

60 inch Telescope Log
 Observer: CALKINS
 PI: All, Kitchner, Barton
 Spectrograph: FAST
 Grating: 300 Line
 Date: Sept 9, 1998
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-34	Engineering Files					
35-39	DARKS				15m	Binby 4
40-49	BIAS				0s	
50-59	FLAT				6s	
60-69	BIAS				0s	Binby 2
70-79	FLAT				12s	
	Overcast + drizzle @ sunset					
80-84	DARKS				15m	Binby 4
	clouds moving east					
85	HD192281	20 12	40 16	#52	4s	
86	comp			↑		
87	BDP284211	21 51	28 51	#52	30s	Binby 2
88	comp			↑		
89	sn1998dh	23 14	04 32	#2	15m	(sn1998co not visible)
90	comp			↑		
91	sn1998dk	00 14	-00 42	#2	20m	(sn1998de not visible)
92	comp			↑		
93	sn1998dm	01 26	-06 06	#2	20m	
94	comp			↑		
95	sn1998dl	02 46	-07 34	#2	20m	close to moon (bad exposure!!)
96	comp			↑		
97	seq1-001	00 05	05 12	#73	6m	Binby 4
98	comp			↑		
99	seq1-002	00 05	05 13	#73	6m	
100	comp			↑		
101	seq1-005	00 07	47 00	#73	6m	
102	comp			↑		

60 inch Telescope Log

Observer: CALKINS

PI: BARTON

Spectrograph: FAST

Grating: 300L

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
103	soqal-006	00 07	46 59	π 73	7m	
104	comp			↑		
105	soqal-009	00 14	48 14	π 73	6m	central object
106	comp			↑		
107	soqal-010	00 14	48 15	π 73	6m	
108	comp			↑		
109	soqal-011	00 18	30 04	π 73	4m	
110	comp			↑		
111	soqal-012	00 18	30 04	π 73	5m	
112	comp			↑		
113	soqal-013	00 18	30 04	π 73	4m	
114	comp			↑		
115	soqal-014	00 18	30 02	π 73	5m	
116	comp			↑		
117	soqal-015	00 18	30 02	π 73	8m	star to east
118	comp			↑		
119	soqal-022	00 24	22 23	π 73	10m	120 - unnaid nothing on slit
120	comp	unnaid		↑		(looks like a bias frame)
121	BIAS					
<p>Lost TGS window about 40 min before sunrise, unable to get it back</p>						<p>119 - labeled COMP - comp E object on it</p>

60 inch Telescope Log

Spectrograph: FAST

Observer: CALKINS

Grating: 300L

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PI: All, Kirshner

Date: 9/10/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	Binby 4
11-20	BIAS				0s	
21-30	FLAT				6s	
31-40	BIAS				0s	Binby 2.
41-50	FLAT				12s	clouds @ sunset
51	HD192281	20 12	40 16	#56	9s	Binby 4
52	comp			↑		
53	SBS1425p606	14 26	60 25	#6	12m	
54	comp			↑		
55	N5548	14 18	25 07	#6	4m	Hunting for holes!
56	comp			↑		
57	MRK 509	20 44	-10 45	#6	4m	
58	comp			↑		
59, 60	CIC 19	19 50	35 41	#12	4,40s	
61	comp			↑		
62, 63	AG Peg	21 51	12 37	#12	1, 12s	
64	comp			↑		
65	3C390.3	17 41	79 45	#6	11m	
66	comp			↑		
67	MRK 501	16 53	39 45	#6	10m	In "out" of clouds
68	comp			↑		shut for clouds
						clouds blowing out!
69	sn1998 dm	01 26	-06 06	#2	20m	Binby 2
70	comp			↑		
71	sn1998 dk	00 14	-00 42	#2	10m	shortened exposure for clouds
72	comp			↑		
73	Feige 110	23 19	-05 09	#56	3s	

60 Inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>6486</u>
Observer: <u>CALKINS</u>				Grating: <u>300L</u>		Date: <u>9/10/98</u>
PI: <u>Kirshner, Hudra, Barton</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
74	comp			↑		
75	215235906.7p	23 59	28 00	#68	20m	Binby 4
76	comp			↑		
						clouds return
						hole?
77	sqgal-023	00 22	22 23	#73	8m	
78	comp			↑		
79	sqgal-030	00 32	07 13	#73	12m	
80	comp			↑		
						clouds again!
81	sqgal-031	00 33	07 18	#73	15m	
82	comp			↑		
83	sqgal-032	00 33	07 15	#73	12m	
84	comp			↑		
						clouds!
85-89	sky			#56	2s	Binby 4
90-99	BIAS				0s	
100-109	FLAT				6s	
110-119	BIAS				0s	Binby 2
120-129	FLAT				12s	
130-139	DARK				15m	
140-141	BIAS					
142-143	FLAT					

No COMP FOR SKY

60 inch Telescope Log

Observer: CALKINS

PI: All Rines, Kenyon, McClintock

Spectrograph: FAST

Grating: 3001

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Date: 9/11/98

Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	Bimby 4
11-20	BIAS				0s	
21-30	FLAT				6s	
31-40	BIAS				0s	Bimby 2.
41-50	FLAT				12s	
						clouds + drizzle at sunset
51	PG1708, 602	17 09	60 10	#56	5m	Bimby 4
52	comp			↑		
53	α2199.1	16 07	42 53	#64	15m	
54	comp			↑		
55	α2199.6	16 08	36 05	#64	15m	star to east
56	comp			↑		
57	α2199.2	16 07	38 58	#64	5m	99) to west
58	comp			↑		
59	α2199.3	16 08	43 00	#64	15m	
60	comp			↑		
61	α2199.4	16 08	43 09	#64	10m	
62	comp			↑		clouds returning
						shut for clouds
63, 64	AG Peg	21 51	12 57	#12	30, 90s	thru clouds
65	comp			↑		
66, 67	CICyg	19 50	35 41	#12	5, 60s	
68	comp			↑		
69, 70	ε And	23 13	48 48	#12	5, 60s	
71	comp			↑		
72	comp			↓		1.1" slit

60 inch Telescope Log
 Observer: CALKINS
 PI: McClintock, Huebra
 Spectrograph: FAST
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
75, 74	4W1907p09	19 09	09 49	#77	15m	
75	comp			↑		
76, 77	HD230579	19 04	11 07	#77	10, 20s	
78	comp			↑		
79	2M235841.8p	23 58	27 07	#68	20m	3" slit
80	comp			↑		
81	2M230723.1p	23 07	29 23	#68	15m	
82	comp			↑		
83	2M234213.6p	23 42	26 55	#68	10m	
84	comp			↑		
* 85	2M235910.9p	23 59	26 01	#68	10m	object to the west Sy (possible sn?)
86	comp			↑		
87	2M13053.6p	23 05	29 55	#68	10m	star east
88	comp			↑		
89	2M235924.4p	23 59	25 36	#68	15m	
90	comp			↑		
91	2M234154.1p	23 41	27 42	#68	5m	
92	comp			↑		
93	2M234152.6p	23 41	27 07	#68	15m	
94	comp			↑		
95	2M234128.5p	23 41	27 48	#68	12m	
96	comp			↑		
97	2M234159.6p	23 41	26 47	#68	10m	Binby 2 - object east
98	comp			↑		
99	2M234226.3p	23 42	25 41	#68	10m	Binby 4
100	comp			↑		
101	2M234230.7p	23 42	26 40	#68	10m	
102	comp			↑		
103	2M234126.2p	23 41	26 54	#68	12m	

85- object to W is star

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>6493</u>	
Observer: <u>PB</u>			Grating: <u>200</u>			
PI: <u>Huchra et al</u>			Date: <u>9/12/98</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
111	ZM202457.1	20:21	+18:59	68	10m	bin by Z . ^{original}
112	COMP			↑		Star to W
113	ZM203600.0	20:36	+23:57	68	8m	
114	COMP			↑		
115	ZM205840.4	20:58	+13:44	68	15m	bin by Z * to E
116	COMP			↑		
117	ZM205748.2	20:57	+13:49	68	8m	
118	COMP			↑		
119	Fergel 10	23:17	-05:26	56	2m	
120	COMP			↑		
121	BDP284211	21:48	+28:37	56	30s	
123	COMP			↑		
124	ZM205419.9	20:54	+20:57	68	12m	
125	COMP			↑		
126	ZM202657p122	20:26	+16:22	68	12m	
127	COMP			↑		
128	ZM2021139.1	20:41	+20:52	68	6m	*'s to E
129	COMP			↑		
130	ZM03754.1	20:37	+23:22	68	8m	
131	COMP			↑		
132	ZM0205318.8	20:53	+22:30	68	8m	
133	COMP			↑		
134	ZM205719.3	20:57	+11:52	68	8m	
135	COMP			↑		
136	SN 1998 dk	00:44	-60:44	2	15m	good one!
137	COMP			↑		
138	Soga 1-282	23:20	+08:09	73	10m	
139	COMP			↑		
140	Soga 1-283	23:20	+08:12	73	4m	
141	COMP			↑		

60 inch Telescope Log

Observer: PB

PI: Bartley Kirshner

Spectrograph: FAST

Grating: 300

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
142	soga1-298	23:41	-01:20	73	14m	bright moon
143	WMP			↑		~
144	soga1-299	23:41	-01:21	73	10m	
145	WMP			↑		
146	SN1998dm	01:26	-06:06	2	15m	
147	WMP			↑		
148	soga1-306	23:53	+07:52	73	7m	
149	WMP			↑		
150	soga1-307	23:53	+07:52	73	6m	
151	WMP			↑		
152	soga1-293	23:38	+27:01	73	6m	
153	WMP			↑		
154	soga1-295	23:38	+27:02	73	8m	
155	WMP			↑		
156	SN1998dt	02:28	+0:32	2	20m	faint
157	WMP			↑		
158	SN1998dl	02:46	-07:31	2	20m	
159	WMP			↑		
160	soga1-069	01:16	+33:05	73	12m	wow.
161	WMP			↑		
162	soga1-067	01:16	+33:03	73	12m	
163	WMP			↑		
164	soga1-074	01:21	+33:39	73	12m	* +06
165	WMP			↑		
166	soga1-075	01:21	+33:31	73	8m	
167	WMP			↑		
168	158m213	00:40	+44:50	57	4m	
169	WMP			↑		
170-171	G19102D	05:01	+52:45	66	2m	
172	WMP			↑		

60 inch Telescope Log

Observer: PB
PI: Scott

Spectrograph: FAST
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
173-174	BGGem	06:03	47:41	12	2m3m	6" 6" sep.
175	WMP			8		
176-178	HD12623	02:02	-62:56	57	5s	some thin clouds at dawn
179	WMP			8		
180-189	BIAS				0s	
190-199	FLAT				6s	
200-209	BIAS				0s	
210-219	FLAT				12s	
220-229	DARK					

60 inch Telescope Log

Observer: Pberlin
 PI: Huchra

Spectrograph: FAST
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	MARK					
11-20	BV15					clearing
21-30	FLAT					
31-40	BV15					
41-50	FLAT					
51-52	BDp332642	15:50	+33:26	56	1m	probs @ 48", no skies
53	COMP			↑		
54	2M15152.3	15:01	+17:42	68	4m	
55	COMP			↑		
56	2M155602.5	15:56	+26:23	68	3m	
57	COMP			↑		
58	2M150426.4	15:04	+23:24	68	4m	
59	COMP			↑		
60	2M150823.9	15:08	+20:20	68	3m	
61	COMP			↑		
62	2M152041.7	15:20	+25:40	68	3m	
63	COMP			↑		
64	2M151755.6	15:17	+20:09	68	3m	
65	COMP			↑		
66	2M151951.3	15:19	+21:10	68	3m	
67	COMP			↑		
68	2M154407.7	15:44	+22:44	68	3m	
69	COMP			↑		
70	2M153134.7	15:31	+25:14	68	3m	
71	COMP			↑		
72	2M154450.2	15:44	+22:51	68	5m	
73	COMP			↑		
74	2M150818.9	15:08	+20:25	68	3m	
75	COMP			↑		

60 inch Telescope Log

Observer: PB
 PI: Huchra

Spectrograph: FAST
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
76	ZM151751.1	15:17	+20:50	68	4m	
77	COMP			↑		windy, seeing 2"
78	ZM152624.3	15:26	+20:40	68	3m	
79	COMP			↑		
80	ZM155852.7	15:58	+20:26	68	4m	
81	COMP			↑		
82	A224818	16:58	+77:08	68	20m	
83	COMP			↑		
84	SNUGL11149	18:11	+49:51	2	2m	I
85	COMP			↑		
86	ZM2004130.2	20:41	+13:04	68	4m	
87	COMP			↑		
88	ZM202626.2	20:26	+15:01	68	3m	
89	COMP			↑		stars -
90	ZM202735.1	20:27	+12:04	68	3m	
91	COMP			↑		
92	ZM20454.4	20:31	+18:25	68	3m	
93	COMP			↑		
94	ZM202055.0	20:20	+19:49	68	3m	* in slit to W
95	COMP			↑		
96	ZM204944.2	20:49	+20:31	68	5m	+ to W
97	COMP			↑		
98	ZM205306.0	20:53	+22:20	68	3m	
99	COMP			↑		
100	ZM204225.1	20:42	+22:18	68	4m	
101	COMP			↑		
102	ZM205946.8	20:59	+15:54	68	3m	
103	COMP			↑		
104	ZM205425.0	20:54	+22:19	68	2m	stars in slit
105	COMP			↑		

60 inch Telescope Log
 Observer: PB
 PI: Huchra
 Spectrograph: FAST
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
106	ZM20542.2	20:39	+13:57	68	5m	* to E ; cm
107	COMP			↑		
108	ZM20528.0	20:25	+11:59	68	4m	
109	COMP			↑		
110	ZM202448.2	20:24	+15:05	68	4m	* to E
111	COMP			↑		
112	ZM201407.6	20:44	+22:28	68	4m	0.2 gal 2 star ; * to W
113	COMP			↑		
114	ZM205344.3	20:53	+23:33	68	4m	
115	COMP			↑		
116	ZM205330.3	20:53	+21:36	68	4m	
117	COMP			↑		
118	ZM205718.7	20:57	+12:4	68	4m	
119	COMP			↑		
120	ZM205608.1	20:56	+15:21	68	4m	
121	COMP			↑		
122	ZM205828.2	20:58	+21:46	68	4m	* to E/W
123	COMP			↑		
124	ZM204507.4	20:45	+13:23	68	4m	
125	COMP			↑		
126	ZM203443.6	20:34	+10:20	68	4m	
127	COMP			↑		
128	ZM204217.3	20:42	+22:18	68	5m	wk
129	COMP			↑		
130	ZM204406.7	20:44	+22:05	68	5m	
131	COMP			↑		
132	ZM203951.3	20:39	+12:52	68	4m	
133	COMP			↑		
134	ZM203807.5	20:38	+19:43	68	4m	
135	COMP			↑		

60 inch Telescope Log
 Observer: DB
 PI: Andi

Spectrograph: FAST
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Number	Object	R.A.	Dec.	L/R	Fxp	Comments
137	BDp284211	2148	+2842	56	30s	windy
138	COMP			↑		
139	2M2022098	20:02	+1943	68	7m	pair seemg
140	COMP			↑		
141	2M205156.4	20:51	+2234	68	4m	
142	COMP			↑		
143	2M204148.3	20:41	+1633	68	7m	or sci bin by 2
144	COMP			↑		
145	sr96012063	22:48	+1204	59	15m	
146	COMP			↑		
147	.074	22:49	+1155	59	15m	* in slit + E ; em
148	COMP			↑		
149	.675	22:49	+1129	59	15m	
150	COMP			↑		
151	.081	22:49	+1034	59	10m	
152	COMP			↑		
153	.082	22:49	+1202	59	5m	
154	COMP			↑		
155	.085	22:49	+1133	59	5m	
156	COMP			↑		
157	SN1998dh	2314	+0432	2	20m	
158	COMP			↑		
159	.086	22:49	+1203	59	8m	
160	COMP			↑		
161	.087	22:49	+1207	59	10m	
162	COMP			↑		
163	.088	22:49	+1051	59	9m	
164	COMP			↑		
165	.097	22:50	+1054	59	8m	
166	COMP			↑		

60 inch Telescope Log
 Observer: PB
 PI:

Spectrograph: FAST
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
167	Soya - 061	01:11	-00:59	73	7m	
168	WMP			↑		
169	062	01:11	-00:57	73	17m / 14m	clouds! ok
170	WMP			↑		
171	079	01:23	+33:15	73	5-7m	ok
172	WMP			↑		
173	SSZ6312139	23:45	+01:41	59	6m	
174	WMP			↓		
175	ZM0125314	01:25	+32:08	68	3m	big delay of clouds
176	WMP			↑		
177	ZM0107218	01:07	+11:16	68	4m	clouds; wk; ok
178	WMP			↑		stopped for good
179-180	BIAS				0s	ugh!
181-188	FLAT				6s	
189-208	BIAS				0s	
209-218	FLAT				12s	
219-228	DARK				20m	

60 inch Telescope Log

Observer: Pfeberlind
 PI: Huchra

Spectrograph: FAST

Grating: 300

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	DARK				15m	
21-30	BIAS				0s	beautiful sunset
31-40	FLAT				6s	
41-50	BIAS				0s	clouds dissipating
51-60	FLAT				12s	quickly
61-65	sky			57	2s	
66	COMP			↑	5s	
67-68	BDP332672	15:50	+53:05	56	1m	
69	COMP			↑		
70	ZM151719.7	15:17	+70:32	68	4m	
71	COMP			↑		
72	ZM152139.9	15:21	+75:48	68	4m	
73	COMP			↑		
74	ZM151923.1	15:19	+70:32	68	4m	wk
75	COMP			↑		
76	ZM152606.2	15:26	+72:32	68	4m	
77	COMP			↑		
78	ZM150448.2	15:04	+76:21	68	5m	
79	COMP			↑		
80	ZM150605.6	15:06	+70:32	68	5m	
81	COMP			↑		
82	ZM150420.8	15:04	+73:11	68	6m	wk
83	COMP			↑		
84	ZM150001.6	15:00	+74:00	68	5m	
85	COMP			↑		
86	ZM151349.3	15:13	+72:51	68	5m	
87	COMP			↑		
88	ZM152057.9	15:20	+70:50	68	5m	
89	COMP			↑		

60 inch Telescope Log

Observer: RB
 PI: Jeff & John & Bob

Spectrograph: FAST

Grating: 30R

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Number	Object	R. A.	Dec.	L/R	Exp	Comments
90	ZM153333.9	15:33	+21:28	68	5m	Lik
91	COMP			↑		
92	ZM154429.6	15:44	+21:01	68	5m	
93	COMP			↑		
94	ZM155125.2	15:51	+20:45	68	6m	
95	COMP			↑		
96	ZM155540.0	15:53	+19:28	68	7m	* to E. by 2
97	COMP			↑		
98	ZM162738.0	16:31	+20:47	68	4m	
99	COMP			↑		
100	ZM165211.1	16:52	+23:51	68	4m	
101	COMP			↑		
102	COMP			↓	9s	1.1" slit ↓
103/104	4U1907p09	19:11	+09:49	77	15m	*2
105	COMP			↑		
106/107	HD230579	19:01	+11:01	77	10/20s	ugh - clouds!
108	COMP			↑		
109	UGL11149	18:11	+45:51	2	7m	3" slit ↓
110	SN1998dk	18:11	+45:51	2	20m	
111	COMP			↑		
112	ZM184901.1	18:49	+9:19	68	3m	bright * to W
113	COMP			↑		
114	ZM182944.0	18:29	+2:08	68	3m	
115	COMP			↑		
116	ZM182835.3	18:28	+14:59	68	4m	
117	COMP			↑		
118	ZM184804.3	18:48	+9:01	68	3m	
119	COMP			↑		

15,300

60 inch Telescope Log

Observer: RB

PI: Huchra

Spectrograph: FAST

Grating: 40R

Date: 9/14/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
120	ZM185908.7	18:59	+4:02	68	5m	clearing ok!
121	COMP			↑		
122	ZM1852501.4	18:28	+6:07	68	5m	
123	COMP			↑		
124	ZM183100.8	18:31	+22:30	68	6m	close E-W pair; bin by 2
125	COMP			↑		wk em
126	ZM184909.7	18:49	+8:06	68	7m	
127	COMP			↑		
128	ZM185656.5	18:56	+17:57	68	10m	em
129	COMP			↑		
130	ZM211717.1	21:17	+6:58	68	5m	
131	COMP			↑		
132	ZM2123000	21:23	+12:34	68	4m	
133	COMP			↑		
134	ZM2100462	21:00	+13:31	68	4m	
135	COMP			↑		
136	ZM210107.1	21:01	+16:41	68	4m	
137	COMP			↑		
138	ZM21030069	21:03	+12:57	68	4m	
139	COMP			↑		
140	ZM212250.6	21:22	+15:16	68	3m	
141	COMP			↑		
142	ZM214727.2	21:47	+13:13	68	4m	* to W
143	COMP			↑		ack more clouds
144	ZM210116.0	21:01	+16:06	68	5m	redo
145	COMP			↑		↳ see #156
146	ZM0120120	01:20	+14:33	68	5m	
147	COMP			↑		
148	ZM010020.1	01:00	+17:05	68	8m	solid clouds ☺
149	COMP			↑		

to ~

60 inch Telescope Log
 Observer: PB
 PI: Huchra
 Spectrograph: FAST
 Grating: 30R
 Date: 9/14/98
 Page: 6504

Number	Object	R.A.	Dec.	L/R	Exp	Comments
150	ZM015615.2	01:56	+31:21	68	4m	sucker hole. m E
151	COMP			↑		
152	ZM015634.0	01:56	+31:26	68	3m	
153	COMP			↑		
154	ZM015635.8	01:56	+31:11	68	4m	
155	COMP			↑		clearing again?
156	ZM210116.0	21:01	+16:06	68	7m	red0 from 154
157	COMP			↑		→ star + galaxy → 2 velocities
158	ZM210028.1	21:00	+16:30	68	6m	→ gal @ cz = 9500 km/s
159	COMP			↑		
160	ZM210034.5	21:00	+16:06	68	6m	
161	COMP			↑		
162-3	ZM210247.3	21:02	+19:11	68	6m	more clouds
164	COMP			↑		
165	ZM210004	21:00	+17:46	68	6m	
166	COMP			↑		
167	ZM210315.5	21:03	+14:12	68	6m	
168	COMP			↑		
169	ZM212123.8	21:24	+14:40	68	5m	
170	COMP			↑		62 to 5!
171	ZM212610.6	21:26	+15:37	68	5m	
172	COMP			↑		
173	ZM212743.3	21:27	+12:06	68	6m	WK
174	COMP			↑		
175	ZM214642.6	21:46	+15:18	68	9m	
176	COMP			↑		
177	ZM214942.5	21:49	+17:21	68	5m	
178	COMP			↑		
179	ZM214928.4	21:49	+17:43	68	5m	
180	COMP			↑		

7800

60 inch Telescope Log

Observer: PB

PI: Garcia

Spectrograph: FAST

Grating: 3WL

Date: 9/14/98

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Number	Object	R. A.	Dec.	L/R	Exp	Comments
181	2M2151006	21:51	+52:28	68	5m	clouds moving in fast
182	COMP			↑		
183-185	CICan	04:19	45	10	90s-20s	
186	COMP			↑		
187	GA1132B	05:01	+52:45	56	5m	forgot it - garbage
188	COMP			↑		stopped by clouds
189-198	BIAS			0	0s	
199-208	FLAT				6s	
209-218	BIAS				0s	
219-228	FLAT				12s	
229-238	FLAT				20s	1.1" slit bin by 4
						rain! ; cyclic error cloud!

60 inch Telescope Log

Observer: CALYINS

PI: All, Bines, Mahdavi,

Spectrograph: FAST

Grating: 300L

Date: 9/15/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-3	DARKS				15m	binby 4
4-13	BINS				0s	
14-23	FLAT				60s	
24-33	BINS				0s	binby 2
34-43	FLAT				12s	
44-45	BDP332642	15 51	32 56	#56	1m	
46	comp			↑		
47	NS866	15 06	55 45	#57	90s	dust lane
48	comp			↑		
49	α2199.5	16 08	40 19	#64	200m	
50	comp			↑		
51	α2199.7	16 08	38 10	#64	17m	
52	comp			↑		
53	α2199.8	16 09	40 08	#64	10m	star to the west
54	comp			↑		
55	α2199.9	16 10	36 51	#64	8m	star to the west
56	comp			↑		binby 2
57	α2199.10	16 11	36 58	#64	8m	
58	comp			↑		
59	α2199.11	16 11	38 59	#64	8m	
60	comp			↑		
61	α2199.12	16 11	41 56	#64	5m	
62	comp			↑		
63	α2199.13	16 11	39 44	#64	200m	
64	comp			↑		
65	α2199.124	22 53	11 16	#59	17m	
66	comp			↑		
67	α2199.125	22 54	11 41	#59	8m	
68	comp			↑		

60 inch Telescope Log

Observer: CALKINS

PI: Mahdavi

Spectrograph: FAST

Grating: 300L

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Date: 9/15/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
69	slr 6013.126	22 54	11 47	π59	8m	
70	comp			↑		
71	slr 6013.127	22 54	11 43	π59	5m	
72	comp			↑		
73	ss 26312.129	23 42	-02 54	π59	20m	weak!
74	comp			↑		
75	ss 26312.131	23 43	-1 31	π59	20m	binby 2
76	comp			↑		
77	ss 26312.132	23 43	-2 21	π59	20m	binby 2
78	comp			↑		
79	ss 26312.126	23 45	-1 26	π59	20m	
80	comp			↑		
81	ss 26312.137	23 45	-2 03	π59	5m	
82	comp			↑		
83	ss 26312.140	23 45	-3 35	π59	4m	
84	comp			↑		
85	ss 26312.141	23 45	-2 10	π59	20m	
86	comp			↑		
87	ss 26312.142	23 45	-2 25	π59	5m	
88	comp			↑		23:45:47 -02:55:31
89	ss 26312.143	23 46	-1 52	π59	2m	23:46:03 -01:50:41
90	comp	23:46:14	-02:24:30	↑		moving
91	ss 26312.144	23 46	-2 57	π59	5m	
92	comp			↑		
93	ss 26312.145	23 46	-3 30	π59	20m	binby 2, star west
94	comp			↑		
95	ss 26312.146	23 46	-2 09	π59	5m	binby 2
96	comp			↑		
97	ss 26312.147	23 46	-3 21	π59	5m	
98	comp			↑		

used comp 88 for file 89

60 inch Telescope Log

Observer: CALKINS

PI: Kishdavi, Kirshner, Barton

Spectrograph: F557

Grating: 3000

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Date: 7/15/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
99	SS26312.148	23 46	-3 15	#59	7m	
100	comp			↑		
101	SS26312.149	23 46	-1 43	#59	6m	
102	comp			↑		
103	SS26312.150	23 46	-2 03	#59	20m	
104	comp			↑		
105	SN1998dk	00 14	-00 44	#2	20m	gal to the west
106	comp			↑		
107	SN1998dm	01 26	-06 07	#2	15m	
108	comp			↑		
109	SN1998dt	2 28	-10 34	#2	20m	clouds returning!
110	comp			↑		
111	Feige 25	2 38	5 28	#2	2m	
112	comp			↑		
113	SO91-080	1 23	33 16	#73	5m	STAR - correct dj 23
114	comp			↑		
115	SO91-081	1 23	33 53	#73	3m	
116	comp			↑		01:23:58 + 33:53:45
117	SO91-082	1 24	33 50	#73	20m	01:24:01 + 33:51:58
118	comp	mov	ing	↑		01:25:53 + 34:03:17
119	SO91-108	1 49	34 59	#73	7m	
120	comp			↑		
121	SO91-110	1 49	34 58	#73	15m	
122	comp			↑		
123	SO91-115	1 49	32 00	#73	11m	
124	comp			↑		
125	SO91-118	1 51	8 15	#73	8m	
126	comp			↑		
127	SO91-119	1 51	8 18	#73	8m	
128	comp			↑		

used ^{comp} 116 for file 117

60 inch Telescope Log				Spectrograph: <u>FAST</u>		
Observer: <u>CALKINS</u>				Grating: <u>100L</u>		Page: <u>6509</u>
PI: <u>Lima, All</u>				Date: <u>9/15/98</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
129	2M021828	2 18	14 20	1568	1m	Clouds thickening to the east
130	comp			↑		
131	2M023723	2 07	26 00	1568	1m	*02:37:23 +26:50:16
132	comp	moving	ny	↑		02:39:29 +26:24:24
133	2M024903	2 49	11 58	1568	1m	*
134	comp			↑		
135	2M025615	2 36	27 10	1568	3m	
136	comp			↑		
137	2M023618	2 36	35 57	1568	3m	
138	comp			↑		
139	2M022020N	2 20	13 28	1568	90s	* 0 binary
140	comp			↑		
141	2M024609	2 46	24 32	1568	5m	
142	comp			↑		
143	2M023817	2 38	29 31	1568	2m	*
144	comp			↑		
145	2M023823	2 36	31 57	1568	8m	*
146	comp			↑		
147	H214	4 41	10 59	1568	6m	
148	comp			↑		
149-153	sky			1568	8s	
154	comp			↑		
155-164	BEAS				0s	
165-174	FLAT				6s	
175-184	BEAS				0s	Binary 2
185-194	FLAT				12s	
195-204	DARK				15m	Binary 2
	Unable to get Mike Garcia's star					due to eastern clouds

Used comp 132 for 131 anyway (hazy moon is during read out)

129 - superposed star or 2 stars

60 inch Telescope Log
 Observer: CALKINS
 PI: Bill Kitchner, McClintock, Hudra
 Spectrograph: FAC F
 Grating: 1002
 Date: 9/16/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARKS				15m	Biny 4
11-20	BEAS				0s	
21-30	FLAT				60s	
31-40	BEAS				0s	Biny 2
41-50	FLAT				12s	
51-60	FLAT				20s	Biny 4, 1.1" slit clouds @ sunset
61, 62	HD192281	20 12	40 15	#56	4s	
63	comp			↑		
64	sn 1998 dx	18 11	49 51	#2	11m	had to shorten for clouds
65	comp			↑		
66	comp			↓		
67, 68	4U1907p09	19 09	09 49	#77	15m	in + out of clouds
69	comp			↑		
70, 71	110230579	19 04	11 06	#77	10,20	
72	comp			↑		
73	2M223817.7p	22 38	20 52	#68	3m	weak due to clouds
74	comp			↑		
75	2M222407	22 24	22 36	#68	1m	stellar
76	comp			↑		
77	2M224250	22 42	20 13	#68	1m	star east, stellar
78	comp			↑		
79	2M225508.2	22 55	19 04	#68	90s	Biny 2, star west
80	comp			↑		
81	2M223459.1p	22 35	20 47	#68	5m	
82	comp			↑		
83	2M225311.6p	22 53	20 49	#68	10m	
84	comp			↑		

60 inch Telescope Log

Observer: CALIKENS

PI: Huchra, Kishner

Spectrograph: FAST

Grating: 300L

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Date: 9/16/98

Number	Object	R. A.	Dec.	L/R	Exp	Comments
85	2M2217020.4 p	22 12	16 25	15 68	5m	
86	comp			↑		
87	2M225754.2 p	22 57	16 09	15 68	7m	
88	comp			↑		
89	2M224848.7	22 48	18 34	15 68	12m	
90	comp			↑		
91	2M224601.5	22 46	19 32	15 68	10m	
92	comp			↑		
93	sn1998dh	23 14	04 31	15 2	20m	galaxy east
94	comp			↑		
95, 96	Feige 110	23 19	-5 10	15 56	2m	
97	comp			↑		
98	2M225936.2 p	22 59	13 21	15 68	12m	
99	comp			↑		
100	2M223917.3 p	22 34	23 35	15 68	5m	
101	comp			↑		
102	2M034800.7 p	3 47	33 06	15 68	10m	
103	comp			↑		
104	2M034747.0 p	3 47	33 03	15 68	4m	
105	comp			↑		
106	2M221813.1 p	3 08	33 57	15 68	4m	
107	comp			↑		
108	2M034605.3 p	3 46	12 42	15 68	5m	
109	comp			↑		
110	2M034249.8 p	3 42	13 37	15 68	3m	
111	comp			↑		
112	2M035421.6 p	3 54	17 34	15 68	3m	
113	comp			↑		
114	2M035908.0 p	3 59	21 36	15 68	3m	
115	comp			↑		

60 inch Telescope Log
 Observer: CALKINS
 PI: Luchra, Garcia, McClintock
 Spectrograph: FAST
 Grating: 1006
 Date: 9/16/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
116	2M030806. Sp	3 08	30 29	¹⁵ 68	3m	
117	comp			↑		
118, 119	C.E. Com	4 19	56 00	¹⁵ 107	23, 90s	
120	comp			↑		
121	BGGem	6 03	27 42	¹⁵ 107	5m	Binby 2, star to the west?
122	comp			↑		
123	comp			↓		
124, 125	AOS35p26	5 38	26 18	¹⁵ 77	5m	10" slit
126	comp			↑		
127	AD39478	5 54	26 25	¹⁵ 77	2m	
128	comp			↑		
129	2M030740. Op	3 07	35 41	¹⁵ 68	3m	
130	comp			↑		
131	2M030057.8p	3 00	33 12	¹⁵ 68	3m	
132	comp			↑		
133	2M025758.3p	3 51	35 39	¹⁵ 68	6m	
134	comp			↑		
135	2M035516.3p	3 55	14 35	¹⁵ 68	8m	
136	comp			↑		
137	2M035603.2p	3 56	12 52	¹⁵ 68	4m	
138	comp			↑		
139	2M035322.3p	3 53	12 26	¹⁵ 68	1m	stellar
140	comp			↑		
141	2M034849.4p	3 48	13 26	¹⁵ 68	6m	
142	comp			↑		
143	2M034247.2p	3 42	15 49	¹⁵ 68	10m	
144	comp			↑		
145	2M035735.0	3 58	21 49	¹⁵ 68	12m	
146	comp			↑		
147	Feige 25 ¹	2 38	5 28	¹⁵ 56	2m	

60 inch Telescope Log

Observer: CALVIN

PI: all

Spectrograph: FASIT

Grating: 300 L

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Date: 9/16/98

Number	Object	R. A.	Dec.	L/R	Exp	Comments
148	comp			↓		
149-153	sky			5G	10s	
154	comp			↑		
155-164	R.EAS				0s	
165-174	FLAT				6s	
175-184	R.EAS				0s	Rinky 22
185-194	FLAT				12s	
195-209	DARKS				15m	

60 inch Telescope log

Spectrograph: FAST

Observer: CALKINS

Grating: CCD

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PI: All, Rines, Kishner, Huchra

Date: 9/17/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	IRAK				15m	Binby 4
11-20	BEAS				0s	
21-30	FLAT				60s	
31-40	BEAS				0s	Binby 2
41-50	FLAT				12s	
51-55	sky			#56	5s	Binby 4
56	comp			↑		
57, 58	AD192281	20 12	40 16	#56	5s	
59	comp			↑		
60	NS866	15 06	55 45	#57	4m	dust large
61	comp			↑		
62	42199.14	16 13	42 33	#64	8m	
63	comp			↑		
64	42199.15	16 12	41 39	#64	10m	
65	comp			↑		
66	42199.16	16 12	38 54	#64	15m	in ^{not enough} out of clouds
67	comp			↑		
68	sn/998dx	18 11	49 51	#2	20m	bright star east
69	comp			↑		
70	2M182326.4p	18 23	23 13	#68	5m	bright star east by
71	comp			↑		
72	2M185908.3p	18 59	19 09	#68	5m	2 stars east, 1 star west
73	comp			↑		
74	2M181130.7p	18 11	21 01	#68	5m	
75	comp			↑		
76	2M184422.6p	18 44	23 19	#68	5m	2 stars east
77	comp			↑		
78	2M184104.7p	18 41	20 37	#68	5m	binby 2, super-impose star?
79	comp			↑		
80	2M182826.9p	18 28	17 03	#68	5m	

60 inch Telescope Log

Observer: CALKINS

PI: Kulkarni, Mahdavi

Spectrograph: FAST

Grating: 300L

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Date: 9/17/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
81	comp			↑		
82	2M185453.7p	18 54	19 00	1" 68	15m	binby 2, bright star
83	comp			↑		west
84	2M185903.0p	18 59	13 04	1" 68	14m	binby 2, clouds ^{not enough}
85	comp			↑		(weak spectra!!)
						wait out some clouds
86	2M182451.5p	18 24	15 45	1" 68	10m	*
87	comp			↑		
88	2M183901.6p	18 39	13 24	1" 68	20m	*
89	comp			↑		
90	2M222640.7p	22 26	20 05	1" 68	12m	
91	comp			↑		
92	2M223918.8p	22 39	21 51	1" 68	5m	
93	comp			↑		
94	2M223848.7p	22 38	21 15	1" 68	3m	binby 2, star west
95	comp			↑		
96	2M223606.7p	22 16	22 37	1" 68	5m	
97	comp			↑		
98	2M223911.9p	22 19	16 08	1" 68	3m	
99	comp			↑		
100	2M224231.5p	22 47	21 38	1" 68	10m	
101	comp			↑		
102	2M221713.2p	22 17	16 12	1" 68	5m	star west
103	comp			↑		
104	2M223533.8p	22 25	18 34	1" 68	15m	
105	comp			↑		
106	src 60 B.101	22 50	10 52	1" 59	5m	
107	comp			↑		

60 inch Telescope Log
 Observer: CALKINS
 PI: Mahdavi, Kirshner, Bartoni
 Spectrograph: FAST
 Grating: 300L
 Date: 9/17/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
108	src b013.104	22 50	12 33	15 59	8m	clouds are back!
109	comp			↑		
						wait out some more clouds
110	src b013.106	22 50	12 03	15 59	6m	
111	comp			↑		
112	src b013.107	22 50	11 14	15 59	15m	
113	comp			↑		
114	src b013.108	22 51	11 45	15 59	20m	
115	comp			↑		
116	src b013.105	22 50	11 56	15 59	20m	object to the east
117	comp			↑		
118	src b013.109	22 50	10 39	15 59	5m	
119	comp			↑		
120	sn 1998dk	00 14	-00 44	15 59	20m	
121	comp			↑		
122	sn 1998em	01 26	-06 06	15 59	15m	
123	comp			↑		
124, 125	larger star	02 38	05 29	15 56	2m	
126	comp			↑		
127	src gal - 120	01 52	35 47	15 73	10m	star east
128	comp			↑		
129	src gal - 121	1 52	35 51	15 73	12m	
130	comp			↑		
131	src gal - 132	01 57	33 12	15 73	6m	
132	comp			↑		
133	src gal - 139	01 57	32 12	15 73	6m	
134	comp			↑		
135	src gal - 140	01 58	03 05	15 73	5m	

60 inch Telescope log

Observer: CALKINS

PI: Burdson, Garcia, All

Spectrograph: FAST

Grating: 300L

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Date: 9/17/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
136	comp			↑		
137	soqal-141	01 58	03 05	↑ F73	18m	
138	comp			↑		
139	soqal-144	01 59	02 34	↑ F73	12m	
140	comp			↑		
141	soqal-145	02 00	23 35	↑ F73	15m	
142	comp			↑		
143	soqal-146	02 02	09 57	↑ F73	7m	
144	comp			↑		
145	soqal-147	02 02	09 58	↑ F73	6m	
146	comp			↑		
147	soqal-148	02 02	-00 07	↑ F73	15m	
148	comp			↑		
149	soqal-149	02 02	-00 06	↑ F73	12m	
150	comp			↑		
151, 152	CICAM	04 19	55 59	↑ F107	20, 90	
153	comp			↑		
154	soqal-158	02 07	02 06	↑ F73	12m	
155	comp			↑		
156	soqal-159	02 07	02 06	↑ F73	10m	
157	comp			↑		
158	soqal-160	02 07	02 10	↑ F73	15m	
159	comp			↑		
160	Feige 25	02 38	05 28	↑ F56	5m	
161	comp			↑		
162-171	BIAS				0s	Binby 4
172-181	FLAT				6s	
182-191	BIAS				0s	Binby 2
192-201	FLAT				12s	
202-211	DARK				15m	

60 inch Telescope Log
 Observer: Pberlmo
 PI: Huchra
 Spectrograph: FAST
 Grating: 300
 Date: 9/18/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BDS			57	08	
21-30	FLAT			57	63	scattered clouds
31-40	BDS			57	08	nice sunset
41-50	FLAT			57	123	
51-55	sky			57	25	
56	COMP			↑		
57-59	HDF12281	20:10	+40:07	56	45	
60	COMP			↑		
61-62	BDp332642	15:50	+37:26	54	1m	
63	COMP			↑		
64	ZM1503377	15:03	+20:42	68	4m	
65	COMP			↑		
66	ZM1505525	15:08	+20:38	68	5m	bin by 2; close comp to E
67	COMP			↑		
68	ZM151959.1	15:19	+20:42	68	3m	gal (+sup +?) C=dk
69	COMP			↑		
70	ZM151904.3	15:19	+21:50	68	4m	
71	COMP			↑		
72	ZM151759.2	15:17	+26:52	68	4m	
73	COMP			↑		clouds!
74	ZM151751.7	15:17	+25:23	68	5m	bin by 2; close comp to W
75	COMP			↑		
76	ZM152822.8	15:28	+25:58	68	4m	" ; star 5" W of gal
77	COMP			↑		
78	ZM152847.3	15:28	+25:44	68	3m	
79	COMP			↑		
80	ZM153201.1	15:32	+25:34	68	4m	
81	COMP			↑		

60 inch Telescope Log

Observer: PB

PI: Hucha

Spectrograph: FMS

Grating: 3002

Date: 9/18/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
82	ZM155332.7	15:53	+18:48	68	4m	
83	COMP			↑		
84	ZM154711.2	15:47	+22:53	68	4m	
85	COMP			↑		
86	ZM153650.9	15:36	+26:34	68	4m	
87	COMP			↑		
88	ZM155222.4	15:52	+22:53	68	5m	
89	COMP			↑		
90	ZM155330.9	15:53	+18:21	68	4m	
91	COMP			↑		
92	ZM160129.0	16:01	+22:47	68	4m	
93	COMP			↑		
94	ZM160144.4	16:03	+23:28	68	5m	
95	COMP			↑		
96	ZM161329.7	16:13	+22:57	68	6m	to to W
97	COMP			↑		
98	ZM163947.9	16:39	+14:44	68	4m	
99	COMP			↑		
100	ZM164120.6	16:41	+13:25	68	4m	
101	COMP			↑		
102	ZM164116.7	16:41	+13:23	68	4m	
103	COMP			↑		
104	ZM164243.4	16:42	+20:21	68	3m	
105	COMP			↑		
106	ZM165644.0	16:56	+18:33	68	5m	bin by 2 ; 2 clumps
107	COMP			↑		
108	ZM165105.3	16:51	+22:31	68	4m	32
109	COMP			↑		
110	ZM165554.9	16:55	+22:50	68	4m	36
111	COMP			↑		

<p>60 inch Telescope Log</p> <p>Observer: <u>PB</u></p> <p>PI: <u>Jeff & John</u></p>	<p>Spectrograph: <u>FAST</u></p> <p>Grating: <u>300</u></p> <p>Date: <u>9/18/98</u></p> <p style="text-align: right;">Page: <u>6520</u></p>
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Number	Object	R. A.	Dec.	L/R	Exp	Comments
112	COMP			↓		1.1" slit ↓
113,114	4U1907009	19:09	+08:49	104	2x15m	
115	COMP			↑		
116,117	HD 230579	19:09	+11:06	104	20s	
118	COMP			↑		
119,120	BD 28124	21:40	+28:42	56	1m	3" slit ↓
121				↑		
122	2M183110.3	18:31	+13:26	68	8m	
123	COMP			↑		
124	2M2004528 star	20:04	+29:11	68	2x5	reflection nebulae?
125	2M2004528.	20:04	+29:11	68	3m	extended emission across
126	COMP			↑		CO; H α pr 2006; NII, SII
127	2M202420.2	20:24	+27:03	68	7m	ugh lots of clouds
128	COMP			↑		* to E
129	2M202356.7	20:23	+25:42	68	6m	bin by 2; star to W
130	COMP			↑		
131	2M202603.9	20:29	+24:42	68	6m	" "
132	COMP			↑		clear again!
133	2M203531.6	20:38	+25:36	68	9m	
134	COMP			↑		
135	2M202808.2	20:28	+28:29	68	12m	*'s ms 67
136	COMP			↑		
137	2M200119.8	20:01	+17:34	68	12m	
138	COMP			↑		
139	2M203721.1	20:37	+26:15	68	9m	* to E
140	COMP			↑		
141	2M203848.7	20:38	+24:06	68	8m	
142	COMP			↑		

60 inch Telescope Log

Observer: PB
 PI: Betsy John Bob.

Spectrograph: FAST
 Grating: 300
 Date: 9/18/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
143	Fery 110	23:17	-5:20	56	2m	
145	OMP			↑		
146	SN1998dh	23:17	+01:32	2	20m	
147	OMP			↑		280 = "E" gal @ row 54
148	Sagal-280, 281	23:17	+05:38	73	15m	PA=168 PA=168 ^{met} row 28 ^{coll}
149	OMP			↑		280 281 @ row 28
150	ZM210723.6	21:07	+17:57	68	8m	close pair PA=90 2 gal
151	OMP			↑		bin by 2
152	ZM213902.5	21:39	+27:27	68	9m	
153	OMP			↑		windy; seeing worse
154	ZM213952.4	21:39	+24:04	68	8m	
155	OMP			↑		
156	ZM213559.4	21:35	+24:02	68	12m	high cz (37K)
157	OMP			↑		
158	ZM213941.3	21:39	+24:24	68	6m	
159	OMP			↑		
160	ZM214120.8	21:41	+27:57	68	4m	
161	OMP			↑		
162	Sagal-300	23:46	+29:27	73	10m	
163	OMP			↑		
164	-301	23:47	+29:29	73	10m	
165	OMP			↑		
166	-308	00:00	+28:23	73	7m	* to W
167	OMP			↑		
168	-309EW	00:00	+28:24	73	15m	PA=88°; E+W gals
169	OMP			↑		W gal = #309 @ row 33
170	ZM005717D	00:57	+19:27	68	5m	PA=90
171	OMP			↑		
172	ZM005829.1	00:58	+22:19	68	9m	
173	OMP			↑		

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>6522</u>
Observer: <u>PB</u>				Grating: <u>300</u>		
PI: <u>Huchra</u>				Date: <u>9/18/98</u>		
Number	Object	R. A.	Dec.	L/R	Exp	Comments
174	ZM010811.1	01:08	+20:53	68	6m	poor seeing; no sep * gal ^{visible}
175	COMP			↑		
176	ZM010859.0	01:08	+21:44	68	4m	
177	COMP			↑		
178	ZM012242.8	01:22	+19:01	68	4m	
179	COMP			↑		
180	ZM011917.6	01:19	+20:47	68	4m	
181	COMP			↑		
182	ZM012210.7	01:22	+19:37	68	4m	
183	COMP			↑		
184	ZM010732.4	01:07	+18:55	68	4m	
185	COMP			↑		
186	ZM010725.9	01:07	+18:10	68	4m	
187	COMP			↑		
188	SN1998dt	02:28	-10:32	2	20m	
189	COMP			↑		
190	ZM012232.8	01:22	+19:31	68	4m	
191	COMP			↑		
192	ZM012428.7	01:24	+19:11	68	4m	
193	COMP			↑		
194	ZM011238.2	01:12	+20:25	68	5m	21
195	COMP			↑		
196	ZM011012.4	01:10	+22:03	68	4m	23
197	COMP			↑		good seeing!
198	SN1998.N1961	05:41	+68:22	2	20m	
199	COMP			↑		
200-201	G191B2B	05:01	+52	50	2m	
202	COMP			↑		
203-204-5	G1Cam	01:19	+25:29	107	15,90s	5s
206	COMP			↑		

60 inch Telescope Log

Observer: PB

PI: Jeff John

Spectrograph: FAST

Grating: 300

Date: 9/18/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
207	COMP			↓		1.1" slit ↓
208-209	AOS 35p26	05:38	+26:18	104	1m2	
210	COMP			↑		
211	HD 39478	05:53	+26:25	104	10s	
212	COMP			↑		
213	ZM023659.0	02:36	+54:44	68	4m	3" slit ↓
214	COMP			↑		
215	ZM023649.9	02:36	+54:40	68	4m	
216	COMP			↑		
217	ZM024803.0	02:48	+21:31	68	4m	
218	COMP			↑		
219	ZM024905.8	02:49	+21:36	68	4m	
220	COMP			↑		
221	ZM024814.5	02:48	+21:53	68	4m	
222	COMP			↑		
223	ZM024929.5	02:49	+21:12	68	3m	redo
224	COMP			↑		
225	ZM025280	02:40	+41:05	57	2m	bright sky. ✱
226	COMP			↑		
227-229	HD 12623	02:02	+61	57	4s	
230	COMP			↑		
231-240	BIAS				0s	
241-250	FLAT				6s	
251-260	BIAS				0s	
261-270	FLAT				12s	
271-280	FLAT				20s	1.1" slit
281-290	DARK				20m	6m by 2
						clear & down

<p>60 inch Telescope Log</p> <p>Observer: <u>P Berlin</u></p> <p>PI: <u>Huchra</u></p>	<p>Spectrograph: <u>FAST</u></p> <p>Grating: <u>309</u></p> <p>Date: <u>9/15/98</u></p> <p style="text-align: right;">Page: <u>6524</u></p>
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Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BIAS				0s	
21-30	FLAT				6s	
31-40	BIAS				0s	
41-50	FLAT				12s	
51-55	sky			57	2s	
56	COMP			↑	5s	
57-59	HD23078	19:38	+16:48	57	5s	
60	COMP			↑		
61-62	BDP 332642	15:50	+33:05	56	1m	
63	COMP			↑		
64	N5866	15:25	+55:57	57	3m	nice dust lane
65	COMP			↑		
66	ZM150351.0	15:03	+22:10	68	4m	
67	COMP			↑		
68	ZM150118.1	15:01	+16:46	68	4m	
69	COMP			↑		
70	ZM150808.2	15:08	+20:20	68	3m	forced fabtop; cosmic on top of N2
71	COMP			↑		
72	ZM150818.9	15:08	+20:29	68	3m	
73	COMP			↑		
74	ZM150846.8	15:08	+20:04	68	3m	
75	COMP			↑		
76	ZM151823.9	15:18	+23:55	68	3m	
77	COMP			↑		
78	ZM151422.1	15:14	+22:54	68	3m	
79	COMP			↑		
80	ZM156402.4	15:04	+15:27	68	7m	
81	COMP			↑		

60 inch Telescope Log

Observer: PB
 PI: Huchra

Spectrograph: FAST
 Grating: 302
 Date: 9/19/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
82	ZM152115.5	15:21	+25:41	68	10m	
83	COMP			↑		
84	ZM153012.2	15:30	+27:08	68	3m	
85	COMP			↑		
86	ZM152915.3	15:29	+26:09	68	3m	
87	COMP			↑		
88	ZM151823.9	15:18	+23:55	68	4m	
89	COMP			↑		
90	ZM153727.8	15:37	+21:16	68	4m	
91	COMP			↑		
92	ZM154031.9	15:40	+24:33	68	4m	Finishes the list
93	COMP			↑		
94	ZM164624.8	16:40	+14:38	68	4m	
95	COMP			↑		
96	ZM164433.5	16:44	+14:19	68	5m	
97	COMP			↑		
98	ZM165139.2	16:51	+23:58	68	4m	
99	COMP			↑		
100	ZM165321.6	16:53	+23:26	68	4m	
101	COMP			↑		
102	ZM164601.9	16:46	+21:58	68	4m	
103	COMP			↑		
104	ZM164649.1	16:46	+22:34	68	3m	Star to W
105	COMP			↑		
106	ZM165430.7	16:54	+19:46	68	3m	40
107	COMP			↑		
108	ZM165550.2	16:55	+27:26	68	3m	38
109	COMP			↑		
110	ZM165220.0	16:52	+23:54	68	5m	
111	COMP			↑		

60 inch Telescope Log
 Observer: PB
 PI: Huchra / Mahdavi
 Spectrograph: FAST
 Grating: 300
 Date: 9/19/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
112	ZM165439.4	16:34	+29:18	68	46m	
113	COMP			↑		
114	ZM1807728	18:27	+17:00	68	6m	
115	COMP			↑		
116	ZM182805.7	18:28	+12:51	68	5m	
117	COMP			↑		
118	ZM183070.5	18:30	+15:56	68	5m	
119	COMP			↑		
120	ZM183959.2	18:39	+20:14	68	6m	* to W
121	COMP			↑		
122	ZM183911.5	18:33	+18:47	68	5m	
123	COMP			↑		
124	ZM181219.7	18:12	+21:20	68	10m	
125	COMP			↑		clouds!
126	ZM184115.8	18:41	+23:28	68	5m	S+E; thin in N
127	COMP			↑		
128	ZM184918.1	18:49	+22:25	68	4m	(star) w/line STAR
129	COMP			↑		
130	ZM185823.9	18:38	+22:53	68	8m	
131	COMP			↑		
132	ZM184551.2	18:45	+19:23	68	6m	bin by 2; * to E/W; gal has H α - arc clouds big time
133	COMP			↑		
134	BD028424	21:48	+28:42	59	1m	delay of cloud
136	COMP			↑		
137	SD013.10	22:50	+11:25	59	15m	PA=70 to avoid bright star
138	COMP			↑		brt scat light; good H α em!!
139	.109	22:51	+10:59	59	10m	* to W
140	COMP			↑		
141	.110	22:51	+11:15	59	10m	6m etc clouds.
142	COMP			↑		

60 inch Telescope Log

Observer: P. Berlin
 PI: Huchra

Spectrograph: FAST
 Grating: 3000
 Date: 9/20/98

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Number	Object	R. A.	Dec.	L/R	Exp	Comments
110	DARK				15m	
11-20	BIAS				0s	
21-20	FLAT				6s	
31-40	BIAS				0s	
41-50	FLAT				12s	
51-55	SKY			57	2s	on clouds
56	COMP			↑	5s	
57-58	BDP552642			56	1m	
59	COMP			↑		
60	NS856	15:07	+55	57	3m	
61	COMP			↑		
62	ZM160416.3	16:04	+28:34	68	3m	
63	COMP			↑		
64	ZM160517.7	16:05	+28:35	68	3m	
65	COMP			↑		
66	ZM160616.2	16:06	+21:03	68	4m	
67	COMP			↑		
68	ZM160352.0	16:03	+23:26	68	3m	76
69	COMP			↑		
70	ZM160600.0	16:06	+22:38	68	3m	
71	COMP			↑		
72	ZM160347.0	16:03	+20:48	68	8m	
73	COMP			↑		
74	ZM161242.8	16:12	+22:59	68	5m	
75	COMP			↑		
76	ZM162301.0	16:23	+23:01	68	4m	*to far W
77	COMP			↑		
78	ZM165213.6	16:52	+23:47	68	5m	PA=3 to avoid star; emok
79	COMP			↑		

60 inch Telescope Log
 Observer: PB
 PI: Huchra
 Spectrograph: FAST
 Grating: 30R
 Date: 9/20/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
80	20393pos25	20:11:50	+05:35:39	68	10m	PA=3 ok ok + rotate to avoid slip
81	COMP			↑		
82	ZM162257.3	16:22	+73:53	68	4m	PA=90 k + E
83	COMP			↑		
84	ZM162944.0	16:29	+73:24	68	5m	! clouds ^{at} not enough
85	COMP			↑		
86	ZM162726.6	16:27	+72:08	68	6m	
87	COMP			↑		clouds all over
88	ZM163156.0	16:31	+70:40	68	5m	
89	COMP			↑		
90	ZM163640.7	16:36	+73:21	68	6m	
91	COMP			↑		
92	ZM164255.4	16:42	+73:33	68	5m	* to W
93	COMP			↑		
94	ZM164409.2	16:44	+74:17	68	5m	clearing?
95	COMP			↑		
96	ZM164332.8	16:43	+72:41	68	4m	* to W
97	COMP			↑		
98	ZM164536.9	16:45	+71:49	68	6m	em; gal in slit to E
99	COMP			↑		
100	ZM165317.4	16:53	+70:12	68	4m	
101	COMP			↑		
102	ZM165340.9	16:53	+79:43	68	5m	
103	COMP			↑		
104	ZM165443.9	16:54	+74:49	68	5m	
105	COMP			↑		
106	ZM165754.7	16:57	+70:54	68	5m	em
107	COMP			↑		
108	ZM165735.9	16:57	+78:05	68	5m	
109	COMP			↑		

60 inch Telescope Log
 Observer: PB
 PI: Jeff. And:
 Spectrograph: FAST
 Grating: 3WR
 Date: 9/20/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
110	ZM165139.1	16:51	+23:42	68	5m	other gal to E
111	COMP			↑		
112	ZM165513.9	16:55	+23:12	68	5m	Finishes the list!
113	COMP			↑		
114	COMP			↓		1.1" slit
115/116	4U1907 p09	19:07	+09:49	104	2x15m	
117	COMP			↑		
118/119	HD230579	19:11	+11	104	20s	
120	COMP			↑	8s	
121	ZM184928.3	18:49	+18:55	68	15m	3" slit
122	COMP			↑		
123/4	BD p204211	21:48	+30	56	4s	
125	COMP			↑		
126	scg6.013-112	22:51	+11:29	59	6m	
127	COMP			↑		
128	.111	22:51	+12:42	59	6m	Seeing worse.
129	COMP			↑		
130	.113	22:51	+11:37	59	3m	
131	COMP			↑		
132	.114	22:51	+11:40	59	4m	
133	COMP			↑		
134	.115	22:52	+11:33	59	5m	
135	COMP			↑		
136	.117	22:52	+11:39	59	3m	
137	COMP			↑		
138	.119	22:52	+11:49	59	3m	
139	COMP			↑		

60 inch Telescope Log
 Observer: PB
 PI: Krishner et al
 Spectrograph: FAST
 Grating: 3WL
 Date: 9/20/98
 Page: 6531

Number	Object	R.A.	Dec.	L/R	Exp	Comments
140	SS26312.128	23:42	-02:27	S9	20m	good em! V. LSR
141	COMP			↑		
142	.130	23:43	-02:57	S9	20m	empir 2107 Q based on who emission only
143	COMP			↑		
144	.132	23:43	-02:20	S9	20m	
145	COMP			↑		
146	.151	23:46	-02:43	S9	15m	
147	COMP			↑		
148	SN1998dk	02:44	-02:44	Z	20m	17m - clouds
149	COMP			↑		
150	SS26312.152	23:47	-02:25	S9	12m	10m - fog! level in em
151	COMP			↑		delay
152-154	CI Cam	04:19	+55:59	107	10, 5, 5s	Same auto-closing
155	COMP			↑		
156-157	SN1998dm	01:26	-06:06	Z	3m, 15m	
158	COMP			↑		
159	SN1998dl	02:46	-07:31	Z	15m	V. poor seeing 3"
160	COMP			↑		
161-162	MFL	00:39	+40:35	S7	3s	
163	COMP			↑		
164	158m213	00:40	+40:50	S7	5m	2m fogged out
165	COMP			↑		
166-175	BIAS				0s	
176-185	FLAT				6s	
186-195	BIAS				0s	
196-205	FLAT				12s	
206-215	FLAT				20s	1.1" slit
216-225	DARK					

60 inch Telescope Log
 Observer: CALKINS
 PI: Dr. Kirchner, Kuchra
 Spectrograph: FACT
 Grating: 300L
 Date: 9/21/98
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Number	Object	R.A.	Dec.	L/A	Exp	Comments
1-6	DARK				15m	binby 4
7-16	FLAT				60s	
17-26	FLAT				60s	
27-36	FLAT				60s	binby 2
37-46	FLAT				12s	
47	KDP404032	20 08	41 14	#56	30s	binby 4
48	comp			↑		
49	KDP404032	20 08	41 14	#56	20s	binby 2
50	comp			↑		
51	SN1998dx	18 11	49 51	#2	20m	bright object east
52	comp			↑		
						wait out some clouds
53	21222658.3p	22 27	21 19	#68	8m	
54	comp			↑		
55	21223500.7p	22 35	13 27	#68	4m	object east
56	comp			↑		
57	21224528.0p	22 45	20 22	#68	6m	
58	comp			↑		
59	21225816.8p	22 13	19 12	#68	3m	bright object to the west
60	comp					
61	21224931.7p	22 49	17 59	#68	4m	clouds
62	comp			↑		
63	21224037.4p	22 40	17 52	#68	5m	
64	comp			↑		
65	21224542.1p	22 46	18 55	#68	3m	
66	comp			↑		
67	21224215.9p	22 42	19 41	#68	5m	in west of clouds
68	comp			↑		
69	21221790.5p	22 17	15 05	#68	6m	
70	comp			↑		

60 inch Telescope Log

Observer: CALKINS

PI: Huchra, Alkhalavi

Spectrograph: FASI

Grating: 5006

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Date: 9/21/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
71	2M223649.1p	22 36	14 41	F68	5m	
72	comp			↑		
73	2M225753.5p	22 57	14 08	F68	4m	clouds
74	comp			↑		
75	2M225835.3p	22 58	16 16	F68	15m	
76	comp			↑		
77	2M221650.9p	22 16	15 51	F68	3m	
78	comp			↑		
79	2M221425.8p	22 14	13 18	F68	3m	
80	comp			↑		
81	2M223420.6p	22 34	19 28	F68	8m	
82	comp			↑		
83	2M225727.3p	22 51	20 34	F68	5m	
84	comp			↑		
85	2M221112.4p	22 21	23 58	F68	10m	clouds
86	comp			↑		
87	2M224609.7p	22 46	23 35	F68	10m	bright object to the east
88	comp			↑		
89	2M225207.6p	22 52	17 57	F68	10m	clouds
90	comp			↑		
91	2M223641.0p	22 36	19 31	F68	15m	
92	comp			↑		
93	2M225056.9p	22 50	22 21	F68	7m	
94	comp			↑		
95	2M225737.3p	22 57	16 08	F68	12m	bright star to the east
96	comp			↑		
97	2M221113.1p	22 22	19 49	F68	5m	
98	comp			↑		Dome Auto-closed
99	SS26312.153	22 47	-2 00	F59	3m	
100	comp			↑		

60 inch Telescope Log
 Observer: COLLEENS
 PI: Hobbs

Spectrograph: FAST
 Grating: 300L
 Date: 9/21/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
101	SS 26312.154	23 47	-2 19	RSP	90s	Double --@--
102	comp			↑		
103	SS 26312.155	23 47	-2 16	RSP	3m	Weak!! - close for ridge fog
104	comp			↑		
						Fog from midnight to dawn
105-114	B.EAS				0s	
115-124	FLAT				6s	
125-134	B.EAS				0s	RETRY 2
135-144	FLAT				12s	
145-154	DARKS				15m	

60 inch Telescope Log
 Observer: CALKINS
 PI: Al, Riney, McClintock
 Spectrograph: FAST
 Crating: 300L
 Date: 9/22/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	Binby 4
11-20	FLAT				0s	
21-30	FLAT				6s	
31-40	DEAS				0s	Binby 2
41-50	FLAT				12s	
51-55	sky			#56	2s	Binby 4
56	comp			↑		
57	HD192281	20 12	40 15	#56	2s	
58	comp			↑		
59	NG866	15 06	55 45	#57	3m	dust lane
60	comp			↑		
61	α2199.17	16 12	40 15	#64	8m	
62	comp			↑		
62	α2199.18	16 12	39 25	#64	5m	object to the east
64	comp			↑		
65	α2199.19	16 12	39 18	#64	4m	
66	comp			↑		
67	α2199.20	16 12	40 19	#64	8m	
68	comp	16 13 01	40 02 16	↑		MOVING
69	α2199.21	16 13	39 14	#64	10m	Binby 2, bright
70	comp			↑		object to the east
71	α2199.22	16 13	36 35	#64	12m	Binby 4
72	comp			↑		
73	α2199.23	16 13	39 51	#64	9m	
74	comp			↑		
75	α2199.24	16 13	39:20	#64	10m	
76	comp			↑		
77	α2199.25	16 14	39 33	#64	15m	Binby 2, bright object
78	comp			↑		to the east
79	comp			↓		1.1" slit

use comp 66 for file 67

60 inch Telescope Log
 Observer: CALKINS
 PI: McClintock, Huchra, Mahdavi
 Spectrograph: FAST
 Grating: 300L
 Date: 9/22/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
80, 81	4U1907p.09	19 09	09 49	#104	15m	
82	comp			↑		
83, 84	HD230579	19 04	11 06	#104	10, 20s	
85	comp			↑		
86	2M202449.5p	20 24	26 44	#68	10m	3 objects to the east
87	comp			↑		
88	2M2038:4.7p	20 28	24 59	#68	7m	
89	comp			↑		
90	2M203539.7p	20 35	27 29	#68	12m	object to the east
91	comp			↑		
92	2M200218.1p	20 02	11 34	#68	12m	center object, binby 2
93	comp			↑		
94	2M200919.8p	20 09	24 23	#68	20m	center object
95	comp			↑		
96	2M200122.9p	20 01	12 40	#68	10m	object to the east
97	comp			↑		
98	2M201057.7p	20 10	24 20	#68	15m	Binby 2, bright object to the east
99	comp			↑		
100	SS26312.155	23 47	-2 17	#59	4m	
101	comp	23 47 23	-02 20 07	↑		400706
102	SS26312.156	23 47	-2 27	#59	20m	
103	comp			↑		
104	SS26312.157	23 47	-2 17	#59	3m	
105	comp	23 47 23	-02 21 07	↑		MOVING
106	SS26312.158	23 47	-2 21	#59	2m	
107	comp			↑		
108	SS26312.159	23 47	-2 46	#59	3m	
109	comp			↑		
110	SS26312.160	23 47	-2 18	#49	12m	
111	comp			↑		

used ^{comp} file 103 for 104

60 inch Telescope Log

Observer: CALKINS

PI: Alshdavi, Kirchner, Barton, Huchra

Spectrograph: FAST

Grating: 5006

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Date: 9/22/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
112	ss26312.162	23 47	-1 58	#59	20m	
113	comp			↑		
114	ss26312.163	23 47	-2 36	#59	12m	
115	comp			↑		
116	ss26312.164	23 47	-02 36	#59	12m	
117	comp			↑		
118	ss26312.166	23 47	-3 08	#59	20m	
119	comp			↑		
120	sn1998dk	00 14	-00 43	#2	20m	
121	comp			↑		
122	sn1998dm	01 26	-06 07	#2	15m	
123	comp			↑		
124	sn1998dt	02 28	-10 34	#2	20m	
125	comp			↑		
126	Feige 25	2 38	5 28	#56	2m	
127	comp			↑		
128	scgal-161	2 07	2 07	#73	8m	
129	comp			↑		
130	scgal-162	2 08	6 25	#73	20m	
131	comp			↑		
132	scgal-163	2 08	6 20	#73	10m	
133	comp			↑		
134	scgal-164	2 11	3 49	#73	17m	
135	comp			↑		
136	scgal-165	2 11	3 46	#73	6m	
137	comp			↑		
138	scgal-166	2 22	43 00	#73	12m	
139	comp			↑		
140	2MOSS216.4p	3 52	13 24	#68	7m	
141	comp			↑		

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>6537</u>	
Observer: <u>CARLINS</u>			Grating: <u>300L</u>		Date: <u>9/22/98</u>	
FI: <u>Buchsa, McClintock, Garcia, All</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
142	2M035605-1p	3 56	18 35	#68	10m	
143	comp			↑		
144	2M034157-2p	3 42	13 17	#68	10m	
145	comp			↑		
146	comp			↓		
147	40535p26	5 26	26 18	#104	1m	1.1" slit
148	comp			↑		
149	comp			↓		
150	AD39478	5 53	26 25	#104	1m	
151	comp			↑		
152, 153	CICam	4 19	55 59	#107	20, 90s	3" slit
154	comp			↑		
155	R6Gem	6 03	27 41	#107	6m	object to the west
156	comp			↑		
157	AD5291	7 01	27 10	#57	5s	
158	comp			↑		
159	G19182B	5 05	52 50	#56	2m	
160	comp			↑		
161	2M103444C-p	3 48	33 29	#68	7m	
162	comp			↑		
163	2M035214.4p	3 52	14 26	#63	7m	
164	comp			↑		
165-174	BEAS				0s	
175-184	FLAT				60s	
185-194	FLAT				20s	1.1" slit
195-204	BEAS				0s	Binary 2
205-214	FLAT				12s	
215-224	DARK				15m	

60 inch Telescope Log				Spectrograph: FAST		Page: 6039	
Observer: CALLINE				Grating: 2000			
PI: All, Rines, Hechler, Kistner				Date: 9/23/98			
Number	Object	R.A.	Dec.	L/R	Exp	Comments	
1-10	DARK				15m	binby 2	
11-20	BIAS				0s		
21-30	FLAT				12s		
31-40	BIAS				0s	binby 4	
41-50	FLAT				0s		
51	HD192281	20 12	40 15	R 56	7s		
52	comp			↑			
53	H5866	15 06	55 45	R 57	3m		
54	comp			↑			
55	92199.26	16 14	40 23	R 64	12m	bright object to the east binby 2	
56	comp			↑			
57	92199.27	16 14	36 31	R 64	4m	binby 2	
58	comp			↑			
59	92199.28	16 14	39 30	R 64	8m	object to the west, binby 4	
60	comp			↑			
61	92199.29	16 14	37 10	R 64	3m		
62	comp			↑			
63	92199.30	16 15	37 57	R 64	5m		
64	comp			↑			
65	92199.31	16 15	41 24	R 64	4m	bright object to the east	
66	comp			↑			
67	92199.32	16 15	42 56	R 64	3m		
68	comp			↑			
69	92199.33	16 15	38 35	R 64	5m		
70	comp			↑			
71	SN1998dx	18 11	49 51	R 2	20m		
72	comp			↑			
73	2M192809.0p	19 29	21 52	R 68	10m	star? PROBABLY	
74	comp			↑			
75	2M234643.4p	23 46	28 02	R 68	7m		

60 inch Telescope Log
 Observer: CALKINS
 PI: Huchra

Spectrograph: FAST
 Grating: 500L
 Date: 9/23/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
76	comp			↑		
77	2M230937.5p	23 09	15 02	#68	5m	
78	comp			↑		
79	1m234545.6p	23:45:46	29:36	#68	5m	
80	comp			↑		
81	2M234413.6p	23:44	29:36	#68	3m	
82	comp			↑		
83	1M234249.7p	23:42	15:21	#68	5m	
84	comp			↑		
85	2M234203.3p	23:42	16:04	#68	3m	
86	comp			↑		
87	2M234605.6p	23:46	25:42	#68	5m	
88	comp			↑		
89	2M235941.9p	23:59	29:36	#68	3m	
90	comp			↑		
91	2M234738.2p	23:47	28:26	#68	4m	star in field
92	comp			↑		
93	2M231256.2p	23 07	15 25	#68	3m	
94	comp			↑		
95	2M230807.8p	23 08	16 24	#68	5m	
96	comp			↑		
97	2M230931.0p	23 09	15 00	#68	6m	
98	comp			↑		
99	2M230211.7p	23 02	14 28	#68	4m	
100	comp			↑		
101	2M230616.4p	23 06	13 18	#68	3m	
102	comp			↑		
103	2M230759.5p	23 57	29 16	#68	3m	
104	comp			↑		
105	2M230343.0p	23 03	13 54	#68	5m	

60 inch Telescope Log

Observer: CALICINS

PI: Huchra

Spectrograph: FAST

Grating: 300L

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Date: 9/23/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
106	comp			↑		
107	2M234342.0p	23 43	17 39	↑	4m	
108	comp			↑		
109	2M234738.3p	23 47	27 31	↑	12m	object to the west
110	comp			↑		
111	2M230734.2p	23 07	11 53	↑	3m	
112	comp			↑		
113	2M230737.9p	23 07	15 45	↑	7m	
114	comp			↑		
115	2M230146.5p	23 01	13 32	↑	3m	
116	comp			↑		
117	2M230317.9p	23 03	17 41	↑	4m	star to the east
118	comp			↑		
119	2M230641.7p	23 06	15 27	↑	4m	
120	comp			↑		
121	2M231024.8p	23 10	12 50	↑	3m	
122	comp			↑		
123	2M230845.9p	23 08	13 55	↑	4m	
124	comp			↑		
125	2M234021.1p	23 40	16 22	↑	4m	
126	comp			↑		
127	2M234449.1p	23 44	12 19	↑	5m	
128	comp			↑		
129	2M230518.2p	23 05	13 35	↑	5m	
130	comp			↑		
131	2M230408.2p	23 04	15 06	↑	4m	
132	comp			↑		
133	2M234620.4p	23 46	29 06	↑	4m	
134	comp			↑		
135	2M235802.7p	23 58	27 41	↑	4m	

60 inch Telescope Log
 Observer: CALKINS
 PI: Hickson, Mahdavi, Kirshner, Barken
 Spectrograph: FAST
 Grating: 500L
 Date: 9/23/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
136	comp			↑		
137	210234752-2p	23 47	28 11	#68	7m	No more 23h!!
138	comp			↑		
139	ss26312.167	23 48	-2 34	#59	5m	bright object to the east
140	comp			↑		
141	ss26312.168	23 48	-2 32	#59	9m	
142	comp			↑		
143	ss26312.169	23 48	-2 24	#59	6m	
144	comp			↑		
145	ss26312.170	23 48	-2 25	#59	90s	
146	comp			↑		
147	ss26312.171	23 48	-2 33	#59	15m	bright star to NW
148	comp			↑		
149	ss26312.172	23 48	-1 30	#59	4m	
150	comp			↑		
151	ss26312.173	23 48	-2 08	#59	15m	
152	comp			↑		
153	ss26312.174	23 48	-2 21	#59	20m	
154	comp			↑		
155	ss26312.175	23 48	-1 44	#59	15m	
156	comp			↑		
157	ss26312.176	23 49	-00 59	#59	17m	object to the west
158	comp			↑		
159	sn1998dt	2 28	-10 33	#2	20m	Dinky @
160	comp			↑		
161	Feige 25	2 38	5 29	#56	2m	
162	comp			↑		
163	sofal-170	2 23	32 09	#73	10m	
164	comp			↑		
165	sofal-171	2 23	32 11	#73	12m	

60 inch Telescope Log
 Observer: CALKINS
 PI: Parton, Garcia,
 Spectrograph: FAST
 Grating: 3006
 Date: 9/25/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
166	comp			↑		
167	soqal-172	2 25	42 05	#73	15m	
168	comp			↑		
169	soqal-173	2 25	42 01	#73	7m	
170	comp			↑		
171	soqal-180	2 34	32 56	#73	5m	
172	comp			↑		
173	soqal-181	2 34	32 57	#73	10m	
174	comp			↑		
175	soqal-186	2 28	41 39	#73	7m	
176	comp?			↑		
177	soqal-207 & 208	3 41	-1 18	#73	20m	PA=17°, Ninky 2
178	comp			↑		
179, 180	CIC am	4 19	55 59	#107	20, 90s	PA=90°!!
181	comp?			↑		
182	soqal-187	2 28	41 40	#73	11m	
183	comp			↑		
184	soqal-188	2 41	8 44	#73	8m	
185	comp			↑		
186	soqal-189	2 41	8 43	#73	8m	
187	comp			↑		
188	soqal-190	2 43	32 28	#73	5m	
189	comp			↑		
190	soqal-209	3 59	6 41	#73	5m	
191	comp			↑		
192	Hiltner 650	6 25	2 08	#56	1m	
193	comp			↑		
194	HD 52911	7 00	27 10	#57	5s	
195	comp			↑		
196-200	sky			#56	5s	

60 inch Telescope Log
 Observer: Pberlmd
 PI: Huchra & Song-Stuffer
 Spectrograph: FAST
 Grating: 300L + 1200L
 Date: 9/28/98
 Page: 6545

Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-10	BDIS				0s	
11-20	FLAT				6s	mostly clear
21-30	BDIS				0s	
31-40	FLAT				12s	
41-50	sky				2s	
46	COMP				5s	
47-49	HDA 92281	20:10		56	4s	3000, tilt = 60°
50	COMP			r		
51	ZM170544.3	17:05	+22:14	68	3m	
52	COMP			r		
53	ZM174820.2	17:48	+17:46	68	4m	extra gal to W
54	COMP			r		
55	ZM170927.3	17:29		68	3m	
56	COMP			r		
57	ZM170100.6	17:01	+22:10	68	3m	
58	COMP			r		
59	ZM174510.5	17:56	+22:28	68	3m	
60	COMP			r		
61	SN1998dk	18:41	+49:51	2	20m	
62	COMP			r		
63-72	Focus test					1200L, 1.5" slit, tilt = 35°
73-78	HDA 92281	20:10		108	20s	z = 6600
79	COMP			r		
78-80	HIS1431			108	10s	
81	COMP			r		
82-83	HIS1431 AB			108	60s	
84	COMP			r		
85-86	HIS1431B			108	90s	PA-S
87	COMP			r		

NO BIN BY 4 DARKS !

60 inch Telescope Log

Observer: PB
 PI: Smy

Spectrograph: PAST
 Grating: 300-1200
 Date: 9/28/98

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Number	Object	R. A.	Dec.	L/R	Exp	Comments
86-89	HD161289A			108	10s	12000/mm grating ↓
90	COMP			↑		
91-92	HD161289B			108	12s	
93	COMP			↑		
94-95	HD162917			108	10s	
96	COMP			↑		
97-98	HD162917B			108	2m	
99	COMP			↑		
100-101	HD186307	19.41	+10.15	108	10s	
102	COMP			↑		
103-105	HD186307B	19.41	+10.15	108	10m	☉ ← N
106	COMP			↑		
107-109	HD192445	20.14	+15.11	108	5s	
110	COMP			↑		
111-112	HD192425B	20.14	+15.11	108	3m	
113	COMP			↑		
114-117	HD211338B			108		
118	COMP			↑		
119-120	HD211338C			108	7m	
121	COMP			↑		
122-123	HD211338D	22.14	+57.07	108	35m	
124	COMP			↑		
125-127	HD212523					☉ - PA=90
128	COMP					
129-130	HD21883				90s	☉ too close
131	COMP					
132	BDp23424	21.46	+28	108	3m	
133	COMP			↑		
134-13	BDp651537	21.45	+66.22	108	2m	
135	COMP			↑		

60 inch Telescope Log
 Observer: PB
 PI: Singh Mahdavi
 Spectrograph: F15T
 Grating: 120-30
 Date: 9/28/98
 Page: 6547

Number	Object	R.A.	Dec.	L/R	Exp	Comments
127	LKHA349	21:36	+57:31	108	2.5m	1200 @ ↓
128	COMP			r		
139	LKHA233	22:34	+40:10	108	3m	
140	COMP			r		
141-142	DISCep	22:56	+58:40	108	2m	
143	COMP			r		
144-144	F15T				60s	
150-151	DDp284211	21:48	+28:37	56	30s	3W2, 3" slit
152	COMP			r		
153	SS 26372-177	23:49	-02:17	59	5m	
154	COMP			r		
155	.178	23:49	-02:16	59	4m	
156	COMP			r		
157	.179	23:49	-02:25	59	6m	underexposed
158	COMP			r		
159	.180	23:49	-02:13	59	5m	
160	COMP			r		
161	.181	23:50	-02:10	59	8m	
162	COMP			r		
163	.182	23:50	-02:11	59	3m	
164	COMP			r		
165	.183	23:50	-02:55	59	6m	
166	COMP			r		
167	.184	23:50	-02:07	59	6m	
168	COMP			r		
169	.185	23:51	-02:49	59	2m	
170	COMP			r		
171	.186	23:51	-02:50	59	6m	
172	COMP			r		

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>6548</u>	
Observer: <u>PB</u>		Grating: <u>30</u>		Date: <u>9/25/98</u>			
PI: <u>Mahdavi & Barton</u>							
Number	Object	R.A.	Dec.	L/R	Exp	Comments	
173	SS2632.187	23:51	-02:46	S9			
174	COMP			T			
175	.188	23:52	-01:59	S9	11m		
176	COMP			T			
177	.161	23:47	-01:05	S9	12m	LSB em	
178	COMP			T			
179	.133	23:43	-03:13	S9	15m	LSB wk em	
180	COMP			T			
181	.134	23:49	-02:47	S9	15m	LSB em ok!	
182	COMP			T			
183	.135	23:44	-02:06	S9	15m	LSB prob em	
184	COMP			T			
185	SN198dt	02:28	-10:72	Z	20m		
186	COMP			T			
187	Sogal 191	02:43	+72:20	73	17m		
188	COMP			T			
189	Sogal-194-195	02:51	+13:11	73	18m	2 gals; bin by 2; PA-5	
190	COMP			T		194 @ 100 ⁰⁰ ; 195 @ 100 ⁰⁰	
191						1200 ⁰⁰ ; 1.5" slit ↓	
192-194	HD1746				4s		
195	COMP						
196-197	HD30874	01:26	-8:26	108	1s		
198	COMP			T			
199-200	HD15407	02:30	+55:32	108	4s		
201-203	HD15407B ...	02:30	+55:32	108	2m		
204	COMP			T			
205-207	HD 17206	02:43	-18:34	108	1s		
208	COMP			T			

60 inch Telescope Log
 Observer: PB
 PI: Smy
 Spectrograph: FAST
 Grating: 1200
 Date: 9/28/98
 Page: 6549

Number	Object	R.A.	Dec.	L/R	Exp	Comments
209-21	HD 7706 D	02:45	-18:58	108	2m	fainter star to W in slit
212	COMP			↑		12000 ↓
213-215	HD 22610	03:4	-29:05	108	1s	
216-219	HD 22610 B	03:11	-29:05	108	30s-2m	
	COMP			↑		
220-222	HD 22610 C	03:11	-29:10	108	1m	
223-225	HD 22610 D	03:11	-29:09	108	5s	
226	COMP			↑		
227-228	HD 22610 E	03:11	-29:05	108	2m	
229-231	HD 22610 F	03:11	-29:05	108	10s	
232-233	HD 22610, scat	03:11	-29:05	108	10s	not much scat. light
234	COMP			↑		
235-237	HD 29573	04:38	-12:07	108	2s	
238	COMP			↑		
239-241	HD 29573 B	04:38	-12:12	108	15s-2m	
242	COMP			↑		
243-244	HD 33949	05:13	-12:56	108	6	PA=90
245-246	HD 33949 B	05:13	-12:56	108	90s	lots of scattered light
248	COMP					
249-250	HD 33673	05:46	-14:58	108	1s	
251-253	HD 33673 B	05:46	-14:57	108	2m	
254	COMP			↑		
255-256	HD 33673 C	05:47	-14:57	108	90s	
257-258	HD 33673 D	05:46	-14:57	108	90s	
259-260	HD 33673 E	05:47	-14:55	108	2m	
261	COMP			↑		
262-263	HD 40532	06:02	+4:32	108	1s	
264-267	HD 40532	06:02	+06:32	108	2m	
268	COMP			↑		

60 inch Telescope Log
 Observer: PB
 PI: Song & Kirshner
 Spectrograph: FAST
 Grating: 1200/320
 Date: 9/28/98
 Page: 6550 (12)

Number	Object	R. A.	Dec.	L/R	Exp	Comments
269-271	HD18682	06:46	+45:34	108	15	
272	COMP			↑		
273-274	HD186213	06:48	+45:42	108	3m	
275	COMP			↑		
276-278	HD17647	07:11	+45:18	108	90/45s	
279	COMP			↑		
280-281	HD237057	07:50	+60:24	108	45s	
282	COMP			↑		
283-284	HD2169	07:51	+47:54	108	60s	
285	COMP			↑		
286-288	CICam	04:49	+55:55	107	20s	300Ω; 3" slit ↓
289	COMP			↑		
290	SN1980c	06:53	+50:02	2	15s	
291	COMP			↑		
292	B6Cem	06:03	+27:41	700	5m	
293	COMP			↑		
294-295	G1912B	05:01	+52:45	56	2m	
296	COMP			↑		
297-299	HD52971	06:57	+27:13	57	4s	thin clouds all over @ dawn
300	COMP			↑		
301-310	BRMS				0s	
311-320	FLAT				6s	
321-330	BRMS				0s	
331-340	FLAT				12s	
341-350	FLAT			108	70s	1200Ω; 1.5" slit
351-360	DARK					BIN BY 2

60 inch Telescope Log
 Observer: P. Berland
 PI: Sony/Stauffer
 Spectrograph: FAST
 Grating: 1200B
 Date: 9/29/98
 Page: 6551

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				20m	1200g; 1.5" slit bnbjz
11-20	BD15				0s	$\lambda_c = 6600 \text{ \AA}$
21-30	FLAT				70s	clear skies!
31-33	HD125162	14:16	+46:05	108	6	bright moon
34	COMP			↑		
35-37	HD125162B	14:15	+45:55	108	90s	
38	COMP			↑		file headers do not
39-41	HD126128	14:23	+64:26	108	4s	have project numbers,
42-44	HD126128B	14:23	+64:26	108	75s	after system crash.
45	COMP			↑		Restart no help.
46-47	HD127506	14:30	+35:27	108	30s	#'s put in by hand
48	COMP			↑		
49-51	HD127506B	14:30	+35:12	108	4m	
52	COMP			↑		
53-55	HD139006	15:34	+26:42	108	4s	
56	COMP			↑		
57-59	HD139006B	15:34	+26:42	108	90s	
60	COMP			↑		
61-65	HD163296	17:56	-21:57	108	15s	shell*
66	COMP			↑		
67-69	HD163296B	17:56	-21:57	108	35s	
70	COMP			↑		
71-73	HD172028AB	18:57	+10:23	108	15s	unresolved pair
74	COMP			↑		
75-77	HD192281	20:10	+40:07	108	15s	
78	COMP			↑		
79-80	BD125121	21:48	+28:37	108	4m	
81	COMP			↑		
82-84	HD240000	22:38	+55:50	108	30s	extra + to E in slit
85-87	HD240101B	22:38	+55:50	108	2m/1m	+ to W

<p>60 inch Telescope Log</p> <p>Observer: <u>PB</u></p> <p>PI: <u>Stauffer & Hutchins</u></p>	<p>Spectrograph: <u>FAST</u></p> <p>Grating: <u>1200 R; 300 R</u></p> <p>Date: <u>9/29/98</u></p> <p style="text-align: right;">Page: <u>6552</u></p>
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
88	COMP			↓		1200 R; 1.5" slit ↓
89-90	H1D240010C	22:38	+55:50	108	8m	
91	COMP			↑		
92-93	H1D210344	23:37	+16:23	108	45s	
94	COMP			↑		
95-96	H1D221741	23:39	+16:26	108	45s	
97	COMP			↑		
98	BMAnd	23:37	+16:24	108	8m	
99	COMP			↑		
100	COMP			↓	8s	300 R; 1.1" slit ↓
101-102	411907p09	19:09	+09:45	104	15m	bin by 4
103	COMP			↑		
104-105	H1D230579	19:01	+11:01	104	20s, 10s	
106	COMP			↑		
107-108	1SDp23424	21	+28	56	30s	3" slit ↓
109	COMP			↑		
110	N7351	22:54	+34:09	57	3m	
111	COMP			↑		
112	ZM004204.6	00:43	+23:30	68	2m	
113	COMP			↑		
114	ZM005445.1	00:51	+16:26	68	4m	
115	COMP			↑		
116	ZM0005.1	10:05	+22:07	68	2m	
117	COMP			↑		
118	ZM062037.3NW	00:20	+28:39	68	6m	
119	ZM02037.3 SE	10:20	+28:39	68	8m	
120	COMP			↑		

60 inch Telescope Log
 Observer: PB
 PI: Huchra
 Spectrograph: FAST
 Grating: 300L
 Date: 9/29/98
 Page: 6553

Number	Object	R.A.	Dec.	L/R	Exp	Comments
121	ZM004223.6	00:42	+18:49	68	2m	
122	OMP			↑		
123	ZM004045.3	00:40	+27:52	68	3m	
124	OMP			↑		
125	ZM003912.9	00:39	+23:19	68	3m	
126	OMP			↑		
127	ZM005620.7	00:56	+13:51	68	5m	
128	OMP			↑		
129	ZM003832.1	00:38	+23:36	68	3m	
130	OMP			↑		
131	ZM004003.2	00:40	+23:48	68	5m	
132	OMP			↑		
133	ZM003928.5	00:39	+21:13	68	5m	bright star to NW; scattered light
134	OMP			↑		
135	ZM004175.5	00:47	+18:52	68	4m	
136	OMP			↑		
137	ZM005556.0	00:55	+17:17	68	5m	
138	OMP			↑		
139	ZM002016.7	00:20	+27:28	68	4m	
140	OMP			↑		
141	ZM003549.9	00:35	+19:24	68	4m	
142	OMP			↑		
143	ZM003930.7	00:39	+23:04	68	3m	
144	OMP			↑		
145	ZM000549.5	00:05	+17:21	68	3m	
146	OMP			↑		
147	ZM000823.2	00:08	+20:27	68	5m	
148	OMP			↑		
149	ZM003347.3	00:33	+19:59	68	3m	
150	OMP			↑		

60 inch Telescope Log
 Observer: PB
 PI: Huhtera
 Spectrograph: FAST
 Grating: 300R
 Date: 9/29/98
 Page: 6554

Number	Object	R.A.	Dec.	L/R	Exp	Comments
151	2M004330.2	00:43	+21:57	68	4m	
152	COMP			↑		
153	2M004940.9	00:49	+22:04	68	4m	
154	COMP			↑		
155	2M003638.1	00:30	+21:54	68	4m	
156	COMP			↑		
157	2M002611.3	00:26	+13:34	68	8m	
158	COMP			↑		
159	2M003803.8	00:38	+23:24	68	4m	
160	COMP			↑		
161	2M004443.4	00:44	+21:46	68	5m	
162	COMP			↑		
163	2M005915.2	00:59	+13:34	68	4m	
164	COMP			↑		
165	SS26312.135	23:44	-02:06	59	20m	also obs 9/28/98 *123
166	COMP			↑		Hk ok p12 2038
167	SN1998dk	00:41	-02:44	2	20m	
168	COMP			↑		
169	SN1998dm	01:26	-06:06	2	15m	
170	COMP			↑		
171	PG0205p134	02:05	+13:22	56	7m	
172	COMP			↑		
173	225m200	00:41	+41	57	4m	
174	COMP			↑		
175-177	CISCam	04:19	+55:59		5s, 1m, 1s	
178	COMP					
179-180	HDS751	00:56	+19:02	108	45s	12000, 1.5" slit
181	COMP			↑		

4560-KFMA-5762

60 inch Telescope Log
 Observer: PB
 PI: Sing / Skutter
 Spectrograph: FAST
 Grating: 1200R
 Date: 9/29/98
 Page: 6555

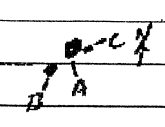
Number	Object	R.A.	Dec.	L/R	Exp	Comments
182-193	HD5702	02:59	+62:15	108	60s	1200R: 1.5" slit
184	COMP			f		$T_c = 6600A$
185-186	BDP62137	01:06	+63:56	108	45s	
187	COMP			f		
188-189	HD10032	01:38	+40:45	108	60s	
190	COMP			f		
191-192	HD13505	02:13	+58:44	108	45s	
193	COMP			f		
194-195	HD9716	01:38	+48:43	108	45s	strong Li
196	COMP			f		
197-198	HD7647	02:51	+45:48	108	45s	
199	COMP			f		
200-202	HD23707	02:50	+60:24	108	45s	
203	COMP			f		
204-205	HD21619	03:31	+49:54	108	60s	
206	COMP			f		
207-209	HD1055	02:17	+41:02	108	15s	
210	COMP			f		
211-212	HD1055B	02:17	+34:02	108	90s	
213	COMP			f		
214-216	HD18537	03:40	+52:21	108	3s	* in slit to E
217-219	HD18537B	03:40	+52:21	108	60s	* " W
220	COMP			f		
221-223	HD22049	03:32	-09:07	108	3s	
224	COMP			f		
225-226	HD22049B	03:32	+09:30	108	2m	
227	COMP			f		
228-230	HD22049C	03:31	-10:13	108	2m	
231	COMP			f		

468-1074

<p>60 inch Telescope Log</p> <p>Observer: <u>PB</u></p> <p>PI: <u>Song & Stauffer</u></p>	<p>Spectrograph: <u>FAST</u></p> <p>Grating: <u>12002</u></p> <p>Date: <u>9/29/98</u></p> <p style="text-align: right;">Page: <u>6556</u></p>
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
232-237	HD23324	03:45	+24:50	108	4s	12002, 1.5" slit
235-237	HD23324B	03:45	+24:50	108	90s	Li? → Plaid
238	COMP			↑		
239-241	HD23432	03:45	+24:33	108	4s	
242	HD23432B	03:45	+24:33	108	6s	
				↑		
243-244	GICan	04:19	+55:19	107	90s/5s	
245				↑		
246-248	HD30834	04:52	+76:42	108	4s	Li III
250	COMP			↑		
251-254	HD31293	04:55	+70:31	108	8s	
255-258	HD31293B	04:55	+70:31	108	1m, 3m	Li
259				↑		
260-263	HD31648	04:58	+75:50	108	4s	
264-265	HD31648B	04:58	+75:50	108	1m	
266	COMP			↑		
267-270	HD32991	05:07	+71:42	108	5s	
271-272	HD32991B	05:07	+71:42	108	1m	
273	COMP			↑		
274-276	HD35532	05:20	+16:42	108	5s	
277-279	HD35532	05:20	+16:42	108	90s	Li
280	COMP			↑		
281-282	HD36267	05:30	+05:56	108	1s	
283-284	HD36267B	05:30	+05:54	108	1m	
285	COMP			↑		
286-288	HD37269	05:38	+70:29	108	2s	PA=3
289-291	HD37269B	05:38	+70:25	108	1m-2m	
293-295	HD37269C	05:38	+70:29	108	5m	
292-297	COMP			↑		

296 = scattered light exp - blank! (good)



60 inch Telescope Log

Observer: PBPI: Sony & Stueffer et alSpectrograph: FASTGrating: 1200L; 300LPage: 6557Date: 9/29/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
298-300	HD 34798	05:49	-18:31	108	5s	PA=90 1200L; 1.5" slit ↓
301-302	HD 34798 B	05:49	-18:30	108	8s	
303	COMP			↑		
304-305	HD 38206	05:43	-18:33	108	6s	
306-308	HD 38206 B	05:43	-18:16	106	1m	
309	COMP			↑		
310-311	105	06:18	-14:35	108	50s	HD 43954
312	COMP	06:18		↑		
313-314	A0535p26	05:38	+26:18	104	1m	300L; 1.1" slit ↓
315	COMP			↑		lin by 2 (Why?)
316-317	HD 34478	05:53	+26:25	104	30, 10s	
318	COMP			↑		
319	SN 1998ec	06:57	+50:02	2	15m	3" slit ↓
320	COMP			↑		
321	G 1912B	05:01	+52:45	56	3m	
322	COMP			↑		
323-325	HD 51055	06:55	-20:24	108	6s	1200L; 1.5" slit ↓
326-328	HD 51055 B	06:55	-20:24	106	20s	
329	COMP			↑		
330-332	hi 468	03:49	+24:06	108	1s	Pleiades ↓
333	COMP			↑		
334-335	hi 2488	03:49	+24:20	108	30s	
336	COMP			↑		
337	hi 348	03:47	+24:23	108	4m	
338	hi 1514	03:47	+24:21	108	3m	
339	COMP			↑		

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>6558</u>
Observer: <u>PB</u>		Grating: <u>1200R + 300R</u>		Date: <u>9/29/98</u>		
PI: <u>Sony & Stauffer</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
340	hii 2711	03:49	+22:42	108	4m	1200R, 1.5" slit ↓
341	hii 307	03:49	+24:50	108	5m	
342	COMP			↑		
343	hii 948	03:46	+23:07	108	1m	
344	hii 605	03:45	+24:55	108	1m	
345	COMP			↑		clear & down
346	hii 956	03:46	+24:11	108	45s	~
347	hii 1425	03:47	+23:40	108	35s	
348	COMP			↑		
349-358	BIAS				0s	bin by 2
359-368	FLAT				70s	1200R, 1.5" slit
369-378	FLAT				40s	300R, 1.1" slit bin by 2
379-388	FLAT				12s	300R, 3" slit bin by 2
389-398	FLAT				6s	300R, 3" slit bin by 4
399-408	BIAS				0s	bin by 4
409-418	DARK				15m	
						★ End of FAST Run ★

NO 300 l/mm, 1.1" slit, bin by 4 Flats
 used 3" flats per Jeff M's instructions