INT OBSERVING LOG (ISAAC NEWTON GROUP, LA PALMA)

TELESCOPE: INT
DATE: 20000920
TAPE NR: INTD4508
OBSERVER: David James, David Mitchell, Kevin Pearson
PROGRAMME: Planet Transits in NGC7789
PATT/CAT REF.: P30+M31
TELESCOPE OPERATOR: -
SUPPORT ASTRONOMER: -

TELESCOPE FOCUS: not specified
CALIBRATE RESULTS: not specified

INSTRUMENT: WFC

WFC FILTER WHEEL: g,V,r,i,z,Ha

WEATHER: (1st half)
(2nd half)
CLOUD COVER (%): (1st half)
(2nd half)
DUST (0-2): (1st half)
(2nd half)
SEEING (arcsec): (1st half)
(2nd half)

DOME OPENED (UT): 20:20

METEOROLOGICAL PARAMETERS

UT	AirT	Hum%	Wspd	Gust	Wdir	Press	LocT	IntT	Mirr	LocRH	IntRH
20:00	6.1	96	30.2	35.8	1	769.5	6.6	15.6	15.2	92	55
21:00	5.7	95	29.3	30.6	11	769.9	6.1	15.4	15.3	92	53
22:00	5.7	96	29.3	31.7	335	770.3	6.2	15.2	15.3	92	55
23:00	6.5	84	33.9	36.6	2	770.4	6.9	11.0	15.0	81	65
00:00	7.2	70	28.6	34.8	356	770.3	7.7	10.6	14.8	65	56
01:00	7.1	67	28.7	29.8	355	770.3	7.6	10.3	14.1	63	57
02:00	7.3	66	29.3	31.7	336	769.9	7.8	10.7	13.9	62	54
03:00	7.1	63	24.2	25.2	337	769.6	7.7	10.2	13.7	57	53
04:00	7.6	65	25.9	26.3	342	769.4	8.1	9.9	13.6	60	56
05:00	7.2	64	18.9	20.6	20	769.4	7.7	10.0	13.5	64	55
06:00	7.4	60	20.5	21.0	347	769.4	7.9	9.9	13.3	55	49

SUNSET(UT) 19:18
EVENING TWILIGHT(UT) 20:30
MORNING TWILIGHT(UT) 05:41
SUNRISE(UT) 06:52
MOON'S QUARTER (1-4) 4
DISK % OF ILLUM. 49
DARK TIME 09:11
TWILIGHT TIME 02:23
MOONRISE(UT) 00:04
MOONSET(UT) No moonset within sunset-sunrise

TIME LOST(WEATHER): 02:00
TIME LOST(TECHNICAL): 00:00
TIME LOST(OTHER): 00:00

Run no.	Object name	RA	Dec.	Equinox	AM	PA	UT	Exp. T.	Filter	Psys	Channel	Binning	Comments
230312	Bias	8:00:00.00	+00:00:00.0	J2000.00	1.843	180.0	12:40:08.1	0.0	i	Sloan		1 x 1	

230312	Bias	8:00:00.00	+00:00:00.0	J2000.00	1.843	180.0	12:40:08.1	0.0	i	Sloan	1 x 1
230313	Bias	0:00:00.00	+00:00:00.0	J2000.00	4.283	180.0	12:46:09.7	0.0	i	Sloan	1 x 1
230313	Bias	0:00:00.00	+00:00:00.0	J2000.00	4.283	180.0	12:46:09.7	0.0	i	Sloan	1 x 1
230314	Bias	0:00:00.00	+00:00:00.0	J2000.00	4.283	180.0	12:58:59.2	0.0	g	Sloan	1 x 1
230314	Bias	0:00:00.00	+00:00:00.0	J2000.00	4.283	180.0	12:58:59.2	0.0	g	Sloan	1 x 1
230315	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:05:05.0	0.0	r	Sloan	1 x 1
230315	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:05:05.0	0.0	r	Sloan	1 x 1
230316	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:06:03.1	0.0	r	Sloan	1 x 1
230316	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:06:03.1	0.0	r	Sloan	1 x 1
230317	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:07:01.4	0.0	r	Sloan	1 x 1
230317	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:07:01.4	0.0	r	Sloan	1 x 1
230318	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:07:58.7	0.0	r	Sloan	1 x 1
230318	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:07:58.7	0.0	r	Sloan	1 x 1
230319	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:08:56.1	0.0	r	Sloan	1 x 1
230319	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:08:56.1	0.0	r	Sloan	1 x 1
230320	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:09:53.5	0.0	r	Sloan	1 x 1
230320	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:09:53.5	0.0	r	Sloan	1 x 1
230321	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:10:50.9	0.0	r	Sloan	1 x 1
230321	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:10:50.9	0.0	r	Sloan	1 x 1
230322	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:11:48.3	0.0	r	Sloan	1 x 1
230322	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:11:48.3	0.0	r	Sloan	1 x 1
230323	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:17:04.5	0.0	r	Sloan	1 x 1
230323	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:17:04.5	0.0	r	Sloan	1 x 1
230324	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:18:02.0	0.0	r	Sloan	1 x 1
230324	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:18:02.0	0.0	r	Sloan	1 x 1
230325	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:18:60.2	0.0	r	Sloan	1 x 1
230325	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:18:60.2	0.0	r	Sloan	1 x 1
230326	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:19:58.8	0.0	r	Sloan	1 x 1
230326	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:19:58.8	0.0	r	Sloan	1 x 1
230327	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:20:56.3	0.0	r	Sloan	1 x 1
230327	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:20:56.3	0.0	r	Sloan	1 x 1
230328	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:21:54.1	0.0	r	Sloan	1 x 1
230328	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:21:54.1	0.0	r	Sloan	1 x 1
230329	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:22:51.5	0.0	r	Sloan	1 x 1
230329	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:22:51.5	0.0	r	Sloan	1 x 1
230330	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:23:52.1	0.0	r	Sloan	1 x 1
230330	BIAS	0:00:00.00	+00:00:00.0	J2000.00	1.000	180.0	21:23:52.1	0.0	r	Sloan	1 x 1
230331	Focus run	18:42:44.99	+00:10:49.0	J2000.00	1.251	180.0	21:33:32.6	9.6	r	Sloan	1 x 1
230331	Focus run	18:42:44.99	+00:10:49.0	J2000.00	1.251	180.0	21:33:32.6	9.6	r	Sloan	1 x 1
230332	PSR J2322+2057	23:22:22.35	+20:57:02.9	J2000.00	1.276	180.0	21:46:34.5	30.1	r	Sloan	1 x 1
230332	PSR J2322+2057	23:22:22.35	+20:57:02.9	J2000.00	1.276	180.0	21:46:34.5	30.1	r	Sloan	1 x 1
230333	PSR J2322+2057	23:22:22.36	+20:57:02.9	J2000.00	1.268	180.0	21:48:30.6	30.1	r	Sloan	1 x 1
230333	PSR J2322+2057	23:22:22.36	+20:57:02.9	J2000.00	1.268	180.0	21:48:30.6	30.1	r	Sloan	1 x 1
230335	PSR J2322+2057	23:22:23.07	+20:57:02.9	J2000.00	1.260	180.0	21:50:48.8	30.1	r	Sloan	1 x 1
230335	PSR J2322+2057	23:22:23.07	+20:57:02.9	J2000.00	1.260	180.0	21:50:48.8	30.1	r	Sloan	1 x 1
230336	PSR J2322+2057	23:22:23.78	+20:57:02.8	J2000.00	1.253	180.0	21:52:45.7	30.1	r	Sloan	1 x 1
230336	PSR J2322+2057	23:22:23.78	+20:57:02.8	J2000.00	1.253	180.0	21:52:45.7	30.1	r	Sloan	1 x 1
230337	PSR J2322+2057	23:22:24.50	+20:57:02.9	J2000.00	1.246	180.0	21:54:39.2	30.1	r	Sloan	1 x 1
230337	PSR J2322+2057	23:22:24.50	+20:57:02.9	J2000.00	1.246	180.0	21:54:39.2	30.1	r	Sloan	1 x 1
230338	PSR J2322+2057	23:22:25.21	+20:57:02.9	J2000.00	1.239	180.0	21:56:33.2	30.1	r	Sloan	1 x 1
230338	PSR J2322+2057	23:22:25.21	+20:57:02.9	J2000.00	1.239	180.0	21:56:33.2	30.1	r	Sloan	1 x 1
230339	PSR J2322+2057	23:22:25.93	+20:57:02.8	J2000.00	1.233	180.0	21:58:27.9	30.1	r	Sloan	1 x 1
230339	PSR J2322+2057	23:22:25.93	+20:57:02.8	J2000.00	1.233	180.0	21:58:27.9	30.1	r	Sloan	1 x 1
230340	PSR J2322+2057	23:22:26.64	+20:57:03.0	J2000.00	1.226	180.0	22:00:24.0	30.1	r	Sloan	1 x 1
230340	PSR J2322+2057	23:22:26.64	+20:57:03.0	J2000.00	1.226	180.0	22:00:24.0	30.1	r	Sloan	1 x 1
230341	PSR J2322+2057	23:22:26.64	+20:57:02.9	J2000.00	1.218	180.0	22:02:37.6	60.0	r	Sloan	1 x 1
230341	PSR J2322+2057	23:22:26.64	+20:57:02.9	J2000.00	1.218	180.0	22:02:37.6	60.0	r	Sloan	1 x 1
230342	PSR J2322+2057	23:22:22.36	+20:57:12.7	J2000.00	1.207	180.0	22:06:02.4	60.1	r	Sloan	1 x 1
230342	PSR J2322+2057	23:22:22.36	+20:57:12.7	J2000.00	1.207	180.0	22:06:02.4	60.1	r	Sloan	1 x 1
230343	PSR J2322+2057	23:22:22.36	+20:57:22.9	J2000.00	1.199	180.0	22:08:32.2	60.0	r	Sloan	1 x 1
230343	PSR J2322+2057	23:22:22.36	+20:57:22.9	J2000.00	1.199	180.0	22:08:32.2	60.0	r	Sloan	1 x 1
230344	PSR J2322+2057	23:22:22.35	+20:57:33.0	J2000.00	1.192	180.0	22:11:06.9	60.1	r	Sloan	1 x 1

230344	PSR J2322+2057	23:22:22.35	+20:57:33.0	J2000.00	1.192	180.0	22:11:06.9	60.1	r	Sloan	1 x 1
230345	PSR J2322+2057	23:22:22.35	+20:57:42.7	J2000.00	1.184	180.0	22:13:41.9	60.1	r	Sloan	1 x 1
230345	PSR J2322+2057	23:22:22.35	+20:57:42.7	J2000.00	1.184	180.0	22:13:41.9	60.1	r	Sloan	1 x 1
230346	PSR J2322+2057	23:22:22.36	+20:57:53.0	J2000.00	1.177	180.0	22:16:09.6	60.1	r	Sloan	1 x 1
230346	PSR J2322+2057	23:22:22.36	+20:57:53.0	J2000.00	1.177	180.0	22:16:09.6	60.1	r	Sloan	1 x 1
230347	PSR J2322+2057	23:22:22.36	+20:58:02.8	J2000.00	1.170	180.0	22:18:46.5	60.0	r	Sloan	1 x 1
230347	PSR J2322+2057	23:22:22.36	+20:58:02.8	J2000.00	1.170	180.0	22:18:46.5	60.0	r	Sloan	1 x 1
230348	TEST	23:57:30.81	+56:43:41.8	J2000.00	1.305	180.0	22:24:44.4	10.1	r	Sloan	1 x 1
230348	TEST	23:57:30.81	+56:43:41.8	J2000.00	1.305	180.0	22:24:44.4	10.1	r	Sloan	1 x 1
230350	NGC 7789	23:57:30.81	+56:43:41.7	J2000.00	1.292	180.0	22:28:11.1	299.8	r	Sloan	1 x 1
230350	NGC 7789	23:57:30.81	+56:43:41.7	J2000.00	1.292	180.0	22:28:11.1	299.8	r	Sloan	1 x 1
230351	NGC 7789	23:57:30.80	+56:43:41.9	J2000.00	1.276	180.0	22:35:32.3	299.7	r	Sloan	1 x 1
230351	NGC 7789	23:57:30.80	+56:43:41.9	J2000.00	1.276	180.0	22:35:32.3	299.7	r	Sloan	1 x 1
230352	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.262	180.0	22:42:21.5	299.8	r	Sloan	1 x 1
230352	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.262	180.0	22:42:21.5	299.8	r	Sloan	1 x 1
230353	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.249	180.0	22:49:10.2	299.7	r	Sloan	1 x 1
230353	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.249	180.0	22:49:10.2	299.7	r	Sloan	1 x 1
230354	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.237	180.0	22:56:00.4	299.8	r	Sloan	1 x 1
230354	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.237	180.0	22:56:00.4	299.8	r	Sloan	1 x 1
230355	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.226	180.0	23:02:49.9	299.7	r	Sloan	1 x 1
230355	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.226	180.0	23:02:49.9	299.7	r	Sloan	1 x 1
230356	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.215	180.0	23:09:38.9	299.8	r	Sloan	1 x 1
230356	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.215	180.0	23:09:38.9	299.8	r	Sloan	1 x 1
230357	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.205	180.0	23:16:28.8	299.9	r	Sloan	1 x 1
230357	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.205	180.0	23:16:28.8	299.9	r	Sloan	1 x 1
230358	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.200	180.0	23:22:59.7	0.0	r	Sloan	1 x 1
230358	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.200	180.0	23:22:59.7	0.0	r	Sloan	1 x 1
230359	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.194	180.0	23:24:39.6	299.8	r	Sloan	1 x 1
230359	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.194	180.0	23:24:39.6	299.8	r	Sloan	1 x 1
230360	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.186	180.0	23:31:30.3	299.8	r	Sloan	1 x 1
230360	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.186	180.0	23:31:30.3	299.8	r	Sloan	1 x 1
230361	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.178	180.0	23:38:18.3	299.8	r	Sloan	1 x 1
230361	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.178	180.0	23:38:18.3	299.8	r	Sloan	1 x 1
230362	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.171	180.0	23:45:07.9	299.8	r	Sloan	1 x 1
230362	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.171	180.0	23:45:07.9	299.8	r	Sloan	1 x 1
230363	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.165	180.0	23:51:57.3	299.7	r	Sloan	1 x 1
230363	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.165	180.0	23:51:57.3	299.7	r	Sloan	1 x 1
230364	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.159	180.0	23:58:46.5	299.8	r	Sloan	1 x 1
230364	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.159	180.0	23:58:46.5	299.8	r	Sloan	1 x 1
230365	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.153	180.0	00:05:35.8	299.8	r	Sloan	1 x 1
230365	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.153	180.0	00:05:35.8	299.8	r	Sloan	1 x 1
230366	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.149	180.0	00:12:24.1	299.8	r	Sloan	1 x 1
230366	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.149	180.0	00:12:24.1	299.8	r	Sloan	1 x 1
230367	NGC 7789	23:57:30.80	+56:43:41.9	J2000.00	1.145	180.0	00:19:14.4	299.8	r	Sloan	1 x 1
230367	NGC 7789	23:57:30.80	+56:43:41.9	J2000.00	1.145	180.0	00:19:14.4	299.8	r	Sloan	1 x 1
230368	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.141	180.0	00:26:03.8	299.9	r	Sloan	1 x 1
230368	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.141	180.0	00:26:03.8	299.9	r	Sloan	1 x 1
230369	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.138	180.0	00:32:54.5	299.8	r	Sloan	1 x 1
230369	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.138	180.0	00:32:54.5	299.8	r	Sloan	1 x 1
230370	BIAS	23:57:30.81	+56:43:41.7	J2000.00	1.137	180.0	00:39:24.9	0.0	r	Sloan	1 x 1
230370	BIAS	23:57:30.81	+56:43:41.7	J2000.00	1.137	180.0	00:39:24.9	0.0	r	Sloan	1 x 1
230371	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.136	180.0	00:41:05.1	299.8	r	Sloan	1 x 1
230371	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.136	180.0	00:41:05.1	299.8	r	Sloan	1 x 1
230372	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.134	180.0	00:47:55.8	299.8	r	Sloan	1 x 1
230372	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.134	180.0	00:47:55.8	299.8	r	Sloan	1 x 1
230373	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.133	180.0	00:54:43.7	299.8	r	Sloan	1 x 1
230373	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.133	180.0	00:54:43.7	299.8	r	Sloan	1 x 1
230374	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.132	180.0	01:01:32.0	299.7	r	Sloan	1 x 1
230374	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.132	180.0	01:01:32.0	299.7	r	Sloan	1 x 1
230375	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.132	180.0	01:08:23.1	299.9	r	Sloan	1 x 1
230375	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.132	180.0	01:08:23.1	299.9	r	Sloan	1 x 1
230376	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.132	180.0	01:15:11.4	299.8	r	Sloan	1 x 1

230376	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.132	180.0	01:15:11.4	299.8	r	Sloan	1 x 1
230377	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.134	180.0	01:22:00.9	299.9	r	Sloan	1 x 1
230377	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.134	180.0	01:22:00.9	299.9	r	Sloan	1 x 1
230378	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.135	180.0	01:28:50.3	299.8	r	Sloan	1 x 1
230378	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.135	180.0	01:28:50.3	299.8	r	Sloan	1 x 1
230379	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.137	180.0	01:35:39.1	299.8	r	Sloan	1 x 1
230379	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.137	180.0	01:35:39.1	299.8	r	Sloan	1 x 1
230380	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.140	180.0	01:42:28.9	299.8	r	Sloan	1 x 1
230380	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.140	180.0	01:42:28.9	299.8	r	Sloan	1 x 1
230381	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.142	180.0	01:49:06.9	0.0	r	Sloan	1 x 1
230381	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.142	180.0	01:49:06.9	0.0	r	Sloan	1 x 1
230382	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.144	180.0	01:51:04.3	299.8	r	Sloan	1 x 1
230382	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.144	180.0	01:51:04.3	299.8	r	Sloan	1 x 1
230383	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.148	180.0	01:57:53.8	299.8	r	Sloan	1 x 1
230383	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.148	180.0	01:57:53.8	299.8	r	Sloan	1 x 1
230384	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.153	180.0	02:04:42.6	299.8	r	Sloan	1 x 1
230384	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.153	180.0	02:04:42.6	299.8	r	Sloan	1 x 1
230385	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.158	180.0	02:11:32.0	299.8	r	Sloan	1 x 1
230385	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.158	180.0	02:11:32.0	299.8	r	Sloan	1 x 1
230386	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.164	180.0	02:18:20.9	299.9	r	Sloan	1 x 1
230386	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.164	180.0	02:18:20.9	299.9	r	Sloan	1 x 1
230387	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.170	180.0	02:25:09.6	299.8	r	Sloan	1 x 1
230387	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.170	180.0	02:25:09.6	299.8	r	Sloan	1 x 1
230388	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.177	180.0	02:31:58.4	299.8	r	Sloan	1 x 1
230388	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.177	180.0	02:31:58.4	299.8	r	Sloan	1 x 1
230389	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.185	180.0	02:38:46.5	299.4	r	Sloan	1 x 1
230389	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.185	180.0	02:38:46.5	299.4	r	Sloan	1 x 1
230390	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.193	180.0	02:45:37.2	299.9	r	Sloan	1 x 1
230390	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.193	180.0	02:45:37.2	299.9	r	Sloan	1 x 1
230391	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.202	180.0	02:52:26.3	299.9	r	Sloan	1 x 1
230391	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.202	180.0	02:52:26.3	299.9	r	Sloan	1 x 1
230392	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.212	180.0	02:59:16.0	299.8	r	Sloan	1 x 1
230392	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.212	180.0	02:59:16.0	299.8	r	Sloan	1 x 1
230393	BIAS	23:57:30.80	+56:43:41.8	J2000.00	1.217	180.0	03:05:45.7	0.0	r	Sloan	1 x 1
230393	BIAS	23:57:30.80	+56:43:41.8	J2000.00	1.217	180.0	03:05:45.7	0.0	r	Sloan	1 x 1
230394	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.225	180.0	03:08:19.8	299.9	r	Sloan	1 x 1
230394	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.225	180.0	03:08:19.8	299.9	r	Sloan	1 x 1
230395	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.237	180.0	03:15:08.5	299.9	r	Sloan	1 x 1
230395	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.237	180.0	03:15:08.5	299.9	r	Sloan	1 x 1
230396	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.249	180.0	03:21:58.1	299.8	r	Sloan	1 x 1
230396	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.249	180.0	03:21:58.1	299.8	r	Sloan	1 x 1
230397	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.262	180.0	03:28:47.8	299.8	r	Sloan	1 x 1
230397	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.262	180.0	03:28:47.8	299.8	r	Sloan	1 x 1
230398	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.276	180.0	03:35:36.6	299.4	r	Sloan	1 x 1
230398	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.276	180.0	03:35:36.6	299.4	r	Sloan	1 x 1
230399	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.290	180.0	03:42:26.2	299.8	r	Sloan	1 x 1
230399	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.290	180.0	03:42:26.2	299.8	r	Sloan	1 x 1
230400	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.306	180.0	03:49:14.9	299.7	r	Sloan	1 x 1
230400	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.306	180.0	03:49:14.9	299.7	r	Sloan	1 x 1
230401	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.322	180.0	03:56:04.5	299.8	r	Sloan	1 x 1
230401	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.322	180.0	03:56:04.5	299.8	r	Sloan	1 x 1
230402	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.340	180.0	04:02:54.3	299.7	r	Sloan	1 x 1
230402	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.340	180.0	04:02:54.3	299.7	r	Sloan	1 x 1
230403	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.358	180.0	04:09:44.2	299.8	r	Sloan	1 x 1
230403	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.358	180.0	04:09:44.2	299.8	r	Sloan	1 x 1
230404	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.370	180.0	04:16:29.1	0.0	r	Sloan	1 x 1
230404	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.370	180.0	04:16:29.1	0.0	r	Sloan	1 x 1
230405	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.383	180.0	04:18:15.9	299.6	r	Sloan	1 x 1
230405	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.383	180.0	04:18:15.9	299.6	r	Sloan	1 x 1
230406	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.404	180.0	04:25:05.4	299.8	r	Sloan	1 x 1
230406	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.404	180.0	04:25:05.4	299.8	r	Sloan	1 x 1
230407	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.426	180.0	04:31:55.7	299.8	r	Sloan	1 x 1

230407	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.426	180.0	04:31:55.7	299.8	r	Sloan	1 x 1
230408	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.450	180.0	04:38:44.7	299.8	r	Sloan	1 x 1
230408	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.450	180.0	04:38:44.7	299.8	r	Sloan	1 x 1
230409	NGC 7789	23:57:30.81	+56:43:41.7	J2000.00	1.475	180.0	04:45:34.9	299.8	r	Sloan	1 x 1
230409	NGC 7789	23:57:30.81	+56:43:41.7	J2000.00	1.475	180.0	04:45:34.9	299.8	r	Sloan	1 x 1
230410	NGC 7789	23:57:30.80	+56:43:41.7	J2000.00	1.501	180.0	04:52:24.0	299.8	r	Sloan	1 x 1
230410	NGC 7789	23:57:30.80	+56:43:41.7	J2000.00	1.501	180.0	04:52:24.0	299.8	r	Sloan	1 x 1
230411	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.529	180.0	04:59:13.6	299.3	r	Sloan	1 x 1
230411	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.529	180.0	04:59:13.6	299.3	r	Sloan	1 x 1
230412	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.558	180.0	05:06:03.0	299.7	r	Sloan	1 x 1
230412	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.558	180.0	05:06:03.0	299.7	r	Sloan	1 x 1
230413	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.589	180.0	05:12:52.5	299.9	r	Sloan	1 x 1
230413	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.589	180.0	05:12:52.5	299.9	r	Sloan	1 x 1
230414	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.622	180.0	05:19:41.4	299.8	r	Sloan	1 x 1
230414	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.622	180.0	05:19:41.4	299.8	r	Sloan	1 x 1
230415	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.644	180.0	05:26:39.2	0.0	r	Sloan	1 x 1
230415	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.644	180.0	05:26:39.2	0.0	r	Sloan	1 x 1
230416	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.669	180.0	05:28:57.4	299.8	r	Sloan	1 x 1
230416	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.669	180.0	05:28:57.4	299.8	r	Sloan	1 x 1
230417	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.734	180.0	05:40:31.3	299.8	r	Sloan	1 x 1
230417	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.734	180.0	05:40:31.3	299.8	r	Sloan	1 x 1
230418	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.775	180.0	05:47:14.8	299.8	r	Sloan	1 x 1
230418	NGC 7789	23:57:30.81	+56:43:41.8	J2000.00	1.775	180.0	05:47:14.8	299.8	r	Sloan	1 x 1
230419	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.819	180.0	05:54:03.5	299.4	r	Sloan	1 x 1
230419	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.819	180.0	05:54:03.5	299.4	r	Sloan	1 x 1
230420	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.865	180.0	06:00:53.1	299.8	r	Sloan	1 x 1
230420	NGC 7789	23:57:30.80	+56:43:41.8	J2000.00	1.865	180.0	06:00:53.1	299.8	r	Sloan	1 x 1
230421	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.902	180.0	06:08:32.8	0.0	r	Sloan	1 x 1
230421	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.902	180.0	06:08:32.8	0.0	r	Sloan	1 x 1
230422	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.909	180.0	06:09:32.1	0.0	r	Sloan	1 x 1
230422	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.909	180.0	06:09:32.1	0.0	r	Sloan	1 x 1
230423	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.916	180.0	06:10:31.4	0.0	r	Sloan	1 x 1
230423	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.916	180.0	06:10:31.4	0.0	r	Sloan	1 x 1
230424	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.924	180.0	06:11:30.1	0.0	r	Sloan	1 x 1
230424	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.924	180.0	06:11:30.1	0.0	r	Sloan	1 x 1
230425	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.931	180.0	06:12:29.0	0.0	r	Sloan	1 x 1
230425	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.931	180.0	06:12:29.0	0.0	r	Sloan	1 x 1
230426	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.938	180.0	06:13:26.3	0.0	r	Sloan	1 x 1
230426	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.938	180.0	06:13:26.3	0.0	r	Sloan	1 x 1
230427	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.946	180.0	06:14:23.7	0.0	r	Sloan	1 x 1
230427	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.946	180.0	06:14:23.7	0.0	r	Sloan	1 x 1
230428	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.953	180.0	06:15:20.9	0.0	r	Sloan	1 x 1
230428	BIAS	23:57:30.81	+56:43:41.8	J2000.00	1.953	180.0	06:15:20.9	0.0	r	Sloan	1 x 1
230429	FLAT	23:57:30.80	+56:43:41.8	J2000.00	2.036	180.0	06:25:17.4	30.1	r	Sloan	1 x 1
230429	FLAT	23:57:30.80	+56:43:41.8	J2000.00	2.036	180.0	06:25:17.4	30.1	r	Sloan	1 x 1
230430	FLAT	23:57:32.02	+56:43:51.8	J2000.00	2.058	180.0	06:28:00.4	15.1	r	Sloan	1 x 1
230430	FLAT	23:57:32.02	+56:43:51.8	J2000.00	2.058	180.0	06:28:00.4	15.1	r	Sloan	1 x 1
230431	FLAT	4:25:46.00	+54:09:02.9	B1950.00	1.124	180.0	06:31:30.2	7.1	r	Sloan	1 x 1
230431	FLAT	4:25:46.00	+54:09:02.9	B1950.00	1.124	180.0	06:31:30.2	7.1	r	Sloan	1 x 1
230432	FLAT	4:25:48.27	+54:09:22.9	B1950.00	1.125	180.0	06:33:10.4	4.1	r	Sloan	1 x 1
230432	FLAT	4:25:48.27	+54:09:22.9	B1950.00	1.125	180.0	06:33:10.4	4.1	r	Sloan	1 x 1
230433	FLAT	4:25:49.41	+54:09:32.9	B1950.00	1.126	180.0	06:34:47.0	3.1	r	Sloan	1 x 1
230433	FLAT	4:25:49.41	+54:09:32.9	B1950.00	1.126	180.0	06:34:47.0	3.1	r	Sloan	1 x 1
230434	FLAT	4:25:50.55	+54:09:43.0	B1950.00	1.127	180.0	06:36:25.6	2.1	r	Sloan	1 x 1
230434	FLAT	4:25:50.55	+54:09:43.0	B1950.00	1.127	180.0	06:36:25.6	2.1	r	Sloan	1 x 1
230435	FLAT	4:25:51.69	+54:09:52.9	B1950.00	1.128	180.0	06:38:03.2	1.1	r	Sloan	1 x 1
230435	FLAT	4:25:51.69	+54:09:52.9	B1950.00	1.128	180.0	06:38:03.2	1.1	r	Sloan	1 x 1
230436	FLAT	4:25:52.83	+54:10:03.0	B1950.00	1.130	180.0	06:39:34.7	1.1	r	Sloan	1 x 1
230436	FLAT	4:25:52.83	+54:10:03.0	B1950.00	1.130	180.0	06:39:34.7	1.1	r	Sloan	1 x 1