counts,               |
| 51      | "                        | :        | :          |       | 2:50:16  | 1.415   | 900  | BC     |                             |
| 52      | "                        | :        | :          |       | 3:15:40  | 1.396   | 300  | R      |                             |

|             |                   |   |      |  |
|-------------|-------------------|---|------|--|
| UT Date     | 13 APRIL 2005     | University of Maryland / Kitt Peak National Observatory |      | Weather, Moon, Notes                             |
| Page #      | 2 / 4             | Observing Log   |      | Some clouds still in South of east, but clearing |
| Night #     | 5                 | CCD Characteristics                                     |      |  |
| Telescope   | KPND 2.1 m        | GAIN: 2.3 e <sup>-</sup> /ADU                           |      |  |
| Observer    | FARNSHAM, KNIGHT  | READ NOISE: 7.5 e <sup>-</sup>                          |      |  |
| Assistant   | —                 | LINEAR TD: 60 K   |      |  |
| Inst. / CCD | DIRECT CCD / F3KB | READ TIME: 75 s   |      |  |
|             |                   | Filters   |      | Pixel Scale                                      |
|             |                   | 1 OH  | 5 CZ | 0.19"  |
|             |                   | 2 MC  | 6 GC |  |
|             |                   | 3 CN  | 7 RC |  |
|             |                   | 4 BC  | 8 R  |  |

| Frame # | Object                 | R.A.     | Dec.     | Epoch | Start UT | Airmass | Exp. | Filter | Comments                                   |
|---------|------------------------|----------|----------|-------|----------|---------|------|--------|--|
| 53      | COMET TEMPEL 1         | 13:11:33 | 13:09:02 | 2000  | 3:26:34  | 1.731   | 300  | R      | 17 K                                       |
| 54      | "                      | :        | :        |       | 3:33:30  | 1.673   | 300  | R      |  |
| 55      | SATURN                 | :        | :        |       | :        |         |      | CN     |  |
| 56      | "                      | :        | :        |       | :        |         |      | CN     |  |
| 57      | "                      | :        | :        |       | :        |         |      | GC     |  |
| 58      | "                      | :        | :        |       | :        |         |      | RC     | Sat  |
| 59      | "                      | :        | :        |       | :        |         |      | RC     |  |
| 60      | "                      | :        | :        |       | :        |         |      | CZ     |  |
| 61      | "                      | :        | :        |       | :        |         |      | MC     |  |
| 62      | COMET MACHHOLE 2004 Q2 | 11:46:21 | 70:48:36 | 2000  | 4:17:28  | 1.319   | 900  | CN     | Bands of cloud in the vicinity of Machholy |
| 63      | "                      | :        | :        |       | 4:35:25  | 1.306   | 900  | BC     |  |
| 64      | "                      | :        | :        |       | 4:52:30  | 1.296   | 900  | CN     |  |
| 65      | "                      | :        | :        |       | 5:09:44  | 1.289   | 900  | CZ     |  |
| 66      | "                      | :        | :        |       | 5:29:05  | 1.284   | 900  | CN     |  |
| 67      | "                      | :        | :        |       | 5:46:07  | 1.283   | 900  | BC     |  |
| 68      | "                      |          |          |       | 6:03:54  | 1.284   | 900  | CN     | Cloud passed.                              |

|             |                   |   |      |                                 |
|-------------|-------------------|---|------|---------------------------------|
| UT Date     | 13 APRIL 2005     | University of Maryland / Kitt Peak National Observatory |      | Weather, Moon, Notes            |
| Page #      | 3 1 4             | Observing Log   |      | <i>circus over south of sky</i> |
| Night #     | 5                 | CCD Characteristics                                     |      |                                 |
| Telescope   | KPNO 2.1M         | GAIN: 2.3   |      |                                 |
| Observer    | FARNHAM, KNIGHT   | READ NOISE: 7.5   |      |                                 |
| Assistant   | —                 | LINEAR TD: 60K  |      |                                 |
| Inst. / CCD | DIRECT CCD / F3KB | READ TIME: 75 sec                                       |      |                                 |
|             |                   | Filters   |      | Pixel Scale                     |
|             | 1 OH              | 5 CZ  | 0.19 |                                 |
|             | 2 UC              | 6 GC  |      |                                 |
|             | 3 CN              | 7 RC  |      |                                 |
|             | 4 BC              | 8 R   |      |                                 |

| Frame # | Object                 | R.A.     | Dec.     | Epoch | Start UT | Airmass | Exp. | Filter | Comments                                |
|---------|------------------------|----------|----------|-------|----------|---------|------|--------|---|
| 69      | COMET TEMPEL 1         | 13:11:29 | 13:08:00 | 2000  | 6:26:08  | 1.075   | 300  | R      | <i>cal filter obtained<br/>4/14</i>     |
| 70      | "                      | :        | :        |       | 6:33:30  | 1.070   | 300  | R      |   |
| 71      | "                      | :        | :        |       | 6:40:35  | 1.065   | 900  | CN     |   |
| 72      | "                      | :        | :        |       | 6:57:50  | 1.058   | 900  | BC     |   |
| 73      | "                      | :        | :        |       | 7:14:40  | 1.057   | 900  | CZ     |   |
| 74      | "                      | :        | :        |       | 7:31:50  | 1.060   | 300  | R      |   |
| 75      | Comet Machholz 2004 Q2 | 11:46:39 | 70:42:58 | 2000  | 7:43:    | 1.342   | 900  | CN     | <i>clouds in the vicinity</i>           |
| 76      | "                      | :        | :        |       | 8:00:00  | 1.361   | 900  | BC     |   |
| 77      | "                      | :        | :        |       | 8:18:26  | 1.385   | 900  | CN     |   |
| 78      | "                      | :        | :        |       | 8:36:08  | 1.413   | 900  | CZ     | <i>cloud present at end of exposure</i> |
| 79      | "                      | :        | :        |       | 8:57:35  | 1.451   | 900  | CN     | <i>cloud most of exposure</i>           |
| 80      | "                      | :        | :        |       | 9:29:30  | 1.519   | 900  | CN     |   |
| 81      | "                      | :        | :        |       | 9:47:37  | 1.563   | 900  | CN     |   |
| 82      | "                      | :        | :        |       | 10:06:10 | 1.614   | 900  | CN     |   |
| 83      | COMET TEMPEL 1         | 13:11:19 | 13:07:46 | 2000  | 10:30:16 | 1.527   | 300  | R      |   |

