

60 inch Telescope Log

Observer: P. BerlindPI: J. HuchraSpectrograph: FASTGrating: 300LDate: 1/2/95Page: 3412

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-4	DARK				15m	Mountain cloud cap
5-14	BIAS				0s	
15-24	FLAT				10s	300L, 3" slit
25	COMP				15s	test
26-28	HD12623	02:02:18.77	+62:56:03.8	0	5s, 15s	lots of local cloud
29	COMP			↑		
30-32	M31	00:40:00	+40:51:42	0	30s	
33	COMP			↑		
34-36	M32	00:39:58.2	+40:35:30	0	30s	
37	COMP			↑		
38	JBlue			13	15m	heavy cloud at time;
39	COMP			13	2m	stopped by cloud
40	FLAT			13	1m	close - fog
41	Hilt 102 JB			13	2m	
42	COMP			13	2m	
43	J0 Blue			13	15m	less cloud
44	J0 Red			13	5m	stopped by cloud
45	COMP			13	12s	
46	FLAT			13	30s	close again for cloud
47	J0 Red			13	15m	
48	Hilt 102 J0 Red			13		
49	COMP			13	12s	
50, 51	LG And	00:41:52.7	+40:24:22	12	1, 5s	Symbiotics
52	COMP			↑		300L, 3" backin
53, 55	AXP	01:33:06	+54:00:18	12	5, 30, 50	
56	COMP			↑		cloud...
57	NGC 1100	04:54:28.1	-04:56:30	0	5m	template gal clouds
58	COMP			↑		
59, 62	01563p OS10	01:56:18	+05:10:00	21	5m, 10m	x2
60	A01562p OS06	01:56:12	+05:06:00	21	10m	

60 inch Telescope Log

Observer: P. BerlindPI: KenyonSpectrograph: FASTGrating: 302Date: 1/2/95Page: 3413

Number	Object	R. A.	Dec.	L/R	Exp	Comments
61	COMP			↑		
63	0200Sp04W	02:W:30	+04:W:W	12	10m	H ₂
64	COMP			↑		
65	02000p03SS	02:W:W	+03:SS:W	12	10m	H ₂
66	COMP			9		
67	HBC352	03:51:20.2	+31:54:14	30	4m	Kenyon PMS
68	HBC353	03:51:20.8	+31:54:18	30	5m	
69	COMP			↑		
70	HBC351	03:49:02.7	+24:30:55	30	2m	
71	HBC355NW	03:51:35	+25:28:22	30	3m	image is the first 3m of the
72	HBC355NW	03:51:35	+25:28:22	30	4m	↑ northwest comp
73	HBC355SE	03:51:35	+25:28:22	30	3m	← southeast 2" sep
74						
75	U973TAU	04:11:07.3	+28:04:41	30	90s	
76	COMP			↑		
77	LKCa3	04:11:42.6	+28:45:05	30	4m	
78	LKCa4	04:13:22.4	+28:W:13	30	5m	
79	V410TAU	04:15:24.8	+28:20:02	30	2m	
80	Hubble 4	04:15:40.9	+28:12:51	30	4m	
81	COMP			↑		
82	HBC376	04:15:59.1	+17:16:01	30	5m	
83	COMP			↑		
84	BPTAU	04:16:08.1	+28:59:13	30	4m	
85	LKCa7	04:16:35.8	+27:42:28	30	4m	
86	RYTAU	04:18:50.9	+28:19:35	30	2m	
87	HD283572	04:18:52.5	+28:11:07	30	1m	
88	COMP			9		
89	Tau	04:19:04.2	+19:25:05	30	1m	
90	COMP			↑		
91	DFTAU	04:23:59.6	+25:35:42	30	4m	

60 inch Telescope Log

Observer: P. BarlindPI: KenyonSpectrograph: FASTGrating: 300L34Date: 1/2/95Page: 3414

Number	Object	R. A.	Dec.	L/R	Exp	Comments
92	DGTau	04:24:01.1	+25:29:36	30	4m	sparkling nebulosity
93	comp			↑		
94	H13C388	04:24:17.2	+17:44:03	30	1m	still a few clouds
95	DKTau	04:27:40.5	+25:51:59	30	4m	
96	JH56	04:28:09.1	+27:03:54	30	4m	
97	comp			↑		
98	H13C392	04:28:31.5	+17:00:02	30	4m	
99	L1551m51	04:29:15.6	+17:51:03	30	4m	
100	V827 Tau	04:29:20.4	+18:13:55	30	4m	
101	V826 Tau	04:29:22	+17:55:19	30	4m	
102	GG Tau	04:29:37.1	+17:25:22	30	4m	sat. H α
103	comp			↑		
104	V830 Tau	04:30:08.3	+24:27:27	30	25m	
105	GKTau	04:30:32.8	+24:14:52	30	4m	
106	GI Tau	04:30:32.3	+24:15:03	30	4m	
107	comp			↑		
108	H13C407	04:31:23.7	+18:23:55	30	4m	
109	GG Tau	04:29:37.1	+17:25:22	30	90s	also #102
110	comp			↑		
111	AATau	04:31:53.5	+24:22:44	30	4m	
112	DN Tau	04:32:25.7	+24:08:52	30	3m	
113	comp			↑		
114	HPTau G2	04:32:54.2	+22:48:09	30	1m	east comp $V=11.07$
115	HPTau	04:32:52.9	+22:48:18	30	5m	NW comp $V=13.4$
116	HPTau G3	04:32:53.5	+22:48:04	30	10m	
117	comp			↑		
118, 119	DRTau	04:44:13.2	+16:53:24	30	3m/1m	x 2 strong features
120	comp			↑		
121	DSTau	04:44:34.1	+29:19:56	30	3m	
122	DSTau B	04:44:34.1	+29:19:56	30	3m	2" NW of DSTau $V=13$

2015-H1

60 inch Telescope Log

Observer: P. BerlindPI: KenyonSpectrograph: FASTGrating: 300l, 3"Date: 12/95Page: 3415

Number	Object	R. A.	Dec.	L/R	Exp	Comments
123	COMP			↑		
124	UY Aur	04:48:35.7	+30:42:47	30	3m	mostly clear
125	COMP			↑		still a few thin cloud
126-7	BX Mon	07:22:54	-03:30:00	12	5s, 30s	
128	COMP			↑		
129-130	Hiltner 600	06:42:57.2	+62:11:25	12	15s, 30s	
131	313.025477	09:25:56.9	+27:40:27.5	3	5m	15R Survey ↓
132	COMP			↑		
133	313.025509	09:11:10.75	+27:42:47	3	5m	
134	COMP			↑		
135	313.025519	09:18:22.19	+27:42:33.9	3	5m	
136	COMP			↑		
137	313.026476	09:26:23.9	+27:43:52.7	3	10m	H/L
138	COMP			↑		
139	315-028427	09:27:03.01	+27:50:42.1	3	10m	clouds getting worse again
140	COMP			↑		needs more
141	08236 p0245EW	08:23:28	+02:45:10	1	15m	E+W Comps
142	COMP			↑		
143	08234 p0012	08:23:24	+02:12:10	1	5m	stopped by cloud
144	COMP			↑		needs more
145-148	HDS2971	06:57:51.14	+27:13:42.4	0	15s	
149	COMP			↑		
150-152	AGK2p14783	07:17:47.4	+14:59:37.7	0	60s	
153	COMP			↑		thick cloud
154-156	AGK2p43928	09:49:20.96	+09:49:20.96	0	30s	
157	COMP			↑		
158-161	N3031	09:51:20	+69:18:18	0	30s-5m	aka M81 nucleus
162	COMP			↑		
163-164	N4151	12:08	+35	6	5m	AGN
165	COMP			↑		

60 inch Telescope Log

Observer: P. BerlindPI: HuchraSpectrograph: FASTGrating: 3002Page: 3416Date: 1/2/95

Number	Object	R. A.	Dec.	L/R	Exp	Comments
166-167	F34			6	1m	
169	comp			↑		
169	SNR94ae	10:44:23	+17:32:18	2	30m	through cloud
170	comp			↑		
171-173	TXCVn	12:42:17.9	+37:02:14	12	5s-5m	
174	comp			↑		
175	UO5546	10:13:48	+55:04:W	1	5m	
176	comp			↑		clearing a little
177	UO5558	10:15:18	+46:13:W	1	5m	
178	10162p4605	10:16:12	+46:05:W	1	5m	H α
179	comp			↑		
180	10163p4922	10:16:18	+49:22:W	1	5m	
181	comp			↑		
182	10164p4440	10:16:24	+44:40:W	1	5m	
183	comp			↑		
184	10166p5540	10:16:36	+55:40:W	1	10m	still pretty murky out there
185	comp			↑		H α nice rotation curve
186	10172p5407	10:17:12	+54:07:W	1	5m	
187	comp			↑		
188	UO5594	10:18:54	+48:17:W	1	5m	
189	comp			↑		
190	U5065	10:19:42	+48:53:W	1	5m	
191	comp			↑		
192	10210p4506A	10:21:W	+45:06:W	1	5m	star to E on slit; strong H α
193	10210p4506B	10:21:W	+45:06:W	1	10m	↙ southwest "comp" H α
194	comp			↑		↘ see char +
195	10215p4705	10:21:30	+47:05:W	1	4m	
196	comp			↑		
197	10220p5219	10:22:W	+52:19:W	1	5m	H α
198	10240p5214	10:24:W	+52:14:W	1	5m	H α

60 inch Telescope Log

Observer: J. Peters / Staufffer
 PI: Huchra et al / McClintock

Spectrograph: FAST
 Grating: 300 / 1000
 Date: 1/6/85

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Number	Object	R A.	Dec.	L/R	Exp	Comments
1-15	Bias					Pre Eye Calibrations
16-30	FLAT				10 ^s	Lots Thin Clouds around!
31-34	Dark				15 ^m	
35	Comp	TEST	TEST		15 ^s	
36	everyky	STAU		0	2 ["]	
37	Comp ↑			↑	15 ^s	
38	Comp			↓	15 ^s	
39	HD 13623	02 02 18	62 56 08	0	2 ^s	
40	Comp			↓	15 ^s	
41	M31	00 40 00	40 59 42	0	1 ^m	
42	M31 SKY		20 MIN North	0	1 ^m	
43	Comp			↓	15 ^s	
44	M32	00 39 58	40 35 30	0	1 ^m	
45	Comp			↓	15 ^s	
46	158N213	00 40 30	40 50 55	0	10 ^m	
47	Comp			↓	15 ^s	
48	225N280	00 41 45	41 05 12	0	10 ^m	
49	Comp			↓	15 ^s	
50	163N217	00 40 33	41 11 20	0	10 ^m	
51	Comp			↓	15 ^s	
52	BDP26595	03 37 08	26 48 01	0	5 ^s	
53	JO-Blue	00 17 13	21 40 20	13	15 ^m	↙
54	Comp	Blue		↑	2 ^m	Jeff McClintock
55	FLATJOB	Blue		↓	1 ^m	DaJeff
56	HILT102 JO Blue	01 07 53	62 31 32	13	2 ^m	Bright Moon - Thin
57	Comp	Blue		↑	2 ^m	Clouds way off seeing 1 ["]
58	JO-Red	Red		13	15 ^m	
59	Comp	Red			12 ^s	
60	FLATJOB					
61	HILT102 JO Red				2 ^m	

60 inch Telescope Log

Observer: J. PetersPI: J. HuchraSpectrograph: FastGrating: 300Page: 3419Date: 1/6/95

Number	Object	R. A.	Dec.	L/R	Exp	Comments
62	Comp	Red		↑	12 ^s	Jeff Comp P
63	Bias	↑	↑	↑		Jeff
64	Bias	↑	↑	↑		Jeff
65	Comp	Stauffer		↓	12 ^s	→ J. Stauffer
66	The Tar Ori	05 32 49	-05 25 16	27	10 ^s	Stauffer
67	FLAT			27	45 ^s	Stauffer
68	Bias			27		Stauffer
69	Bias	Stauffer	↑	27		Stauffer
70	Comp			↓	15 ^s	
71	H215	04 37 56	08 35 00	0	5 ^m	
72	Comp			↓	15 ^s	
73	AKN120	05 13 37	-00 12 15	6	5 ^m	Thro Thro clouds seeing it
74	Comp			↓	15 ^s	
75	HD 52921	06 57 51	27 13 42	0	2 ^s	
76	Comp			↓	15 ^s	
77	472.023194	03 17 44	10 39 28	3	10 ^m	Looks like a star?
78	Comp			↓	15 ^s	
79	472.026183	03 26 11	10 99 06	3	12 ^m	
80	Comp			↓	15 ^s	
81	472.034660	03 19 42	11 17 19	3	10 ^m	
82	Comp			↓	15 ^s	
83	472.034970	03 27 44	11 17 39	3	6 ^m	
84	Comp			↓	15 ^s	
85	472.035488	08 09 53	11 19 22	3	6 ^m	
86	Comp			↓	15 ^s	
87	472.039541	03 29 25	11 30 50	3	10 ^m	
88	Comp			↓	15 ^s	
89	472.041668	03 27 56	11 37 18	3	6 ^m	
90	Comp			↓	15 ^s	
91	472.052222	03 28 13	12 07 44	3	8 ^m	

60 inch Telescope Log

Spectrograph: FASTObserver: J. PetersGrating: 300Page: 3420PI: J. Huchra et alDate: 1/6/95

Number	Object	R.A.	Dec.	L/R	Exp	Comments
92	Comp			↓	15 ^s	
93	472.054399	03 23 46	12 13 57	3	12 ^M	
94	Comp			↓	15 ^s	
95	472.055743	03 25 30	12 17 29	3	15 ^M	
96	Comp			↓	15 ^s	
97	472.057555	03 18 16	12 22 38	3	15 ^M	
98	Comp			↓	15 ^s	
99	SN 1994AK	09 14 01	40 06 22	2	60 ^M	
100	Comp			↓	15 ^s	
101	SN 1994AE	10 44 23	17 32 18	2	15 ^M	
102	Comp			↓	15 ^s	
103	AGK2P14783	07 17 47	14 59 37	0	10 ^s	
104	Comp			↓	15 ^s	
105	AGK2P43928	09 49 20	43 42 07	0	5 ^s	
106	Comp			↓	15 ^s	
107	311.000069	08 32 35	26 26 22	3	10 ^M	
108	Comp			↓	15 ^s	
109	311.000110	08 13 04	26 27 24	3	10 ^M	
110	Comp			↓	15 ^s	
111	311.002457	08 29 29	26 32 59	3	5 ^M	
112	Comp			↓	15 ^s	
113	311.003179	08 27 39	26 34 57	3	5 ^M	
114	Comp			↓	15 ^s	
115	311.003921	08 17 16	26 37 39	3	5 ^M	
116	Comp			↓	15 ^s	
117	311.005219	08 36 21	26 37 54	3	5 ^M	
118	Comp			↓	15 ^s	
119	311.006449	08 30 53	26 43 00	3	5 ^M	
120	Comp			↓	15 ^s	
121	311.011633	08 14 25	26 57 12	3	5 ^M	

60 inch Telescope Log

Observer: J. PetersPI: J. HuchraSpectrograph: FASTGrating: 300Page: 3421Date: 1/6/95

Number	Object	R. A.	Dec.	L/R	Exp	Comments
122	Comp			↓	15 ^s	
123	311.014836	08 34 31	27 03 11	3	5 ^m	
124	Comp			↓	15 ^s	
125	311.015446	08 19 24	27 07 23	3	5 ^m	? Near star
126	Comp			↓	15 ^s	
127	311.019836	08 36 04	27 15 34	3	5 ^m	
128	Comp			↓	15 ^s	
129	311.031532	08 10 16	27 46 17	3	5 ^m	
130	Comp			↓	15 ^s	
131	311.032019	08 27 08	27 48 37	3	5 ^m	
132	Comp			↓	15 ^s	
133	311.033831	08 30 02	27 52 41	3	7 ^m	
134	Comp			↓	15 ^s	
135	311.034796	08 20 20	27 56 17	3	7 ^m	
136	Comp			↓	15 ^s	
137	311.035762	08 34 12	27 56 08	3	5 ^m	
138	Comp			↓	15 ^s	
139	311.036740	08 27 58	28 00 20	3	5 ^m	
140	Comp			↓	15 ^s	
141	311.041246	08 35 35	28 09 14	3	5 ^m	
142	Comp			↓	15 ^s	
143	311.041798	08 11 54	28 12 11	3	5 ^m	
144	Comp			↓	15 ^s	
145	311.042306	08 26 35	28 14 13	3	7 ^m	
146	Comp			↓	15 ^s	
147	311.044912	08 18 17	28 20 55	3	5 ^m	
148	Comp			↓	15 ^s	
149	311.045221	08 21 49	28 21 51	3	5 ^m	
150	Comp			↓	15 ^s	
151	311.046710	08 12 33	28 24 22	3	5 ^m	

60 inch Telescope Log

Observer: P. BerlindPI: J. Huchra / KenyonSpectrograph: FASTGrating: 300L; 3" slitDate: 1/7/94Page: 3423

Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0s	lots of cirrus
11-20	FLAT				10s	FAST foc = 950
21-23	HD1744	00:47:05.3	+30:10:21	0	30s	60s cloud
24	COMP			↑		bright sky
25-27	HD12623	02:02:18.77	+62:56:03.8	0	60s, 30s	
28	COMP			↑		
29-31	V1329 Cyg	20:49:02.6	+35:23:37	12	20, 120, 480	through cloud 3" slit ↓
32	COMP			↑		
33-34	AG Peg	21:48:36.2	+12:23:27	12	5s, 30s	
35	COMP			↑		
36-38	Z And	23:31:15.3	+48:32:32	12	5, 30s	
39	COMP			↑		
40-41	HD217066	23:51:49	+62:27:35	12	60s	
42	COMP			↑		/ this is a star
43	A262m56	01:47:30.2	+37:33:21	25	5m	✓ K Band LF 2 MASS
44	COMP			↑		
45	A262m51	01:47:19.1	+37:42:38	25	10m	star?
46	COMP			↑		
47	A262m46	01:47:12.9	+33:43:43	25	5m	star
48	A262m44	01:47:11.5	+33:43:12	25	10m	
49	COMP			↑		
50	HX356	04:00:12.2	+28:44:45	30	5m	
51	COMP			↑		
52	CW Tau	04:11:11.3	+28:03:27	30	8m	
53	COMP			↑		
54	CX Tau	04:11:44	+26:40:42	30	8m	
55	COMP			↑		
56	LKCa5	04:14:32.6	+28:25:43	30	5m	
57	COMP			↑		
58	HX372	04:15:29.4	+16:51:30	30	8m	

Moon CD +6

60 inch Telescope Log

Observer: P. BerlindPI: KenyonSpectrograph: FASTGrating: 300RDate: 11/7/94Page: 3424

Number	Object	R. A.	Dec.	L/R	Exp	Comments
59	COMP			↑		bright sky; clouds
60	V819 Tau	04:16:19.9	+28:19:03	30	5m	
61	COMP			↑		
6264	DE Tau	04:16:49.8	+27:48:05	30	5m	60s X 2 sat HK
63	COMP			↑		
65	IP Tau	04:21:52.1	+27:05:08	30	5m	increasing cloud
66	COMP			↑		
67	Jm 4872	04:22:14	+26:11:02	30	5m	faint companion to SW
68	Jm 4872 b	04:22:10	+26:11:00	30	5m	garbage ←
69	COMP			↑		
70	DH Tau	04:26:37.1	+26:26:29	30	5m	NW Comp
71	DE Tau	04:26:38	+26:26:20	30	5m	SE Comp
72	COMP			↑		delay of dome
73	IQ Tau	04:26:47.7	+26:00:13	30	8m	
74	COMP			↑		
75	FX Tau	04:27:27.9	+21:20:18	30	10m	
76	COMP			↑		
77	V710 Tau N	04:29:03.6	+18:15:16	30	10m	north comp of close double
78	V710 Tau S	04:29:03.6	+18:15:15	30	15m	south comp; sep 1"
79	COMP			↑		
80	L1551 m 55	04:29:50	+17:56:40	30	10m	
81	COMP			↑		heavy cloud to W
82	GH Tau	04:30:04.8	+24:03:28	30	5m	cirro strat above
83	COMP			↑		
84	DL Tau	04:30:36	+25:14:24	30	8m	
85	COMP			↑		
86	CI Tau	04:30:52.2	+22:44:17	30	8m	
87	COMP			↑		
88	LK Ca 19	04:52:25.9	+30:13:11	30	3m	
89	COMP			↑		

60 inch Telescope Log

Observer: P. BerlindPI: Kenyon/Geller/HuchraSpectrograph: FASTGrating: 3002Date: 1/7/94Page: 3425

Number	Object	R. A.	Dec.	L/R	Exp	Comments
90	SUAar	04:52:47.8	+30:29:19	30	3m	
91	COMP			↑		clouds big time
92,93	RWAar A	05:04:37.6	+30:20:13	30	5m, 60s	↳ possible mis-id.
94	COMP			↑		only 1 star visible in field
95	LK Ca15	04:36:18.4	+22:15:13	30	3m	check field in good sky
96	COMP			↑		
97	IW Tau	04:38:0.9	+24:45:22	30	3m	
98	COMP			↑		
99-100	BIAS			-	0s	1.1" slit ↓
101-106	HD52971	06:57:51.14	+27:13:42.4	0	30s, 15s	
107	COMP			↑	20s	Moon is down
108-112	AGK2 p14783	07:17:47.36	+14:59:37.7	0	30s, 90s	
113	COMP			↑	20s	
114	NGC1700	04:54:28.1	-04:56:30	0	5m	a hole !! ??
115	COMP			↑	20s	
116	311.055992	08:30:50.34	+28:34:35.1	3	7m	3" slit ↓
117	COMP			↑		
118	311.051886	08:15:18.72	+28:37:35.9	3	7m	Hk
119	COMP			↑		
120,121	313.030640	09:00:21.87	+27:58:47.3	3	7m, 15m	x2 Hk
122	COMP			↑		
123	313.030303	09:08:28.81	+27:59:25.8	3	5m	
124	COMP			↑		
125	313.028578	09:11:56.17	+27:53:55.5	3	5m	Hk
126	COMP			↑		
127	313.628427	09:27:03.01	+27:50:42.4	3	7m	also observed 1/2/95
128	COMP			↑		Southern Abell Clusters ↓
129	A3392A	06:25:20.2	-35:27:20	99	5m	star on slit 6" W of gal.
130	COMP			↑		
131	A3392D	06:25:30.2	-35:28:21	99	10m	

60 inch Telescope Log

Observer: P. BerlindPI: GellerSpectrograph: FASTGrating: 300LDate: 1/7/54Page: 3426

Number	Object	R. A.	Dec.	L/R	Exp	Comments
132	COMP			↑		thin cloud ↓
133	A 3392 C	06:25:38.6	-35:33:20	99	5m	
134	COMP			91		
135	313.032356	09:19:22.76	+28:06:50.2	3	10m	
136	COMP			↑		
137	313.032578	09:08:31.64	+28:07:45.2	3	5m	
138	COMP			↑		
139	313.031957	09:21:40.19	+28:06:57.3	3	5m	
140	COMP			↑		
141, 143	313.031577	09:17:15.18	+28:05:32	3	5m,	10m x 2
142, 144	COMP			9		
145	313.030967	09:20:17.07	+28:01:41.8	3	10m	Hx
146	COMP			↑		
147	313.033066	09:08:30.18	+28:09:40.1	3	5m	
148	COMP			9		clouds! uck!
149, 151	313.033320	09:05:29.63	+28:10:01.3	3	5m,	10m x 2
150, 152	COMP			↑		
153	313.033504	09:20:18.92	+28:10:50.1	3	7m	9002
154	COMP			9		
155	313.034853	09:08:23.22	+28:16:06	3	7m	15475
156	COMP			↑		same object done twice
157	313.034853	09:08:23.22	+28:16:06	3	7m	NECUSE visitors mess confusion
158	COMP			↑		15462
159	313.036312	09:15:18.85	+28:18:51.8	3	10m	Hx 15474
160	COMP			↑		
161	313.037342	09:26:34.3	+28:22:36.4	3	10m	Hx 10675
162	COMP			↑		thin cloud
163	313.035514	09:15:18.55	+28:18:51.8	3	10m	
164	COMP			↑		
165	313.038568	09:21:52.93	+28:28:41.9	3	7m	

60 inch Telescope Log

Observer: P. BerlindPI: Huchra/KenyonSpectrograph: FASTGrating: 300LDate: 11/195Page: 3427

Number	Object	R. A.	Dec.	L/R	Exp	Comments
166	COMP			↑		thin cloud ↓
167	SN1994AK	09:14:047	+40:06:21.5	2	30m	
168	COMP			↑		
169	11136 p0051	11:13:36	+W:51:W	1	5m	H ₂
170	COMP			↑		
171	11160 p0042	11:16:00	+00:42:W	1	5m	H ₂
172	COMP			↑		
173	U06329	11:16:24	+W:27:W	1	10m	H ₂
174	COMP			↑		
175	11182 p0051	11:18:12	+W:51:W	1	7m	H ₂
176	COMP			↑		
177	11184 p011N	11:18:24	+W:11:W	1	7m	H ₂
178	11184 p011S	11:18:24	+W:11:W	1	10m	H ₂
179	COMP			↑		
180	11184 p027	11:18:24	+W:27:W	1	5m	H ₂
181	COMP			↑		
182	NGC4125sn	12:05:35	+65:27:W	2	5m	SN candidate - nope
183	COMP			↑		for PetC.
184	11185 p0048	11:18:30	+W:48:W	1	5m	H ₂
185	COMP			↑		
186-188	AG Dra	16:01:23.2	+66:56:25	12	5s, 30s, 3s	
189	COMP			↑		
190	TCB	15:57:24	+26:03:36	12	30s	
191	COMP			↑		
192-194	RW Hya	13:31:32	-25:07:29	12	5s, 2s, 30s	
195	COMP			↑		
196	H243	13:14:00	+29:21:49	12	60s	
197	COMP			↑		
198	H214	13:21:19.1	+36:23:38	12	2m	
199	COMP			↑		

H243

60 inch Telescope Log

Observer: J. Peters

PI: J. Huchra et. al

Spectrograph: FAST

Grating: 300

Date: 1/3/95

Page: 3452

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-15	Bias					
16-30	FLAT	300L/μm	3" SLIT		10 ^s	Looks like overscan Top of Flats. Called Test.
31-34	DARK				15 ^m	
35	FLAT	TEST			10 ^s	Turned off CCD in Dome
36	FLAT	Birby 1	TEST		10 ^s	Then Fifo. Fifo on then
37	COMP			↓	15 ^s	CCD Power
38	HD 51971	06 57 51	27 13 42	0	2 ^s	overscan? Top CCD??
39	HD 51971	"	"	0	2 ^s	
40	HD 51971	"	"	0	2 ^s	Cloudy
41	HD 51971	"	"	0	2 ^s	
42	HD 51971	"	"	0	2 ^s	At Pix 80 qfast
43	Dome	TEST	TEST	TEST	5 ^s	Lights on in Dome ≈ 5" exp.
						No Darks, Bias, or Flats Run After This Due To Problem with CCD.
						No Archive Tape Made No Real Data Here

60 inch Telescope Log

Observer: HUCHRAPI: HUCHRA + tSpectrograph: FASTGrating: 300RPage: 3454Date: 1/26/95

Number	Object	R. A.	Dec.	L/R	Exp	Comments
1	heNew					
2-16	FLAT					
17-19	DARK					
20-29	BIAS					
30	Comp			↓		
31	40 52 971	06 ^h 57 51	+27 13 42	0	25	Template turned from slit - K2 III ^{did not} _{performed}
32	40 52 971			0	25	moved to 30
33	Comp			↑		
34	Comp			↓		
35	AGK2 +43928	09 49 20	+43 42 07	0	75	Temp. K0 III
36	AGK2 p 43928	"	"	0	75	↑ ^{Bad file} _{name}
37	Comp			↓		
38	08243 p 0012	08 ^h 24 18	+00° 12	1	600S	
39	Comp			↓		
40	08252 p 0449	08 ^h 25 12	+04 49	1	600S	Thin
41	08252 p 0449	"	"	1	600S	
42	Comp			↕		
43	08 252 p 0508	08 ^h 25 12	+05° 08	1	240S	Star on slit to W
44	08 252 p 0508	"	"	1	240S	(W = lower columns)
45	Comp			↓		
46	311. 0525 75	08 ^h 28 55	+28 38 57	3	360S	H α ~ 7000 Å
47	Comp			↓		
48	311. 054155	08 36 49	+28 40 06	3	480S	
49	Comp			↓		
50	311. 056626	08 24 38	+28° 49 14	3	600S	edge on spiral
51	Comp			↓		
52	311. 102330	08 31 59.9	+30 39 29	3	420	
53	311. 102330	"	"	3	420	
54	Comp			↓		
55	314. 000556	09 44 56.9	+26 17 01	3	360	

Note file 35 lost - Bad IRAF Name

60 inch Telescope Log

Observer: HUCHRAPI: HUCHRA + GELBERSpectrograph: FASTGrating: 3002Date: 1/26/95Page: 3455

Number	Object	R. A.	Dec.	L/R	Exp	Comments
56	comp			↕		
57	314.000558	09 ^h 43 ^m 43.0	+26 17 02	3	480	
58	comp			↕		
59	314.000206	09 ^h 37 23	+26 16 27	3	480	
60	comp			↕		
61	314.002116	09 32 28.8	+26 22 39	3	360	
62	comp			↓		
63	314.001990	09 ^h 53 13.3	+26 19 42	3	200	prob a star. - STAR
64	comp			↓		
65	314.002548	09 28 06.6	-26 23 00	3	300	
66	comp			↓		
67	314.002443	09 39 47.8	+26 24 16	3	480	H α at 6855
68	comp			↓		
69	EG 67	09 43 29	+44 08 35	0	30 _s	STD STAR DA
70	comp			↕		
71	AGK2 p 43928	09 49 20	+43 42 07	0	7s	Template KO III
72	comp			↓		
73	09539 p 4713	09 ^h 53 54	+47 13 00	1	420s	H α
74	comp			↓		
75	09472 p 5231	09 47 12	+52 31 00	1	360	
76	09472 p 5231	"	"	1	240	
77	comp			↕		
78	09502 p 5239	09 ^h 50 12	+52 39	1	300	
79	comp			↓		
80	10486 p 0708	10 ^h 48 36	+67° 08	1	420	superposed star - dis it out?
81	comp			↕		
82	10499 p 0810 SW	10 49 54	+08 10	1	600	SW comp. prob emission
83	comp			↕		
84	11016 p 0720	11 ^h 01 36	+07° 20	1	300	
85	comp			↕		

60 inch Telescope Log

Observer: J. HUCHRAPI: J. HUCHRASpectrograph: FASTGrating: 300RDate: 1/26/1995Page: 3456

Number	Object	R. A.	Dec.	L/R	Exp	Comments
86	11020 p0640	11 ^h 02 00.0	+06° 40	1	480	low sb Hd
87	comp			↓		
88	11032 p0658S	11 ^h 03 12	+06 58	1	600	S comp.
89	11032 p0658N	"	"	1	600	N comp Hd
90	comp			↑		
91	comp			↓		
92	Faye 34	10 ^h 30 41	+43 21 50	0	600	STD STAR
93	comp			↓		
94	N4151	12 08 01	+39 41 02	6	600	
95	comp			↓		
96	N4486 B	12 28 00	+12 45 59	0	3000	Template
97	N4486 B	"	"	0	3000	"
98	comp			↑		
99	comp			↓		
100	SouK	12 22 59	+21 05 26	32	3000	Carbon X for P. Green
101	comp			↓		
102	11494 p4709	11 ^h 49 24	+47° 09	1	3000	
103	comp			↓		
104	11531 p4934	11 ^h 53 06	+49° 34	1	360	
105	comp			↓		
106	N4258	12 ^h 16 29.4	+47° 35 00	1	240	not centered
107	N4258			1	240	centered on 80
108	comp			↓		
109	A 3551 E	13 15 22	-30 40 04	9	600	pretty poor star on slit -10 higher #'s
110	comp			↓		
111	N5548	14 15 43	+25 22 01	6	900	AGN
112	H244	13 21 19	+36 23 38	0	60	STD STAR
113	comp			↑		
114-123	BIAS			-	-	
124-133	FLAT			15	150	

↑ Note file 35 lost

60 inch Telescope Log

Observer: HUCKRAPI: HUCKRA & GELVERSpectrograph: FASTGrating: 300 μ /mmPage: 3457Date: 1/27/95

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS			-	-	
11-15	DARK			-	900s	
16-30	FLAT			-	15s	
31	sky			-	10s	
32	sky			-	120s	
33	HENEAR			\updownarrow		
34	sky			-	300s	
35	comp			\uparrow		files 33+35 are at diff settings
36	α Cet	0302 02	+0404 20	0	1s	M 1.5 IIIa $V = -25.8$
37	comp			\uparrow		Template
38	225-280	00 41 45.1	+46 05 01	0	300s	Template
39	comp			\uparrow		
40	comp			\downarrow		
41	A262n45	01 ^h 45 10.1	+38 ^o 08 57	25	420s	
42	comp			\updownarrow		
43	A262 n58	01 ^h 45 56.5	+38 ^o 00 15	25	480	only 1 object in sky 3/1/44
44	A262 n58	01 45 56.5	+38 00 15	25	300	Find only 1 object in sky
45	comp			\updownarrow		template
46	A262 n 61	01 46 10.8	+38 11 38	25	600	Needs more H α
47	A262 n 61	"	"	25	600	H α
48	comp			\updownarrow		
49	A262 n 63	01 ^h 46 19	+38 07 17	25	600	weak but usable
50	comp			\updownarrow		
51	A262n 64	01 40 23	+38 13 50	25	600	
52	comp			\updownarrow		
53	A262n 78	01 47 05	+38 06 14	25	600	H α
54	comp			\updownarrow		
55	A262 n55	01 45 48	+38 24 45	25	480	Star?
56	comp			\downarrow		
57	471.028637	02 56 34	+10 55 51	3	480	

4344 = sum of 43+44

60 inch Telescope Log

Observer: HUCHRAPI: HUCHRA/GELLERSpectrograph: FASTGrating: 300 l/mmPage: 3458Date: 1/27/95

Number	Object	R. A.	Dec.	L/R	Exp	Comments
58	Comp			↓		
59	471.050609	02 ^h 47 02	+11 47 52	3	300	
60	Comp			↓		
61	471.058780	02 49 39	+12° 07 18	3	600	
62	Comp			↓		
63	471.093837	02 59 14.9	+13° 27 10	3		x=1.48
64	Comp			↓		
65	473.670628	03 41 57	+13 17 31	3	600	
66	Comp			↓		
67	473.070841	03 47 37	+13 17 42	3	360	H ₂
68	473.673982	03 55 35.8	+13 24 42	3	300	
69	Comp			↑		H ₂
70	Comp			↓		
71	08295 p 0348	08 29 30	+03 48	1	300	H ₂
72	0833.5 p 0130	08 33 30	+01 30	1	300	
72	Comp			↓		
74	Comp			↓		
75	08344 p 0158	08 34 24	+01 58	1	240	
76	Comp			↓		
77	08363 p 0334 W	08 36 18	+03 34	1	420	W int = bright comp H ₂
78	08363 p 0334 E	"	"	1	600	E comp H ₂
79	Comp			↓		
80	08485 +0515	08 ^m 48 30	+05 15	1	300	H ₂
81	Comp			↓		
82	I 24 20	08 48 54	+03 16	1	240	
83	08497 p 0607	08 49 42	+06 07	1	480	H ₂
84	Comp			↓		
85	08515 p 0710	08 ^h 51 30	+07° 10	1	300	H ₂
86	08528 p 0747	08 52 48	+07 47	1	230	
87	Comp			↓		

60 inch Telescope Log

Observer: HUCHRAPI: HUCHRASpectrograph: FASTGrating: 3002Page: 3459Date: 1/27/95

Number	Object	R. A.	Dec.	L/R	Exp	Comments
88	08529 p0651	08 ^h 52 54	+06° 51	1	360	H ₂
89	08530 p0510	08 ^h 53 00	+05 10	1	180	
90	Comp			↓		
91	08533 p0356	08 53 18	+03 56	1	420	H ₂
92	Comp			↓		
93	08552 p0756	08 55 12	+07° 56	1	480	H ₂
94	08575 p0755	08 ^h 57 30	+07° 55	1	300	Weak H ₂ ?
95	Comp			↓		
96	08585 p0618	08 58 30	+06° 18	1	240	
97	08588 p0713	08 58 48	+07 13	1	480	Star near cd 60 - extend
98	08588 p0713NE	"	"	1	300	← Kinor to NE pass H ₂
99	Comp			↓		
100	08595 p0340 E	08 59 30	+03° 40	1	360	E comp, star on slit H ₂ !
101	08595 p0340 W			1	300	W comp
102	Comp			↓		
103	08596 p0321	08 59 36	+03 21	1	480	
104	08598 p0334	08 ^h 59 48	+03 34	1	↓80	
105	Comp			↑		
106	Comp			↓		
107	09406 p0039	09 40 36	+00° 39	1	240	H ₂
108	Comp			↓		
109	10286 m0310	10 ^h 28 36	-03 10	1	360	H ₂
110	Comp			↓		
111	10248 p0130	10 ^h 24 48	+01° 30	1	240	H ₂
112	10249 p0131 S	10 24 54	+01 31	1	240	S comp
113	10249 p0131 N	"	"	1	180	N comp
114	Comp			↑		
115	Comp			↓		
116	N3115	10 ^h 02 44.4	-07° 28 30	0	180s	Template comp 15/?
117	Comp			↑		

#100 - worried about γ gal

60 inch Telescope Log

Observer: HUCHNAPI: HUCHNA / GELERSpectrograph: FASTGrating: 300RPage: 3460Date: 1/27/95

Number	Object	R. A.	Dec.	L/R	Exp	Comments
118	Comp			↓		
119	AGH2 p 43928	09 49 20	+43 42 07	0	50	Template
120	Comp			↓		
121	Feige 34	10 36 41.1	+43 21 50	0	50s	STD
122	Comp			↓		
123	Mark 421	11 01 40.6	+38 28 43	6	240	for Trevor
124	Comp			↓		
125	314.003043	09 36 32	+26 26 14	3	300	
126	314.003566	09 39 07	+26 28 10	3	360	weak, poss H α
127	comp			↑		
128	314.003685	09 36 48	+26 28 31	3	400	H α
129	Comp			↓		clouds in.
130	314.003668	09 27 41	+26 27 02	3	600	H α
131	Comp			↓		clouds - honeycombing
132	314.003638	09 54 07	+26 25 03	3	480	H α
133	Comp			↑		
134	314.004739	09 53 18.2	+26 29 13	3	200	
135	314.009815	09 51 18.5	+26 49 17	3	600	clouds, poor seeing H α
136	Comp			↑		
137	Comp			↓		
138	N 4151	12 08 01	+39 41 02	6	60	A6N
139	EG 184	11 34 27	+30 04 35	0	100	STD STR
140	Comp			↑		
141	Comp			↓		
142	N 4486 B	12 ^h 28 00	+12° 45'	0	300s	Template comp 1/14/95
143	Comp			↑		
144	Comp			↓		
145	RX 1236 p 0051 B	12 36 32	+00 51 50	1	720	Rosati. x-ray
146	RX 1236 p 0051 B			1	720	clouds!
147	Comp			↑		

60 inch Telescope Log

Observer: HUCMAN

PI: HUCMAN / GIERER

Spectrograph: FAST

Grating: 300

Page: 3461

Date: 1/27/95

Number	Object	R.A.	Dec.	L/R	Exp	Comments
148	comp			↓		clouds
149	14328 p 0040	14 ^h 32 48	+00° 40	1	480	Strong H α
150	14329 p 0632	14 32 54	+00 32	1	420	AAW 453? yes - H α !
151	comp			↑		
152	comp			↓		
153	12595 p 0633	12 59 28	+06 33	5	360	
154	12544 p 0825	12 54 24	+08 25	5	600	needs more
155	comp			↓		- clouds
156	12544 p 0825	1254 24	+08 25	5	600	lots of clouds
157	comp.			↑		
158	comp			↓		Thick clouds.
159	N5548	14 15 43	+25 22	6	360	NUL Photometric
160-169	BIAS			-	-	STOPPED FOR CLOUDS!
170-180	FLAT			-	15s	
180	BIAS			-	-	
Nothing was seen tonight. (1/27/95) STOP						

60 inch Telescope Log

Observer: HUCHRAPI: HUCHRA / GEUERSpectrograph: FASTGrating: 300 2/mmPage: 3462Date: 1/28/95

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-5	BIAS			-		
6-9	DARK			-	900	
10-13	BIAS			-		
14	Comp			↓	15s	Identified
15	sky			0	120s	Zenith TEST
16	sky			0	300s	"
17-31	FLAT			-	15s	
32-36	BIAS			-	-	
37	COMP			↓		
38	M32	00 ^h 39 58	+40 35 30	0	180s	Gal Template
39	Comp			↓		L
40	225-280	00 41 45	+41 05 01	0	300s	Template
41	Comp			↓		1594.31 1599.57
42	163-217	00 40 33.3	+41° 11 02	0	400s	935.0 939.4 FWHM ~4.5 μ Template
43	COMP			↑		
44	Comp			↓		
45	HD 12623	02 02 18	+62 56 03	0	2s	Template
46	Comp			↓		
47	A262 n 3	01 ^h 45 11	+36 44 12	25	600	H α
48	Comp			↑		
49	A262 n 50	01 47 18	+36 57 36	25	300] Scans blowing up
50	A262 n 50	"	"	25	300	
51	Comp			↓		
52	A262 n 10	01 45 45	+35 01 31	25	480	
53	Comp			↓		
54	A262 n 32	01 46 40	+34 55 48	25	600	
55	U01277	01 46 30	+35 12 16	1	180s	UGC
56	Comp			↓		
57	01521 p 3511	01 52 01.5	+35 10 32	1	200s	= Mh 1010 = AKN 62
58	A262 n 4	01 45 15.5	+35 18 23	25	600	

60 inch Telescope Log

Observer: HUCHRA

PI: HUCHRA / GELLER

Spectrograph: FAST

Grating: 300

Date: 1/28/95

Page: 3463

Number	Object	R.A.	Dec.	L/R	Exp	Comments
59	comp			↓		
60	A262 n 9	01 ^h 45 ^m 37.3	+35 ^o 26 56	25	600	
61	BITS			0		
62	comp			↓		
63	N 669	01 44 18	+35 ^o 18	1	200s	Redshift redo
64	A262 n 38	01 46 57	+35 45 35	25	600s	
65	comp			↓		
66	A262 n 39	01 ^h 47 01.0	+35 ^o 50 43	25	360	stellar weak H α
67	comp			↓		
68	A262 n 47	01 ^h 47 14.4	+35 48 23	25	600	
69	comp			↓		
70	A262 n 52	01 47 21.4	+35 58 56	25	600	← bright G γ in slit also -10 th #2
71	comp			8		
72	A262 n 79	01 48 00.7	+35 53 53	25	480	
73	A262 n 79			25	300	clouds?
74	comp			↓		
75	A262 n 82	01 48 01.8	+34 20 52	25	600	
76	comp			↓		
77	HZ 15	04 37 55.1	+08 34 50	0	60s	STRID STAR
78	comp			↓		
79	AKN 120	05 13 37.9	-00 12 16	6	300 s	AKN
80	comp			↓		
81	HD 52971	06 57 57	+27 13 42	0	2s	K2 III Template - Average/sum comparisons
82	HD 52971	"	"	0	4s	
83	HD 52971	"	"	0	4s	
84	HD 52971	"	"	0	4s	
85	HD 52971	"	"	0	4s	
86	comp			↑		
87	comp			↓		
88	AS 80 A	07 ^h 25 57.5	+41 ^o 23 10	9	480	

60 inch Telescope Log

Observer: HUCHRAPI: HUCHRA/GELLERSpectrograph: FASTGrating: 300LPage: 3464Date: 1/28/95

Number	Object	R. A.	Dec.	L/R	Exp	Comments
89	AS80 E	07 ^h 26 02.4	+41 ^o 23 50	9	720	weak, may be enough.
90	Comp			↑		
91	Comp			↓		
92	311.061787	08 12 9.9	+29 20 56	3	420	
93	311.063773	08 17 32.7	+29 06 47	3	360	
94	Comp			↕		
95	311.067110	08 27 59	+29 14 33	3	360	
96	311.066917	08 29 48	+29 13 40	3	360	
97	Comp			↕		
98	311.069128	08 19 06.2	+29 20 10	3	300	
99	311.073906	08 28 48.2	+29 30 50	3	300	
100	Comp			↓		
101	311.080917	08 ^h 31 09.9	+29 47 39	3	360	
102	Comp			↓		
103	311.078962	08 10 01.3	+29 42 26	3	360	
104	311.074151	08 09 36.3	+29 30 18	3	300	
105	Comp			↓		
106	311.081167	08 15 29.6	+29 49 16	3	300	
107	311.082045	08 24 22.6	+29 51 49	3	300	
108	Comp			↕		
109	311.082345	08 ^h 33 56.2	+29 50 26	3	200	
110	Comp			↓		
111	HB89N090 p285	09 01 30.6	+28 31 31	31	600	Q to higherths, Comp to lower
112	HB89N091 p285	"	"	31	600	
113	Comp			↑		
114	Feige 34	10 36 41.1	+43 21 50	0	30s	Left = East 90 = pinel
115	Feige 34			0	30s	Right = West 70 = pinel.
116	Comp			↑		
117	HB 89 n 0804 p 499	08 ^h 04 58.4	+49 59 23	31	200s	Comparison on slit, Q ₅₀ find + to lower marks
118	Comp			↑		

60 inch Telescope Log

Observer: HUCHRAPI: HUCHRA/GELLERSpectrograph: FASTGrating: 300Page: 3465Date: 1/28/95

Number	Object	R. A.	Dec.	L/R	Exp	Comments
119	Comp			↓		
120	311.082668	08 ^h 24 57.7	+29 53 20	3	300	
121	311.085085	08 24 43.5	+29 59 22	3	200	Sy 2
122	comp			↕		
123	311.085346	08 29 37.6	+29 59 10	3	240	
124	311.087437	08 77 58	+29 04 54	3	240	
125	Comp			↕		
126	311.089482	08 ^h 28 51.8	+30 09 18	3	240	
127	311.089904	08 26 32.1	+30 10 50	3	300	
128	Comp			↕		
129	311.091594	08 ^h 33 30.6	+30 13 18	3	420	
130	311.091764	08 34 54.9	+30 13 12	3	360	
131	Comp			↕		
132	311.092422	08 34 14.2	+30 14 57	3	240	H _α
133	Comp			↓		
134	N3115	10 ^h 02 44.4	-07°28 30	0	180	Galaxy Template
135	Comp			↓		
136	N4486 B	12 28 00 0	+12 45 59	0	300	Galaxy Template
137	Comp			↓		
138	11300M0151	11 ^h 29 55.9	-01°51 18	5	300	
139	11302 m 0027	11 30 11.8	-00 27 53	5	600	low sb. H _α ~ 6710
140	Comp			↕		
141	11309 m 0206	11 ^h 30 51.9	-02 06 18	5	600	low sb. photo H _α
142	11309 m 0206	"	"	5	600	
143	Q1319 p 0102	11 ^h 31 52	+01 01 52	5	600	H _α double - order on slit too!
144	Comp			↕		
145	11321 p 0025	11 32 05.3	+00 24 04	5	600	H _α at 6750
146	Comp			↕		
147	11322 m 0317	11 32 06.9	-03 17 42	5	420	
148	11323 m 0303	11 32 18	-03°03	5	360	Wrong object marked on chart. H _α

60 inch Telescope Log

Observer: HUCHRAPI: HUCHRA/BEUERSpectrograph: FASTGrating: 300Page: 3466Date: 1/28/95

Number	Object	R. A.	Dec.	L/R	Exp	Comments
149	COMP			↓		
150	11328 M0229	11 ^h 32 44.9	-02 29 51	5	480	H ₂
151	11334 p 0000	11 33 23.7	+00 00 12	5	300	the strong. starburst
152	COMP			↓		
153	11336 m 0249	11 ^h 33 31.1	-02 49 29	5	240	H ₂
154	11337 m0235	11 33 40.5	-02 35 38	5	240	H ₂
155	COMP			↓		
156	11338 m0234	11 33 45	-02 34 14	5	240	
157	11339 m0232	11 33 49	-02 32 52	5	480	H ₂
158	COMP			↓		
159	11340 M0238	11 ^h 34 01	-02 38 06	5	300	+ Companion star to E
160	11346 p0225	11 34 36.9	+02 24 12	5	480	Need to separate.
161	COMP			↑		H ₂ in B band
162	12542 p0804	12 ^h 54 12	+08° 04	5	600	H ₂ ~6890
163	COMP			↓		
164	1254 companion	"	"	5	420	Supernovae?
165	N4151	12 ^h 08 01	+39 41 02	6	305	AGN
166	COMP			↑		
167	COMP			↓		
168	N5548	14 ^h 15 43	+25 22	6	1205	AGN
169	Ferguson 98	14 36 04	+27 42	0	505	STD STAR ~ Clouds!
170	SA063275 AB	12 58 34	+38 16 42	1	25	E COMP
171	SA063275 AB			1	25	W COMP
172	COMP			↑		DOME DIED!
173-182	BIAS			-	-	
183-192	FLAT			-	155	
193-197	BIAS			-	-	
198-201	DARK			0	9005	

198-201 NOT included in archive!

↓

→ Susan - Chip binning set to 1
for first 1/2 of the night.
←
great


60 inch Telescope Log
 Observer: P. Berlind
 PI: McClintock / Huchra
 Spectrograph: FAST
 Grating: 300L, 3" slit
 Date: 1/29/95
 Page: 3467

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0s	Cirrus
11-20	FLAT				10s	
21-29	FOCUS					0-150 = chip
30-33	HD1744	00:47:06.3	+30:10.21	0	5s	150-244 = bias over scan
34	comp			↑		↳ tests to align tv; chip
35	test			13	1m	binning
36-43	SS0019p21			13	15m x 2	1200L; 2" slit. Blue/Red
39, 44	Hiltner 102			13	2m, 2m	thin cloud
46-47	BIAS			↑	0s	
48	A262n148	01:50:02.3	+35:15:01	25	10m	300L; 3" slit ↓
49	A262n168	01:50:35.9	+35:06:00	25	10m	A262 K Band LF
50	COMP			↑		J1950 clouds ↓
51	A262n150	01:50:07.7	+36:20:42	25	10m	H _α
52	A262n200	01:51:35.3	+36:29:00	25	15m	
53	COMP			↑		
54	A262n206	01:51:45.5	+36:42:39	25	10m	H _α
55	COMP			↑		
56	A262n217	01:52:00.5	+36:29:37	25	10m	
57	A262n219	01:52:01.1	+36:31:04	25	10m	needs more
58	COMP			↑		still cloudy
59	02283p0338	02:28:18	+03:38:00	21	10m	Rich Groups H _α
60	COMP			↑		
61	02323m0100	02:32:18	-01:00:00	21	4m	
62	COMP			↑		
63/65	02335p0134	02:33:30	+01:34:00	21	5m, 10m x 2	
64	COMP			↑		no comp ⇒ redo!
66	A3372A	05:54:02.2	-31:40:39	99	10m	Southern Abell J1950 H _α
67	BIAS	binby 2	again	↑		clouded out of the south
68	311.092264	08:12:03.66	+30:15:49.2	3	10m	J2000 ISR Survey
69	COMP					

14
78
92 x 2 = 94

60 inch Telescope Log

Observer: P. BerlindPI: GellerSpectrograph: FASTGrating: 3002; 3"Date: 1/29/95Page: 3468

Number	Object	R. A.	Dec.	L/R	Exp	Comments
70	311.092493	06:09:27.8	+30:15:39	3	10m	
71	comp			↑		
72	A3392E	06:25:03.2	-35:20:24	99	7m	cloud; poor seeing
73	comp			↑		stopped by cloud
74	311.094896	06:28:23.78	+30:22:49.2	3	10m	needs more
75	comp			↑		↑↑ clouds
76-77	V836 Tau	05:10:02.2	+25:19:07	30	1m, 3m	PMS no chart H _α
78	comp			↑		
79, 80	GMAw	04:51:59.8	+30:17:15	30	1m, 10m	no chart  H _α
81	comp			↑		
82-87	HD 52971	06:57:51.14	+27:13:42.4	0	10s	
88	comp			↑		
89-94	HD 52971	"	"	0	3s	
95	comp			↑		
96-100	HD 52971	"	"	0	1s	
101-103	AGK2p14783	07:17:47.36	+14:59:57	0	20s	RT Crash
104	comp			↑		
105-108	AGK2p14783	"	"	0	5s	
109	comp			↑		
110-113	AGK2p14783	"	"	0	1s	
114	comp			↑		
115	311.094896	06:28:23.78	+30:22:49.2	3	10m	
116	comp			↑		
117	311.096686	06:28:05.72	+30:27:05.7	3	10m	
118	comp			↑		
119	311.096718	06:28:05.72	+30:27:05.7	3	7m	
120	comp			↑		
121	311.099733	06:29:52.66	+30:33:53.2	3	7m	weak H _α
122	comp			↑		
123	311.105761	06:29:59.19	+30:43:38.6	3	10m	

60 inch Telescope Log

Observer: P. BerlindPI: GellerSpectrograph: FASTGrating: 3002Date: 1/29/95Page: 3469

Number	Object	R. A.	Dec.	L/R	Exp	Comments
124	COMP			↑		
125	311.104262	08:26:51.34	+30:45:30.4	3	10m	Hx
126	COMP			↑		
127	311.105636	08:32:07.54	+30:47:34	3	7m	
128	COMP			↑		
129	311.106988	08:32:39.96	+30:50:39.4	3	10m	Hx
130	COMP			↑		
131	311.107625	08:34:46.5	+30:51:25.6	3	7m	Hx
132	COMP			↑		
133	311.108099	08:36:48.64	+30:51:42.6	3	5m	
134	COMP			↑		
135	311.108589	08:26:03.57	+30:56:01.9	3	10m	
136	COMP			↑		
137,9	311.109575	08:09:25.3	+30:56:51.5	3	4m	, 5m x 2
138	COMP			↑		
140	311.109586	08:29:10.36	+30:57:54.8	3	5m	
141	COMP			↑		
142	311.111472	08:29:59.89	+31:02:06.3	3	10m	
143	COMP			↑		
144	313.039254	09:02:10.02	+28:30:41.3	3	10m	
145	COMP			↑		more clouds
146,148	313.039466	09:09:44.23	+28:32:46.5	3	10m	x 2
147,149	COMP			↑		
150,152	1043200217	10:43:12	+02:17:60	1	10m	Hx x 2 clouds
151,153	COMP			↑		
154	N4151	12:08	+39	6	30s	
155	COMP			↑		highly irregular clouds
156	N5548	14:15	+25	6	2m	
157	COMP			↑		
158	HZ43	13:14	+29:21	6	5m	

60 inch Telescope Log

Observer: P. BerlindPI: HuchaSpectrograph: FASTGrating: 300RDate: 11/29/75Page: 3470

Number	Object	R. A.	Dec.	L/R	Exp	Comments
159	COMP			↑		heavy cloud
160	N4486B	12:08:W	+12:45:59	0	7m	seeing 2-3"4
161	COMP			↑		
162, 164	1110 Sp 0520	11:10:30	+05:20:00	1	10y12m	H _α x2
163, 165	COMP			↑		
166	1110 Sp 0530	11:10:30	+05:30:W	1	10m	H _α
167	COMP			↑		
168	5535.0068	12:47:41.3	-07:23:47	1	7m	SSRS.2. H _α strong!
169	COMP			↑		
170	5535.0272	12:52:54	-07:31:25	1	7m	H _α
171	COMP			↑		
172	5535.0381	12:51:15.6	-07:37:45	1	10m	H _α
173	COMP			↑		
174	5535.0428	12:53:0.8	-07:40:10	1	10m	H _α
175	COMP			↑		
176	5535.0600	12:53:06.4	-08:49:11	1	5m	
177	COMP			↑		
178	5535.0603	12:51:19.7	-08:50:51	1	5m	
179	COMP			↑		
180	5535.0605N	12:50:59.9	-08:22:04	1	3m	North Comp
181	5535.0605S	12:50:59.9	-08:22:04	1	4m	South
182	COMP			↑		
183	5535.0638	12:51:43.6	-08:50:47	1	4m	
184	COMP			↑		
185	5535.0741	12:51:19.7	-08:56:07	1	7m	weak features near mid
186	COMP			↑		
187	5535.1271	12:46:53	-08:34:42	1	7m	
188	COMP			↑		
189	5536.0172	12:58:01.4	-07:32:32	1	7m	star to W on slit
190	COMP			↑		

60 inch Telescope Log

Observer: P. BerlindPI: J HuchraSpectrograph: FASTGrating: 300L; 3" slitPage: 3472Date: 1/30/95

Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-10	BTA5				05	circus to west
11-20	FLAT				10s	
21	COMP				-	test
22-26	HD12623	02:02:18	+62:56:03	0	2s, 5s	very rough seeing!
27	COMP			↑		
28-30	M32	00:39:58.2	+40:35:30	0	60s	
31	COMP			↑		
32	Z25m280	00:41:45.1	+41:05:01	0	10m	
33	COMP			↑		
34	163m217	00:40:33.3	+41:11:02	0	10m	
35	COMP			↑		
36	A262n219	01:52:01.1	+36:31:04	25	15m	also obs 1/29/95
37	COMP			↑		
38	A262n177	01:50:52.7	+37:43:32	25	10m	H _α
39	COMP			↑		
40, 42	A262n199	01:51:33.2	+37:47:18	25	10m	x2
41, 43	COMP			↑		
44, 46	A262n213	01:51:56.8	+33:51:18	25	10m	x2
45, 47	COMP			↑		
49	HBC358p9	04:00:46.9	+26:02:42	30	10m	HBC 358 and HBC 359
50	COMP			↑		
51	CXTau	04:14:27.7	+28:13:29	30	3m	
52	COMP			↑		
53, 54	DDTau	04:15:25.1	+28:09:15	30	3m, 6m + 2	to get 4226(z)
55	CZTau	04:15:25.6	+28:09:44	30	5m	
56	COMP			↑		dome locked up - 1/2 hr
57	A3372mA	05:54:02.2	-34:40:39	99	5m	it is out of round!
58	COMP			↑		
59	A3372mC	05:53:30.4	-34:42:20	99	10m	
60	COMP			↑		

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60 inch Telescope Log

Observer: P. BerlindPI: J Huchra & GellerSpectrograph: FASTGrating: 300LDate: 1/30/95Page: 3473

Number	Object	R.A.	Dec.	L/R	Exp	Comments
61	A3372mB	05:54:03.7	-34:43:43	99	15m	FAINT!
62	COMP			↑		
63	A3372mF	05:53:53.7	-34:43:50	99	10m	also obs 12/27/94
64	COMP			↑		
65	A3392mE	06:25:03.2	-35:20:24	99	10m	also obs 1/29/95
66	COMP			↑		
67	A3392mF	06:25:55.6	-35:26:04	99	10m	could use more
68	COMP			↑		
69	A3392mG	06:25:46.4	-35:25:29	99	10m	star to E on slit
70	COMP			↑		
71	311.111743	08:35:10.7	+31:02:18.8	3	7m	ISR ↓
72	COMP			↑		
73	311.112213	08:29:14.01	+31:04:10.2	3	5m	a few clouds around
74	COMP			↑		
75	311.113228	08:35:40.63	+31:04:28.7	3	7m	
76	COMP			↑		
77	311.114098	08:10:54.92	+31:07:58.2	3	5m	
78	COMP			↑		
79	311.114818	08:31:18.68	+31:09:43.9	3	5m	
80	COMP			↑		
81	311.118242	08:27:17.77	+31:19:10.2	3	10m	
82	COMP			↑		
83	311.119975	08:12:06.97	+31:22:29.7	3	5m	
84	COMP			↑		
85	311.120903	08:33:19.06	+31:23:58.3	3	5m	HL
86	COMP			↑		
87	311.124142	08:15:45.26	+31:33:40.4	3	5m	
88	COMP			↑		
89	311.128489	08:29:47.9	+31:43:50.1	3	5m	
90	COMP			↑		

60 inch Telescope Log

Observer: P. BerlindPI: Geller/KirshnerSpectrograph: FASTGrating: 3002Date: 1/30/95Page: 3474

Number	Object	R.A.	Dec.	L/R	Exp	Comments
91	311.128582	08:35:12.31	+31:42:13.8	3	5m	
92	COMP			↑		
93	311.129966	08:34:02.46	+31:46:18	3	5m	
94	COMP			↑		
95	311.136385	08:22:38.27	+32:05:49.7	3	5m	
96	COMP			↑		
97	311.137917	08:27:34.48	+32:09:07	3	5m	str to W
98	COMP			↑		
99	311.140181	08:32:18.15	+32:14:14.3	3	5m	
100	COMP			↑		
101	311.141566	08:24:39.86	+32:19:31.4	3	5m	
102	COMP			↑		
103	311.145500	08:25:03.5	+32:30:06	3	5m	
104	COMP			↑		
105	311.147051	08:28:45.85	+32:33:22.3	3	5m	
106	COMP			↑		
107	311.148205	08:28:36	+32:36:30.2	3	7m	
108	COMP			↑		
109	311.149054	08:25:51.23	+32:39:51.4	3	5m	
110	COMP			↑		
111	313.044015	09:28:59.09	+28:45:23.9	3	10m	H α @ pixel 2051
112	COMP			↑		
113,115	313.064551	09:27:57.8	+30:0:37.8	3	5m, 7m	x2 #115 is best
114,116	COMP			↑		
117	313.064474	09:01:15.88	+30:01:28.1	3	7m	
118	COMP			↑		
119	SN1994ae	10:44:23	+17:32:18	2	15m	
120	COMP			↑		
121	F34	10:36:41.1	+13:21:50	2	1m	
122	COMP			↑		

60 inch Telescope Log

Observer: P BerlinclPI: HuchraSpectrograph: FASTGrating: 300L, 3" slitDate: 1/30/95Page: 3475

Number	Object	R.A.	Dec.	L/R	Exp	Comments
123	A1216C	11:17:40	-04:36:07	9	7m	~ J1995.1 H α
124	COMP			↑		
125	A1216B	11:17:20	-04:30:08	9	7m	J1995.1
126	COMP			↑		
127	10413 p0213	10:41:18	+02:13:W	1	15m	LSB H α @ pix 2121
128	COMP			↑		v \approx 5778 km/s
129	10566 p0128	10:56:36	+01:28:W	1	5m	H α
130	10568 p0127	10:56:48	+01:27:W	1	3m	
131	COMP			↑		
132	11054 p0117	11:05:24	+02:17:W	1	7m	H α
133	COMP			↑		
134	11061 p0209	11:06:06	+02:09:W	1	4m	H α
135	COMP			↑		
136	11082 p0130	11:08:12	+01:30:W	1	3m	
137	11084 p0122	11:08:24	+01:22:W	1	7m	H α @ 2050
138	COMP			↑		
139	11100 p0143	11:10:W	+01:43:18	1	5m	
140	COMP			↑		
141	11105 p0016	11:10:30	+01:16:W	1	3m	
142	COMP			↑		
143	Mark421	11:01:40.6	+38:28:43	99	5m	For Trevor Weekes
144	COMP			↑		
145	11349 m0034	11:34:53.79	-0:34:11.55	5	5m	3C 273
146	COMP			↑		
147	11351 m0032	11:35:5.471	-00:32:17.66	5	10m	Very strong H α etc!
148	COMP			↑		
149	11360 p0528	11:36:W	+05:28:W	5	7m	
150	COMP			↑		
151	11360 p0714	11:36:04.976	+07:13:51.35	5	5m	H α
152	COMP			↑		

60 inch Telescope Log

Observer: P. BarlingPI: Huchra/GellerSpectrograph: FASTGrating: 300Date: 11/30/95Page: 3476

Number	Object	R.A.	Dec.	L/R	Exp	Comments
153	11390p0220	11:37:1.5	+2:19:29	S	10m	LSB Hk
154	COMP			↑		
155	11372m0136	11:37:12	-1:35:53	S	5m	Hk
156	COMP			↑		
157	11374m0314	11:37:20.1	-03:14:29	S	4m	
158	COMP			↑		
159	11381p0714	11:38:08	+07:14:03	S	17m	
160	COMP			↑		
161	11385p0146	11:38:30	+01:46:14	S	4m	Hk
162	COMP			↑		
163	11388p0259	11:38:50	+02:59:25	S	5m	
164	COMP			↑		
165	11400m0159	11:39:57.3	-01:58:27	S	4m	
166	COMP			↑		
167	11389m0213	11:39:52.9	-02:13:10	S	4m	
168	COMP			↑		
169	11395p0756	11:39:29	+7:55:45	S	4m	
170	COMP			↑		
171	11402m0205	11:40:09.417	-02:05:01.9	S	5m	Hk
172	COMP			↑		
173	U08143	12:59:30	+54:39:00	1	5m	
174	COMP			↑		
175	13023p5537	13:02:18	+55:37:00	1	4m	
176	COMP			↑		
177	13029p5356	13:02:54	+53:55:00	1	3m	
178	I 847	13:03:24	+53:57:00	1	3m	
179	N4967	13:03:30	+53:50:00	1	3m	
180	N4973	13:03:48	+53:56:00	1	3m	
181	COMP			↑		
182	N4486B	12:28:00	+1245:59	0	5m	

60 inch Telescope Log

Observer: P. BerlindPI: Huchra / KenyonSpectrograph: FASTGrating: 3000Date: 1/31/95Page: 3478

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BTAS				0s	clear!
11-20	FLAT				10s	
21-25	sky				10s	NO COMPS!!
26-35	FLATS			12	5s	5" slit ↓
36-40	ZAnd	23:31:15.3	+48:32:32	12	60s, 5s, 3s	photometric
41	COMP			↑	8s	twilight fading
42-45	HD217086	23:54:49	+62:27:35	12	30s, 5s	
46	COMP			↑	8s	
47-50	EGAnd	00:41:52.7	+40:21:22	12	15s, 5s	
51	COMP			↑	8s	
52-55	AX Per	01:33:06	+54:00:18	12	3s, 30s	
56	COMP			↑	8s	
57	158m213	01:40:30.2	+40:50:55	0	7m	std 3" slit ↓
58	COMP			↑		
59	A262n151	01:50:07.9	+35:36:19	25	10m	star to W
60	COMP			↑		
61	A262n192	01:51:11.5	+35:36:36	25	2m	→ star ←
62	A262n195	01:51:19.8	+35:46:50	25	10m	
63	COMP			↑		
64	A262n210	01:51:54.6	+35:42:50	25	7m	Hk
65	COMP			↑		
66	A262n224	01:52:04.2	+35:34:53	25	10m	Hk
67	COMP			↑		
68, 70	A262n187	01:51:02.7	+33:47:17	25	10m	x2
69, 71	COMP			↑		
72	A262n208	01:51:51.2	+33:46:13	25	10m	
73	COMP			↑		
74	A262m226	01:52:07.8	+33:51:27	25	1m	star
75	A262n25	01:46:24.4	+34:21:08	25	4m	very stellar
76	A262n42	01:47:05.9	+34:07:28	25	7m	star to E

50 inch Telescope Log

Observer: P. BerlindPI: Huchra/GellerSpectrograph: FASTGrating: 300LDate: 11/31/95Page: 3479

Number	Object	R.A.	Dec.	L/R	Exp	Comments
77	COMP			↑		
78	A262n93	01:48:28	+34:28:27	25	10m	
79	COMP			↑		
80	A0536D	05:07:42	-09:20:33	9	15m	J today star too
81	COMP			↑		also obs 2/14/94
82	A3356A	05:33:20.6	-38:10:24	9	5m	done / has problems
83	COMP			↑		short delay
84	A3356B	05:33:27	-38:08:25	9	5m	
85	COMP			↑		
86	A3356C	05:33:12	-38:11:54	9	7m	
87	COMP			↑		
88	A3356D	05:33:32.8	-38:05:50	9	10m	
89	COMP			↑		
90	A3379A	06:04:35	-42:16:55	9	4m	
91	COMP			↑		
92	A3379B	06:04:29.4	-42:13:44	9	10m	
93	COMP			↑		
94	A3379C	06:04:58.7	-42:17:12	9	5m	
95	COMP			↑		
96	313.064785	09:03:44.1	+30:03:13.6	3	7m	
97	COMP			↑		
98	313.065065	09:05:51.88	+30:04:30.4	3	7m	H _α
99	COMP			↑		
100	BIAS			-	0s	
101	313.065436	09:18:19.85	+30:06:23.7	3	5m	
102	COMP			↑		
103	313.065487	09:24:10.68	+30:05:19.2	3	7m	
104	COMP			↑		
105	313.066873	09:29:07.53	+30:08:28.1	3	10m	H _α et al
106	COMP			↑		

10 inch Telescope Log

Observer: P. Berlind

PI: Geller / Kirshner

Spectrograph: FAST

Grating: 3002

Date: 11/31/95

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Number	Object	R. A.	Dec.	L/R	Exp	Comments
107	313.066878	09:14:55.04	+30:12:06.9	3	7m	
108	COMP			↑		
109	313.066935	09:25:4.39	+30:10:22.6	3	10m	
110	COMP			↑		
111	313.067631	09:28:01.3	+30:11:52.8	3	7m	
112	COMP			↑		
113	313.068782	09:15:29.37	+30:18:53	3	10m	1st Hdt
114	COMP			↑		
115	313.070388	09:18:37.1	+30:24:21.6	3	10m	
116	COMP			↑		
117	313.070405	09:18:20.22	+30:24:14.8	3	7m	
118	COMP			↑		
119	F34	10:36:41.1	+43:21:50	2	1m	
120	COMP			↑		400 1000
121,123,125	SN1993J	09:51:19.3	+69:15:25.7	2	30m	x 3 as per Pete C. request
124,124,126	COMP			↑		
127	F34	10:36	+43:21	2	1m	
128	COMP			↑		
129	316.000448	10:36:18.77	+26:04:41.3	3	3m	star
130	COMP			↑		
131	316.000997	10:20:47.45	+26:06:43.9	3	3m	
132	COMP			↑		
133	316.001890	10:23:43.67	+26:10:58.1	3	4m	
134	COMP			↑		
135	316.03486	10:43:32.83	+26:15:22.7	3	5m	
136	COMP			↑		
137	316.003551	10:23:12.17	+26:18:06.3	3	5m	
138	COMP			↑		
139	316.006516	10:27:17.32	+26:31:59.6	3	5m	Hdt
140	COMP			↑		

60 inch Telescope Log

Observer: P. BerlindPI: GellerSpectrograph: FASTGrating: 300Date: 1/31/75Page: 3481

Number	Object	R. A.	Dec.	L/R	Exp	Comments
141	316.006818	10:42:15.31	+26:31:22.8	3	5m	H α
142	COMP			↑		
143	316.007338	10:36:12.67	+26:31:58.1	3	5m	
144	COMP			↑		
145	316.008264	10:32:38.12	+26:39:47.6	3	5m	
146	COMP			↑		
147	316.009503	10:38:08	+26:44:21	3	5m	
148	COMP			↑		
149	N4414xx	12:53	+36	99	3m	possible SN candidate number
150	11128p0023N	11:12:48	+00:23:W	1	15m	H α it's a star ↑
151	COMP			↑		
152	11128p0023S	"	"	1	10m	H α
153	COMP			↑		
154	U06284EW	11:13:12	+01:08:W	1	7m	H α E+W cumps
155	COMP			↑		Wcomp is a star
156	11213p0200	11:21:18	+02:W:W	1	10m	H α
157	COMP			↑		
158	11250p0400	11:25:W	+04:W:W	1	5m	
159	COMP			↑		
160	11257p0109	11:25:42	+01:09:W	1	5m	H α
161	COMP			↑		
162	Mark421	11:01:40.6	+38:28:43	1	5m	for treur
163	COMP			↑		
164	12527p0300	12:52:42.9	+W:31:02	5	5m	
165	COMP			↑		
166	12538p0743	12:53:48.4	+7:42:56	5	3m	star(s) ✓
167, 169	12560p0158	12:56:02.8	+01:58:33.75	10m	10m	X2 H α ~ p122048
168, 170	COMP			↑		
171	12574p0519	12:57:24	+05:19:W	5	10m	
172	COMP			↑		

10 inch Telescope Log

Observer: P. Berlind

PI: Geller

Spectrograph: FAST

Grating: 300

Date: 11/31/95

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
173	12596p0322	12:59:37	+03:22:31	S	5m	H ₂
174	COMP			T		
175	12594p0322W	12:59:24	+03:22:W	S	15m	H ₂
176	COMP			↑		
177	12594p0752	12:59:24	+07:52:W	S	7m	
178	COMP			↑		
179	13020p0815N	13:02:W	+08:15:W	S	7m	
180	COMP			↑		
181	13056p5333	13:05:30	+53:33:W	T	4m	H ₂
182	COMP			↑		
183	N4987	13:05:48	+52:12:W	I	3m	
184	COMP			↑		
185	N4486B	12:28	H2	O	5m	
186	COMP			↑		
187	N4151	12:08	+39	G	30s	
188	COMP			↑		
189	N5548	14:15	+25:22	G	2m	
190	COMP			↑		
191-2	H243	13:14	+29:21	G	20s, 1m	
193	COMP			↑		
194-203	FLAT				10s	
204-213	BFAS				0s	
214	Beings					
214-217	DARKS					