

UT Date 2004-05-21 Observers J BattatColl. Focus 1020 Grating/Grism 600

| File | Exp Time | UT Start | RA | Dec | Gr. | P.A. | Slit | Program | Bir | Comments |
|----------------|----------|----------|------------|----------|-----|------|------|----------------|-----|--------------------------------|
| 0001-0010.BIAS | 0 | 2:22 | 18:33:15.6 | +00:9:31 | 600 | 90 | 2.0 | #68 2MASS Reds | 4 | |
| 0011.FLAT | 24 | 2:23 | 18:33:15.6 | +00:9:31 | 600 | 90 | 2.0 | #68 2MASS Reds | 4 | 600line 2arcsec for halo stars |
| 0012-0020.FLAT | 24 | 2:28 | 18:33:15.6 | +00:9:31 | 600 | 90 | 2.0 | #68 2MASS Reds | 4 | |
| 0021.hs2031 | 120 | 3:18 | 11:47:29.4 | 18:29:41 | 600 | 90 | 2.0 | #122 Halo Star | 4 | a night for warren begins |
| 0022.COMP | 10 | 3:20 | 11:47:29.4 | 18:29:41 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0023.hs2031 | 300 | 3:20 | 11:47:29.4 | 18:29:41 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0024.COMP | 10 | 3:26 | 11:47:29.4 | 18:29:41 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0025.hs2099 | 240 | 3:28 | 11:57:56.3 | 10:51:18 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0026.COMP | 10 | 3:32 | 11:57:56.3 | 10:51:18 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0027.hs2101 | 210 | 3:34 | 11:58:05.0 | 11:30:44 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0028.COMP | 10 | 3:38 | 11:58:05.0 | 11:30:44 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0029.hs2098 | 500 | 3:39 | 11:57:53.7 | 26:14:59 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0030.COMP | 10 | 3:48 | 11:57:53.7 | 26:14:59 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0031.hs2100 | 420 | 3:50 | 11:58:00.3 | 29:57:31 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0032.COMP | 10 | 3:58 | 11:58:00.3 | 29:57:31 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0033.hs2101 | 540 | 3:59 | 11:58:05.0 | 11:30:44 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0034.COMP | 10 | 4:08 | 11:58:05.0 | 11:30:44 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0035.hs2102 | 570 | 4:10 | 11:58:06.1 | 42:51:46 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0036.COMP | 10 | 4:19 | 11:58:06.1 | 42:51:46 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0037.hs2146 | 570 | 4:21 | 12:04:48.1 | 10:45:26 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |

UT Date 2004-05-21 Observers J BattatColl. Focus 1020 Grating/Grism 600

| File | Exp Time | UT Start | RA | Dec | Gr. | P.A. | Slit | Program | Bin | Comments |
|-------------|----------|----------|------------|----------|-----|------|------|----------------|-----|----------|
| 0038.COMP | 10 | 4:31 | 12:04:48.1 | 10:45:26 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0039.hs2166 | 240 | 4:35 | 12:07:54.0 | 46:19:40 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0040.COMP | 10 | 4:39 | 12:07:54.0 | 46:19:40 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0041.hs2168 | 600 | 4:40 | 12:08:11.4 | 42:32:26 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0042.COMP | 10 | 4:50 | 12:08:11.4 | 42:32:26 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0043.hs2175 | 420 | 4:53 | 12:08:57.1 | 44:57:47 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0044.COMP | 10 | 5:00 | 12:08:57.1 | 44:57:47 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0045.hs2174 | 300 | 5:01 | 12:08:51.7 | 38:33:19 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0046.COMP | 10 | 5:07 | 12:08:51.7 | 38:33:19 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0047.hs2172 | 240 | 5:08 | 12:08:42.0 | 36:02:07 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0048.COMP | 10 | 5:12 | 12:08:42.0 | 36:02:07 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0049.hs2171 | 300 | 5:14 | 12:08:33.6 | 31:49:05 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0050.COMP | 10 | 5:20 | 12:08:33.6 | 31:49:05 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0051.hs2583 | 180 | 5:22 | 13:48:49.2 | 76:16:00 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0052.COMP | 10 | 5:25 | 13:48:49.2 | 76:16:00 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0053.hs2584 | 420 | 5:26 | 13:49:18.2 | 74:41:53 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0054.COMP | 10 | 5:33 | 13:49:18.2 | 74:41:53 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0055.hs2588 | 420 | 5:37 | 13:51:08.0 | 79:33:46 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0056.COMP | 10 | 5:45 | 13:51:08.0 | 79:33:46 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0057.hs2587 | 330 | 5:47 | 13:51:01.1 | 75:36:30 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |

UT Date 2004-05-21 Observers J BattatColl. Focus 1020 Grating/Grism 600

| File | Exp Time | UT Start | RA | Dec | Gr. | P.A. | Slit | Program | Bin | Comments |
|-------------|----------|----------|------------|----------|-----|------|------|----------------|-----|----------|
| 0058.COMP | 10 | 5:52 | 13:51:01.1 | 75:36:30 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0059.hs2651 | 480 | 5:56 | 14:19:20.8 | 72:52:16 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0060.COMP | 10 | 6:04 | 14:19:20.8 | 72:52:16 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0061.hs2650 | 210 | 6:05 | 14:18:37.9 | 63:43:38 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0062.COMP | 10 | 6:09 | 14:18:37.9 | 63:43:38 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0063.hs2653 | 480 | 6:11 | 14:19:37.8 | 63:04:35 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0064.COMP | 10 | 6:19 | 14:19:37.8 | 63:04:35 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0065.hs2652 | 480 | 6:21 | 14:19:22.3 | 59:37:41 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0066.COMP | 10 | 6:29 | 14:19:22.3 | 59:37:41 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0067.hs2414 | 360 | 6:31 | 12:56:24.8 | 32:26:33 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0068.COMP | 10 | 6:37 | 12:56:24.8 | 32:26:33 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0069.hs2420 | 360 | 6:38 | 12:59:43.2 | 31:20:29 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0070.COMP | 10 | 6:44 | 12:59:43.2 | 31:20:29 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0071.hs2416 | 420 | 6:46 | 12:56:49.2 | 31:49:36 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0072.COMP | 10 | 6:53 | 12:56:49.2 | 31:49:36 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0073.hs2771 | 180 | 6:55 | 15:32:50.6 | 78:13:37 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0074.COMP | 10 | 6:58 | 15:32:50.6 | 78:13:37 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0075.hs2773 | 150 | 7:00 | 15:34:30.3 | 65:59:37 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0076.COMP | 10 | 7:03 | 15:34:30.3 | 65:59:37 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0077.hs2772 | 240 | 7:04 | 15:33:54.0 | 60:45:43 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |

UT Date 2004-05-21 Observers J BattatColl. Focus 1020 Grating/Grism 600

| File | Exp Time | UT Start | RA | Dec | Gr. | P.A. | Slit | Program | Bir | Comments |
|----------------|----------|----------|------------|----------|-----|------|------|----------------|-----|----------|
| 0078.COMP | 10 | 7:08 | 15:33:54.0 | 60:45:43 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0079.hs2775 | 240 | 7:09 | 15:37:43.4 | 66:13:53 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0080.COMP | 10 | 7:14 | 15:37:43.4 | 66:13:53 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0081.BDp332642 | 60 | 7:16 | 15:50:03.0 | 33:05:49 | 600 | 90 | 2.0 | #56 Spectropho | 4 | blue std |
| 0082.BDp332642 | 60 | 7:18 | 15:50:03.0 | 33:05:49 | 600 | 90 | 2.0 | #56 Spectropho | 4 | |
| 0083.COMP | 10 | 7:19 | 15:50:03.0 | 33:05:49 | 600 | 90 | 2.0 | #56 Spectropho | 4 | |
| 0084.hs2800 | 390 | 7:22 | 15:54:15.3 | 70:12:59 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0085.COMP | 10 | 7:28 | 15:54:15.3 | 70:12:59 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0086.hs2805 | 150 | 7:29 | 15:59:11.9 | 76:18:03 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0087.COMP | 10 | 7:32 | 15:59:11.9 | 76:18:03 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0088.hs2803 | 420 | 7:33 | 15:58:39.1 | 71:47:41 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0089.COMP | 10 | 7:41 | 15:58:39.1 | 71:47:41 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0090.hs2801 | 270 | 7:42 | 15:54:43.5 | 70:03:16 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0091.COMP | 10 | 7:47 | 15:54:43.5 | 70:03:16 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0092.hs2804 | 450 | 7:48 | 15:58:48.7 | 67:38:05 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0093.COMP | 10 | 7:56 | 15:58:48.7 | 67:38:05 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0094.hs2807 | 450 | 7:57 | 16:00:11.0 | 67:08:49 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0095.COMP | 10 | 8:05 | 16:00:11.0 | 67:08:49 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0096.hs2806 | 540 | 8:06 | 16:00:08.7 | 62:48:38 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0097.COMP | 10 | 8:15 | 16:00:08.7 | 62:48:38 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |

UT Date 2004-05-21 Observers J BattatColl. Focus 1020 Grating/Grism 600

| File | Exp Time | UT Start | RA | Dec | Gr. | P.A. | Slit | Program | Bir | Comments |
|-------------|----------|----------|------------|----------|-----|------|------|----------------|-----|----------|
| 0098.hs2802 | 240 | 8:17 | 15:56:42.2 | 60:18:32 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0099.COMP | 10 | 8:21 | 15:56:42.2 | 60:18:32 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0100.hs2872 | 510 | 8:22 | 16:43:32.4 | 72:57:29 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0101.COMP | 10 | 8:31 | 16:43:32.4 | 72:57:29 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0102.hs2869 | 300 | 8:33 | 16:42:12.0 | 72:29:05 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0103.COMP | 10 | 8:38 | 16:42:12.0 | 72:29:05 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0104.hs2863 | 540 | 8:40 | 16:34:44.8 | 71:44:02 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0105.COMP | 10 | 8:49 | 16:34:44.8 | 71:44:02 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0106.hs2875 | 480 | 8:53 | 16:47:39.2 | 71:27:51 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0107.COMP | 10 | 9:01 | 16:47:39.2 | 71:27:51 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0108.hs2876 | 150 | 9:03 | 16:48:09.0 | 71:25:00 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0109.COMP | 10 | 9:06 | 16:48:09.0 | 71:25:00 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0110.hs2882 | 270 | 9:07 | 16:56:53.3 | 69:00:23 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0111.COMP | 10 | 9:12 | 16:56:53.3 | 69:00:23 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0112.hs2880 | 600 | 9:16 | 16:54:21.1 | 67:45:37 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0113.COMP | 10 | 9:26 | 16:54:21.1 | 67:45:37 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0114.hs2881 | 300 | 9:27 | 16:55:20.3 | 67:37:57 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0115.COMP | 10 | 9:32 | 16:55:20.3 | 67:37:57 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0116.hs2870 | 600 | 9:35 | 16:42:52.5 | 62:00:54 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0117.COMP | 10 | 9:45 | 16:42:52.5 | 62:00:54 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |

UT Date 2004-05-21 Observers J BattatColl. Focus 1020 Grating/Grism 600

| File | Exp Time | UT Start | RA | Dec | Gr. | P.A. | Slit | Program | Bir | Comments |
|-------------|----------|----------|------------|----------|-----|------|------|----------------|-----|----------|
| 0118.hs2877 | 480 | 9:46 | 16:48:48.7 | 66:32:46 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0119.COMP | 10 | 9:54 | 16:48:48.7 | 66:32:46 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0120.hs2884 | 210 | 9:56 | 16:57:10.0 | 67:21:28 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0121.COMP | 10 | 10:00 | 16:57:10.0 | 67:21:28 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0122.hs2874 | 240 | 10:01 | 16:46:30.1 | 63:03:10 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0123.COMP | 10 | 10:06 | 16:46:30.1 | 63:03:10 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0124.hs2873 | 210 | 10:07 | 16:46:02.9 | 62:40:05 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0125.COMP | 10 | 10:11 | 16:46:02.9 | 62:40:05 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0126.hs2878 | 300 | 10:12 | 16:51:09.8 | 62:34:02 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0127.COMP | 10 | 10:17 | 16:51:09.8 | 62:34:02 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0128.hs2879 | 210 | 10:18 | 16:53:56.8 | 62:25:35 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0129.COMP | 10 | 10:22 | 16:53:56.8 | 62:25:35 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0130.hs2883 | 390 | 10:23 | 16:57:08.6 | 60:59:42 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0131.COMP | 10 | 10:30 | 16:57:08.6 | 60:59:42 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0132.hs2871 | 480 | 10:31 | 16:43:09.2 | 60:48:03 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0133.COMP | 10 | 10:39 | 16:43:09.2 | 60:48:03 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0134.hs2868 | 150 | 10:40 | 16:41:53.9 | 63:37:39 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0135.COMP | 10 | 10:43 | 16:41:53.9 | 63:37:39 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0136.hs2867 | 600 | 10:44 | 16:38:14.6 | 59:59:39 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0137.COMP | 10 | 10:55 | 16:38:14.6 | 59:59:39 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |

UT Date 2004-05-21 Observers J BattatColl. Focus 1020 Grating/Grism 600

| <i>File</i> | <i>Exp Time</i> | <i>UT Start</i> | <i>RA</i> | <i>Dec</i> | <i>Gr.</i> | <i>P.A.</i> | <i>Slit</i> | <i>Program</i> | <i>Bin</i> | <i>Comments</i> |
|----------------|-----------------|-----------------|-----------|------------|------------|-------------|-------------|----------------|------------|-----------------|
| 0138-0147.BIAS | 0 | 11:01 | 19:33:00 | 32:00:00 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0148-0157.FLAT | 24 | 11:06 | 19:33:00 | 32:00:00 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0158-0167.DARK | 900 | 13:33 | 19:33:00 | 32:00:00 | 600 | 90 | 2.0 | #122 Halo Star | 4 | |
| 0168-0169.DARK | 900 | 14:03 | 19:33:00 | 32:00:00 | 600 | 90 | 2.0 | #122 Halo Star | 2 | |