★ Start of FAST Run ★

60 inch Telescope Log

Observer: PBerlind

PI: All

Spectrograph: FAST

Grating: 300l

Date: 12/9/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
H0	BIAS				0s	
11-20	FLAT				6s	
21-30	BIAS				0s	mostly clear
31-40	FLAT				12s	
4445	Sky	zenith		57	2s	
46	Comp			↑	5s	
47-49	v1624 Cyg	test		57	0.5s	
50	Comp			↑		
51-55	HD193237	20		57	1s	
56	Comp			↑		
57-59	HD202904	20		57	1s	
60	Comp			↑		
61-63	HD217050	21		57	1s	
64	Comp			↑		
65-67	HD213320	21		57	3s	
68	Comp			↑		
69-71	HD217891	22		57	1s	
72	Comp			↑		
7375	HD217086	22		56	6s	
76	Comp			↑		
77-78	BD+20424	21:48	+28·37	56	1m	
79	Comp			↑		
80-	Feige110	23:47	-05·26	56	3m	
81	Comp			↑		
8283	M32	00:39	+40·35	57	30s	
84	Comp			↑		poor seeing!
85	22Sm250	00:41	+41·05	57	5m	
86				↑		
87	2M0150003.5	01:50	+33:24	68	6m	
88	Comp			↑		

60 inch Telescope Log
Observer: PB
PI: Huchra

Spectrograph: FAST
Grating: 300l
Date: 12/9/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
89	2M0147077	01:47	+31:46	68	6m	
90	comp			↑		
91	2M0146087	01:46	+32:25	68	6m	
92	comp			↑		
93	2M0147399	01:47	+41:36	68	7m	
94	comp			↑		
95	2M0149025	01:49	+32:33	68	10m	
96	comp			↑		
97	2M0155204	01:55	+33:07	68	6m	
98	comp			↑		
99	2M0150409	01:50	+33:09	68	6m	
100	comp			↑		
101	2M0153297	01:53	+32:57	68	6m	6m by 2: M * close to E
102	comp			↑		gal-em
103	2M0155227	01:55	+40:04	68	6m	* to E
104	comp			↑		
105	SN1998cy	21:30	+26:43	2	20m	waited for seeing to get
106	comp			↑		better; but it is still poor.
107	2M0149491	01:49	+41:41	68	10m	em
108	comp			↑		
109	2M0150197	01:50	+32:09	68	10m	
110	comp			↑		look for new SN in N925
111	2M0150577	01:50	+32:57	68	6m	ok → not there ← ↑
112	comp			↑		
113	2M0155213	01:55	+41:42	68	7m	* to W
114	comp			↑		
115	2M0151009	01:51	+32:53	68	9m	
116	comp			↑		
117	SN1998es	01:37	+05:52	2	15m	tilt=595; PA=12
118	comp			↑		

PA=12

60 inch Telescope Log
Observer: PB
PI: Huchra

Spectrograph: FAST
Grating: 300@ ; 3" slit
Date: 12/9/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
119	2M0203148	02:03	+19:43	68	4m	tilt=610.0 ; PA=90
120	COMP			↑		
121	2M0213060	02:13	+22:51	68	4m	
122	COMP			↑		
123	2M0211553	02:11	+22:35	68	4m	
124	COMP			↑		
125	2M0229349	02:29	+22:56	68	4m	
126	COMP			↑		
127	2M0213013	02:13	+22:57	68	4m	
128	COMP			↑		
129	2M0225429	02:25	+25:47	68	4m	
130	COMP			↑		
131	2M0227340	02:23	+26:33	68	4m	Center gal to E
132	COMP			↑		
133	2M0203195	02:03	+19:51	68	4m	
134	COMP			↑		
135	2M0249506	02:49	+13:04	68	4m	
136	COMP			↑		
137	2M0255457	02:55	+30:45	68	4m	* to E
138	COMP			↑		
139	2M0249155	02:49	+29:57	68	4m	
140	COMP			↑		
141	2M0236254	02:36	+33:34	68	4m	
142	COMP			↑		
143	2M0222377	02:22	+25:56	68	5m	* to W
144	COMP			↑		
145	2M0200045	02:00	+23:45	68	4m	
146	COMP			↑		
147	2M0223068	02:23	+12:51	68	4m	
148	COMP			↑		

60 inch Telescope Log
Observer: PB
PI: Mike

Spectrograph: FAST
Grating: 300@
Date: 12/9/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
149	2M0248138	02:48	+18:13	68	4m	162
150	COMP			↑		N
151-2	HLXZTau	04:31	+18:13	57	3m	E i i
153	COMP			↑		xz 11k
154-156	CICam	04:19	+55:59	107	2s-10s	
157	COMP			T		clouds
158	BGGem	06:05	+27:41	100	6m	
159	COMP			↑		
160,162	G191B2B	05:01	+52:45	56	~~2m~~ 10m	PA=30; tilt=595 -117
161,163	COMP			↑		clouds - heavy
164-173	FLAT				15s	tilt=595
174-183	FLAT				20s	tilt=6100; Slit=1.1"
184-187	A0535p26	05:38	+26:18	104	40s-90s	PA=90
188	COMP			T		
189-190	HD39478	05:53	+26:25	104	60s	clouds
191	COMP			T		
192,193	NGC720	01:56	-01:52	57	6m	3" slit; tilt=6100; PA=90
194,196	COMP			T		many clouds.
197	07499,6259A	07:49	+62:59	66	3m	
198	COMP			T		
199	9539.051356	05:13	+05:08	64	~~20m~~	13m stopped by clouds (red)
200	Comp			T		
201	9539.69359	05:13	+02:18	64	10m	brt & to E in slit √, poor
202	COMP			T		em ok; big cosmic
203	9539.051406	05:14	+06:31	64	12m	good em; cosmic near 11k (in)
204	COMP			↑		stop + go
205	9539.051411	05:14	+01:52	64	12m	
206	COMP			T		SNOWING!

207-216	BIAS	
217-226	FLAT	0s
227-236	BIAS	7s
237-246	FLAT	0s
247-256	DARK	14s

60 inch Telescope Log
Observer: PBerlind
PI: Dan K

Spectrograph: FAST
Grating: 300l
Date: 12/10/98

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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	mountain clouds
31-40	BIAS				0s	windy
41-50	FLAT				12s	cold.
51-55	Sky			57	2s	
56	Comp			↑		open @ 7:30
57-60	DARK			—	20m	poor seeing
61	Fegelle	22:15	-05	56	4m	
62	Comp			↑		
63	N7331	22:34	+34:09	57	4m	
64	Comp			↑		
65	2M 01503514	01:50	+33:13	68	15m	
66	Comp			↑		
67	2M 01495846	01:49	+40:12	68	12m	
68	Comp			↑		
69	2M 01545466	01:54	+37:55	68	15m	7m close - high wind
70	Comp			↑		seeing > 5"
						a few attempts
71	awm1_20	09:17	+2014	35	5m	4m try again
72	Comp			↑		
73	21	09:17	+20:27	35	10m	
74	Comp			↑		
75	22	09:18	+20:24	35	10m	te to W
76	Comp			↑		
77	23	09:17	+20:05	35	10m	poor seeing!
78	Comp			↑		
79	24	09:19	+19:36	35	15m	em fainter comp gal to E
80	Comp			↑		
81	25	09:17	+19:55	35	12m	(redo) wk.
82	Comp			↑	0s	
83-92	BIAS				7s	
93-102	FLAT					

60 inch Telescope Log
Observer: Calkins
PI: Ali, Huchra

Spectrograph: FAST
Grating: 300 L
Date: 12/11/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	Bias				0s	
11-20	Flat				60s	
21-30	Flat				200s	1.1" slit
31-40	Bias				0s	binby 2
41-50	FLAT				12s	"
51-55	sky			#57	2s	
56	comp			↑		
57	H1922281	20 12	40 16	#C6	5s	
58	comp			↑		
59	N7331	22 37	34 24	#57	4m	
60	comp			↑		
61	3C390.3	18 91	79 45	#6	12m	
62	comp			↑		
63	MRK509	20 44	-10 43	#6	3m	seeing seems poor
64	comp			↑		
65	N7469	23 03	8 53	#6	2.5m	binby 2, star east
66	comp			↑		
67	MRK335	00 06	20 11	#6	3m	
68	comp			↑		
69	2M022913.9p	02 29	22 58	#68	9m	
70	comp			↑		
71	2M023895.1p	2 38	14 41	#68	13m	
72	comp			↑		
73	2M021582.1p	2 15	23 22	#68	4m	
74	comp			↑		
75	2M020802.9p	2 08	28 19	#68	10m	
76	comp			↑		
77	2M024105.1p	2 41	17 45	#68	3m	
78	comp			↑		
79	2M022303.1p	2 23	25 25	#68	9m	

60 inch Telescope Log
Observer: Calkins, McClintock
PI: Huchra, Kirshner, Kurany
Spectrograph: FAST
Grating: 300l
Date: 12/11/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
80	comp					
81,82	sn1998ey	21 10	26 92	#2	20m	star to the east
83	comp			↑		PA = 72.0°
84	BDp284211	21 51	78 50	#56	30s	PA = 94.0°
85	comp			↑		
86	sn1998es	01 39	05 51	#2	15m	PA = 5°, galaxy west
87	comp			↑		
88	PG0205p134	2 08	13 38	#56	2m	
89	comp			↑		
90	awm7_4.001	3 03	40 47	#35f	20m	very faint
91	comp			↑		
92	awm7_4.002	3 02	40 54	#35f	20m	binby 2, bright star
93	comp			↑		to the east
94	awm7_4.003	3 03	40 58	#35f	20m	
95	comp			↑		
96	awm7_4.004	3 02	40 58	#35f	20m	object to the west
97	comp			↑		
98	awm7_4.005	3 03	41 03	#35f	20m	binby 2, 2 objects
99	comp			↑		west, one object east
100	awm7_4.006	3 03	41 10	#35f	15m	
101	comp			↑		
102	awm7_4.007	3 03	41 17	#35f	20m	bad spectra, (Sorry,
103	comp			↑		Susan!)
104	awm7_4.008	3 03	41 36	#35f	10m	
105	comp			↑		
106	comp			↓		
107,108	AO535p26	5 38	26 18	#104	30s	
109	comp			↑		
110,111	HD39478	5 54	26 25	#104	10s	
112	comp			↑		

N

96 - object is E, not WNW E

60 inch Telescope Log
Observer: Calkins
PI: Garcia, Kirk

Spectrograph: FAST
Grating: 300 & 1200L
Date: 12/11/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
111 - 115	CI-Cam	4 19	55 59	#109 ↑	2,20?0	
116	comp					
117	053121m0016	5 31	-00 16	#109 ↑	20m	1200 line grating
118	comp					1.5" slit, tilt = 345
119	053628m0126	05 36	-01 26	#109 ↑	7m	
120	comp					
121	053126m0018	5 31	-00 18	#109 ↑	10m	
122	comp					seeing has dramatically
123	053127m0020	5 31	-00 20	#109 ↑	7m	improved.
124	comp					
125	053130m0012	05 31	-00 11	#109 ↑	5m	
126	comp					
127	053134m0021	05 31	-00 21	#109 ↑	10m	
128	comp					
129	053143m0031	05 31	-00 31	#109 ↑	7m	
130	comp					
131	053144m0020	05 31	-00 20	#109 ↑	15m	} bright star to the
132	comp					} east
133	053145m0016	05 31	-00 15	#109 ↑	15m	
134	comp					
135	053146m0031	05 31	-00 31	#109 ↑	20m	
136	comp					
137	053147m0013	5 31	-00 12	#109 ↑	15m	
138	comp					
139	053147m0027	5 31	-00 27	#109 ↑	10m	
140	comp					
141	053148m0031	5 32	-00 31	#109 ↑	10m	
142	comp					
143	053204m0004	05 32	-0003	#109 ↑	12m	
144	comp					

60 inch Telescope Log
Observer: Calkins
PI: Koranyi, Kirshner

Spectrograph: FAST
Grating: 300 l
Date: 12/11/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
145	gwm1-025	9 17	A 55	#35	4m	
146	comp			↑		
147	gwm1-026	9 18	20 43	#35	8m	
148	comp			↑		
149	gwm1-027	9 18	20 44	#35	8m	
150	comp			↑		
151	gwm1-028	9 18	20 15	#35	10m	
152	comp			↑		
153	gwm1-029	9 17	19 51	#35	7m	
154	comp			↑		
155	gwm1-030	9 17	20 02	#35	4m	
156	comp			↑		
157	gwm1-031	9 19	19 48	#35	4m	
158	comp			↑		
159	gwm1-032	9 16	19 55	#35	12m	
160	comp			↑		
161	gwm1-033	9 17	20 02	#35	2m	
162	comp			↑		
163	gwm1-034	9 19	19 59	#35	5m	
164	comp			↑		
165-167	sn1998S	11 45	47 28	#2	20m	PA = 72°, Binby 2
168	comp			↑		
169	GD140	11 37	29 47	#56	2m	PA = 79°, Binby 2
170	comp			↑		
171	GD140	11 37	29 47	#56	2m	Binby 4
172	comp					
173-182	BIAS				0s	
183-192	FLAT				60s	
193-202	BIAS				0s	
203-212	FLAT				12s	

213-222 FLAT 45s - 1200 lpm, 1.5" sl
345 tilt, 1040 foc

223-232 DARK 15m

60 inch Telescope Log
Observer: CALKINS
PI: AGL, Hudra,

Spectrograph: FAST
Grating: 300l
Date: 12/12/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-6	DARK				15m	
7-16	BIAS				0s	
17-26	FLAT				6s	
27-36	BIAS				0s	
37-46	FLAT				12s	
47-56	FLAT				45s	1200 1pm, 1.5", 345 tilt
57-61	sky			#57	2s	Hard focus.
62	comp			↑		
63	Feige110	23 19	-5 09	#56	2.5m	
64	comp			↑		
65	N7331	22 37	34 24	#57	3 m	
66	comp			↑		
67	2M2301157.5p	23 01	22 36	#68	10m	seeing poor
68	comp			↑		
69	2M2302236.5p	23 02	22 49	#68	12 m	
70	comp			↑		
71	2M2302237.8p	23 02	12 25	#68	10m	object to the east of star (stellar)
72	comp			↑		
73	2M2302323.2p	23 03	17 09	#68	8m	
74	comp			↑		
75	2M2303148.4p	23 03	20 24	#68	10m	
76	comp			↑		
77	2M2303250.8p	23 03	19 55	#68	7m	
78	comp			↑		
79	2M2304023.7p	23 04	20 16	#68	10m	
80	comp			↑		
81	2M2304227.0p	23 04	21 11	#68	20m	
82	comp			↑		
83	2M2304251.1p	23 04	19 26	#68	12m	
84	comp					

60 inch Telescope Log
Observer: CALKINS
PI: Huchra, Koranyi, Garcia, Geller

Spectrograph: FAST
Grating: 300l, 1200l
Date: 12/12/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
85	2m2304447.4p	23 04	19 36	R 68	12m	
86	comp			↑		
87	2m2305210.1p	23 05	21 03	R 68	20m	
88	comp			↑		
89	sn1998as	01 37	05 52	R 2	15m	
90	comp			↑		
91	PG0205p134	02 08	13 39	R 56	2m	
92	comp			↑		
93	awm7-4.010	03 03	42 15	R 35f	12m	
94	comp			↑		
95	awm7-4.011	3 02	42 12	R 35f	20m	stellar ? 24th superposed star ??
96	comp			↑		
97	awm7-4.013	2 53	42 57	R 35f	20m	
98	comp			↑		
99-101	CICam	4 19	55 59	R 107	4,20,90	
102	comp			↑		
103-104	CICam	4 19	55 59	R 107	5,7m	1200 l, 280.0 tilt (w 0.45 inch spacer
105	comp			↑		
106	a539.051406	5 14	5 19	R 64	20m	
107	comp			↑		
108	a539.051409p	5 14	4 21	R 64	20m	
109	comp			↑		
110	a539.051419p	5 14	1 47	R 64	20m	
111	comp			↑		
112	a539.051419p	5 14	5 11	R 64	7m	superposed star
113	comp			↑		
114	a539.051421p	5 14	8 23	R 64	10m	
115	comp			↑		
116	a539.051429p	5 14	5 36	R 69	8m	object to the west
117	comp			↑		

60 inch Telescope Log
Observer: Calkins
PI: Geller, Kenyon, Wells, Barton

Spectrograph: FAST
Grating: 300l, 1200 l Page: 6772
Date: 12/12/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
118	3539-051434 p	5 14	3 48	↑64	20m	binby 2
119	comp			↑		
120	BGGem	6 03	29 41	↑100	6m	binby 2
121	comp			↑		
122	053212m0020	5 32	-00 20	↑109	15m	1200l 345 tilt,
123	comp			↑		1.5" slit, extra focus
124	053216m0021	5 32	-00 21	↑109	10m	
125	comp			↑		
126	053221m0017	5 32	-00 17	↑109	10m	
127	comp			↑		
128	053222m0028	5 32	-00 28	↑109	6m	Binby 2
129	comp			↑		
130	053226m0029	5 32	-00 29	↑109	15m	
131	comp			↑		
132	053227m0024	5 32	-00 24	↑109	15m	
133	comp			↑		
134	053228m0013	5 32	-00 13	↑109	5m	
135	comp			↑		
136	053229m0017	5 32	-00 17	↑109	5m	
137	comp			↑		
138	053245m0022	5 32	-00 22	↑109	10m	
139	comp			↑		
140	nogal-076	9 24	40 37	↑78	18m	tried to rotate for
141	comp			↑		nogal-077 but
142	nogal-062	9 24	40 38	↑73	20m	rotator is good only
143	comp			↑		+110° to -110°
144	nogal-076+077	9 39	32 21	↑73	15m	PA=71°, nogal-077
145	comp			↑		is east of 076, binby
146	nogal-078	9 43	42 28	↑73	20m	binby 2
147	comp			↑		

bright superposed star on nogal-076, but gal has em

60 inch Telescope Log
Observer: Calkins
PI: Kirshner, All

Spectrograph: FAST
Grating: 300L
Date: 12/12/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
148,149	sn1998bu	10 46	11 49	#2 ↑	20m	PA=39.0°
150	comp					
151	Feige 34	10 39	43 06	#56 ↑	3m	PA=27.0°
152	comp					
153	MRK421	11 04	38 12	#6 ↑	4m	
154	comp					
155	N4051	12 03	44 32	#6 ↑	2m	
156	comp					
157	N4258	12 18	47 18	#6 ↑	2m	
158	comp					
159	MRK279	13 52	69 18	#6 ↑	3m	
160	comp					
161	N4151	12 10	39 24	#6 ↑	30s	
162	comp					
163	Feige66	12 37	25 04	#56 ↑	45s	
164	comp					
165-174	bias				0s	
175-184	flat				60s	
185-194	bias				0s	
195-204	flat				12s	
205-214	Flat				60s	1200 L, 280 Tilt, 1040 Focus (For Mike Garcia)
215-224	Dark				15m	

60 inch Telescope Log
Observer: Calkins / Mahdavi
PI: Ali, Huchra

Spectrograph: FAST
Grating: 300L
Date: 12/13/98

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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	FLAT				20s	1.1" slit
41-50	FLAT				45s	1.5" 1200L, 345 tilt, 1040 focus
51-60	BIAS				0s	
61-70	FLAT				12s	
71-75	sky			#57 ↑	7s	
76	comp					
77	Feige110	23 20	-5 09	#56 ↑	3m	
78	comp					
79	N7331	22 37	34 45	#57 ↑	3m	seeing terrible
80	comp					
81	N7469	23 03	08 53	#6 ↑	2.5m	Kirby 2
82	comp					
83	2M22604.8p	22 16	28 57	#68 ↑	15m	object to the west stellar?
84	comp					
85	2M21935.8p	22 19	25 19	#68 ↑	12m	
86	comp					
87	2M23123.8p	22 31	21 33	#68 ↑	10m	
88	comp					
89	2M22249.8p	22 32	23 52	#68 ↑	15m	
90	comp					
91	2M22335.4p	22 33	15 41	#68 ↑	12m	
92	comp					
93	2M22352.1p	22 33	16 59	#68 ↑	8m	
94	comp					
95	2M23449.9p	22 34	17 24	#68 ↑	8m	
96	comp					
97	2M22458.1p	22 34	21 18	#68	7m	

60 inch Telescope Log

Observer: Calkins

PI: Hughes, Kirshner, Koranyi, Wolk

Spectrograph: FAST

Grating: 300l, 1200l Page: 6775

Date: 12/12/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
98	comp			↑		
99	2m223651-7p	22 36	18 22	₸ 60	6m	
100	comp			↑		
101	2m223701.5p	22 37	14 23	₸ 68	5m	
102	comp			↑		
103	2m223735.7p	22 37	15 22	₸ 68	8m	object to the east
104	comp			↑		
105	2M223747.3p	22 37	25 16	₸ 68	8m	
106	comp			↑		
107	SN1998es	01 37	05 51	₸ 2	15m	PA = 9.0°, tilt = 595.0
108	comp			↑		
109	PG0205p134	02 08	13 38	₸ 56	4m	PA = 90°, tilt = 595.0
110	comp			↑		
111	qsm7-4.015	2 53	42 59	₸ 35f	20m	bin by 2
112	comp			↑		
113	qsm7-4.016	2 53	43 11	₸ 35f	20m	bright object to the west
114	comp			↑		
115	qsm7-4.017	2 55	43 14	₸ 35f	2m	star? Yes - it's a star
116	comp			↑		
117	qsm7-4.018	2 54	43 09	₸ 35f	10m	object west
118	comp			↑		
119	qsm7-4.019	2 52	42 09	₸ 35f	12m	UNUSUAL EMISSION ITUBE 3727 - SII 6300 unidentified line too
120	comp			↑		
121	qsm7-4.020	2 57	43 12	₸ 35f	15m	not really long enough
122	comp			↑		
123	qsm7-4.022	2 56	39 59	₸ 35f	20m	
124	comp			↑		
125	053247m0023	5 32	-00 23	₸ 109	20m	
126	comp			↑		
127	053235m0021	5 32	-00 21	₸ 109	20m	

60 inch Telescope Log
Observer: Calkins
PI: Walker, Garcia, McClintock, Gelbord

Spectrograph: FAST
Grating: 1200L, 300L
Date: 12/13/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
128	comp			↑		
129	053102m0017	05 31	-00 16	#109	20m	good seeing!!
130	comp			↑		
131	054018m0149	05 40	-01 98	#109	15m	
132	comp			↑		
133	054058m0209	05 40	-02 09	#109	12m	
134	comp			↑		
135	054032m0142	05 40	-01 42	#109	20m	
136	comp			↑		
137	054003m0154	05 40	-01 53	#109	18m	
138	comp			↑		← want both spectra
139	054143m0203	05 41	-2 03	#109	20m	PA = 44.0°
140	comp			↑		(two stars - binby 2)
141	Hiltner600	06 45	02 08	#109	5m	← last star!!
142	comp			↑		
143-145	CTLam	04 19	56 00	#107	2,20,30	
146	comp			↑		
147	comp			↓		
148,9	A0535+26	05 38	26 18	#104	30s	
150	comp			↑		
151,2	HD39478	5 53	26 25	#104	10s	
153	comp			↑		
154	051734p0653	5 17	6 55	#64	20m	
155	comp			↑		
156	051736p0942	5 17	9 43	#64	18m	bright object to east
157	comp			↑		
158	051737p0647	5 17	6 48	#64	12m	
159	comp			↑		
160	051738p0632	5 17	6 32	#64	15m	
161	comp			↑		

60 inch Telescope Log
Observer: Calkins
PI: Barton, Kirshner, Kurany, Ali

Spectrograph: FAST
Grating: 300 ℓ
Date: 12/13/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
162	nogal-079	9 45	42 26	# 73	15m	
163	comp			9		
164	nogal-084/085	9 55	14 17	# 73	20m	PA=70°, nogal-084 appear
165	comp			↑		west of nogal-085
166	nogal-087	9 56	20 29	# 73	15m	rotation for nogal-08
167	comp			↑		and 088 is out of
168	nogal-088	9 56	20 28	# 73	18m	range of rotator
169	comp			↑		(+110° → -110°)
170,171	sn1998aq	11 56	55 06	# 2	20m	
172	comp			↑		
173	DISREGARD FILE #173!					← ** Disregard #173
174	GD140	11 37	29 47	# 56	3m	
175	comp			↑		
176	mkw2-001	10 26	-2 37	# 35	2m	
177	comp			↑		
178	mkw2-002	10 30	-3 10	# 35	2m	
179	comp			↑		
180	mkw2-003	10 29	-3 46	# 35	2m	
181	comp			↑		
182	mkw2-004	10 27	-3 19	# 35	3m	
183	comp			↑		
184	Feige66	12 37	25 04	# 56	45s	
185	comp			↑		
186-195	BIAS				0s	
196-205	FLAT				60s	
206-215	BIAS				0s	
216-225	FLAT				12s	
226-235	DARK				15m	

60 Inch Telescope Log
Observer: A Mahdavi
PI: All / Huchra / Wilkes / Mahdavi

Spectrograph: FAST
Grating: 300l
Date: 12/14/1998

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-7	DARK				15m	Bin by 4
8-17	BIAS				0s	"
18-27	FLAT				6s	" 3" slit
28-37	BIAS				0s	Bin by 2 Some Cirrus,
38-47	FLAT				12s	" but appears to
48-52	SKY			57	2s	Bin by 4 be clearing.
53	COMP			↑	6s	Beautiful sunset on account of cirrus
54	FEIGE110	23:17:20	-5:26	56	2m	Fantastic seeing.
55	COMP			↑		
56	M31	00:40.00	40:59	57	1m	
57	COMP			↑		
58	N7469	23:03:15	8:52:25	6	2.5m	
59	COMP			↑		
60	MRK335	00:03:15	19:55:27	6	3m	
61	COMP			↑		
62	2M0153551p30335	01:53:55.1	30:33:60	68	15m	Faint
63	COMP			↑		
64	2M0154110p31152	01:54:11	31:15:30	68	12m	
65	COMP			↑		
66	2M	01:48:59.3	32:53:58	68	16m	
67	COMP			↑		
68	2M	01:53:19.6	32:38:56	68	20m	Clouds moving in - had to red a thin one
69	COMP			↑		
70	srgb158.06	02:53:51	8:31:34	59	7m	Intermittent clouds
71	COMP			↑		Doing brighter objects
72	srgb158.10	02:54:51	8:47:01	59	18m	
73	COMP			↑		
74	srgb158.16	02:55:11	9:20:10	59	20m	Clouds still moving in and out
75	COMP			↑		
76	srgb158.23	02:55:52	9:16:39	59	16m	

60 inch Telescope Log
Observer: A Mahdavi
PI: Mahdavi

Spectrograph: FAST
Grating: 300 l
Date: 12/14/1998

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
77	COMP			↑		11 PM, weather Terrible!
78	sr0158.18	2:55:20	8:49:39	59	12m	Too cloudy - Shutty done
79	COMP			↑		RH ≈ 95%
80-89	BIAS	-			0s	Clearing up around 5AM,
90-99	FLAT				6s	but RH is still high.
						No need to take bin by
						2 bias or flats, as
						data was taken in
						bin-by-2 mode.

60 inch Telescope Log
Observer: A Mahdavi
PI: Ali/Strauss/Kenyon/Mahdavi

Spectrograph: FAST
Grating: 300 line
Date: 12/15/1998

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	Bin by 4
11-20	FLAT				6s	"
21-30	FLAT				12s	Bin by 2
31-40	BIAS				0s	"
41-50	BIAS				0s	Bin by 4
51-60	FLAT				20s	" 1.1" slit
61-65	SKY			57	2s	Windy 3" slit
66	COMP			↑		Cloudy but clearing? RH≈80%
						Dome shut after SKYs;
						Wind gusting to 45MPH
						Rain at 10PM; still gusting
						Clear at 12AM, but windy
67	HILTNER600	6:45:13.4	2:08:14	56	45s	Dome open at 2:40AM
68	COMP			↑		Still a bit windy
69	SNUGC4504	8:37:44	20:21:49	2	20m	Bin by 2
70	COMP	↓	↓	↑	12s	
71	SN UGC4504	↓	↓	2	20m	This one looks better
72	COMP			↑	12s	
73	BG Gem	6:03:31	27:41:52	100	6m	Bin by 2
74	COMP			↑	12s	↓
75	HILTNER 600	6:45:13.4	2:08:4	56	60s	
76	COMP			↑	12s	
77	N3115	10:05:15	-7:43:37	57	60s	Bin by 4
78	COMP			↑		
79	nrgso27.039	9:13:20.8	17:38:25	59	6m	
80	COMP			↑		
81	nrgso27.040	9:13:25.8	17:07:23	59	12m	
82	COMP			↑		
83	nrgso27.043	9:13:27.9	16:59:16	59	20m	
84	COMP			↑		

Could not get anything out of files 69+71, SN observation

60 Inch Telescope Log
Observer: A Mahdavi
PI: Huchra/Wilkes

Spectrograph: FAST
Grating: 300 line
Date: 12/15/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
85	2M	10:24:56	20:29:10	68	7m	
86	COMP			↑		
87	2M	10:58:46	20:10:17	60	7m	Strange spectrum! → There should not be here
88	COMP			↑		
89	2M	10:23:18	22:23:17	68	12m	} Duplicate
90	COMP			↑		
91	2M	10:23:18	22:23:17	68	12m	}
92	COMP			↑		
93	2M	10:27:49	21:48:08	68	9m	
94	COMP			↑		
95	N4151	12:08:01	39:41:01	6	30s	
96	COMP			↑		
97	N4051	12:00:36	44:46:35	6	2m	
98	COMP			↑		
99	FE1GB34	10:39:36	43:06:11	56	30s	
100	COMP			↑		
101-110	FLAT				6s	
111-120	FLAT				12s	bin by 2
121-130	BIAS				0	"
131-140	BIAS				0	bin by 4
141-150	DARK				20m	bin by 2

have only file 1 - 86, 89-150

60 inch Telescope Log
Observer: A Mahdavi
PI: Ali/Wilkes/Huchra/Kirshner

Spectrograph: FAST
Grating: 300 line
Date: 12/16/1998

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-9	DARK				15m	Bin by 4
10-19	BIAS				0s	↓
20-29	FLAT				6s	↓
30-39	FLAT				12s	Bin by 2
40-49	BIAS				0s	↓
50-59	FLAT				20s	Bin by 4 1.1" slit
60-64	SKY			57	2s	3" slit; clouds in the
65	COMP			↑		distance but clear here
66	FEIGE 110	23:19:58	-5:09:56	56	2m	windy RH ≈ 60%
67	COMP			↑		
68	M31	00:40:00	40:59:42	57	1m	
69	COMP			↑		
70	N7469	23:03:15	8:52:25	6	2.5m	
71	COMP			↑		
72	MRK335	00:06:45	19:55:17	6	3m	
73	COMP			↑		
74	2M	02:23:03	25:26:06	68	7m	
75	COMP			↑		
76	2M	02:36:16	14:04:57	68	15m	
77	COMP			↑		
78	SN1998ey	21:30:08	26:43:41	2	20m	Bin by 2
79	COMP	↓	↓	↑	12s	
80	SN1998ey	↓	↓	2	20m	
81	COMP			↑	12s	7:45 Dome shut-wind 45mph
82-91	BIAS	bin by 4			0s	Lighting storm to the SW
92-101	FLAT	↓			6s	11 PM Winds 55 mph
102-111	FLAT	bin by 2			12s	Giving up 5:30 AM
112-121	BIAS	↓			0s	
122-131	DARK	↓			20m	

60 inch Telescope Log
Observer: A Mahdavi
PI: All/Mahdavi/Wilkes

Spectrograph: FAST
Grating: 300 1
Date: 12/17/1998

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK	Bin by 4			15m	Raining; unable to do
11-20	BIAS	↓			0s	sunset sky-flats
21-30	FLAT	↓			6s	Lightning storm @ 8PM
31-40	FLAT	Bin by 2			12s	Cloudy & Humid after
41-50	BIAS	↓			0s	(RH ~ 100%)
51-60	FLAT	Bin by 4	1.1" slit		20s	
61	FEIGE34	10:39:37	43:06:11	56	90s	Dome open 5AM
62	COMP			↑		RH ~ 80%
63	nrgso27.045	9:13:58.1	17:13:31	59	20m	Bizzare Spectrum
64	COMP			↑		Two stars? But it looks diffuse on TV!
65	nrgso27.042	9:13:39.5	17:31:73	59	20m	This spectrum looks similar
66	COMP			↑		to the last one. Is there some
						instrumental effect going on?
						Comps look fine
67	nrgso27.044	9:13:43.7	16:51:42	59	7m	Whew! a normal
68	COMP			↑		galaxy spectrum
69	N4486B	12:30:32	12:29:25	57	5m	Also normal
70	COMP			↑		
71	N4151	12:08:01	39:41:01	6	30s	
72	COMP			↑		
73	N4258	12:16:30	47:34:51	6	2m	
74	COMP			↑		
75-84	BIAS	Bin by 4			0s	
85-94	FLAT	↓			6s	
95-104	SKY			57		
105	COMP	↓		↑		Bin by 2 calibrations
						unnecessary.

60 inch Telescope Log
Observer: Mahdavi / Jha
PI: Ali/Kirshner/Mahdavi

Spectrograph: FAST
Grating: 300 line
Date: 12/18/1998

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-9	DARK	Bin by 4			15m	Clear. Finally!
10-19	BIAS	↓			0s	
20-29	FLAT				6s	
30-39	FLAT	Bin by 2			12s	
40-49	BIAS	↓			0s	
50-59	FLAT	Bin by 4			20s	1.1" slit
60-64	sky	↓		57	2s	
65	COMP			↑		
66	Feige110	23:19:23.5	-05:26:22	56	2m	
67	COMP			↑		
68	M31	00:40:00	40 59 42	57	1m	
69	COMP			↑		
70	N7469	23 03 15.3	08 52 25	6	150s	
71	COMP			↑		
72	sn98es	01 37 14.9	05 52 50	2	15m	tilt 595 slit PA -41.0
73	COMP			↑	12s	bin by 2 1
74	Feige110	23:19:23.5	-05 26 22	56	3m	tilt 595 PA 18.4 bin by 2
75	COMP			↑	12s	
76	sn98ey	21 30 00.6	26 43 24	2	20m	tilt 610 PA 90 bin by 2
77	"	"	"	2	20m	Bin by 2
78	COMP			↑	12s	↓
79	FEIGE 24	2:35:07.4	3:43:56	56	3m	
80	COMP			↑	12s	
81	srgb158.002	2:52:01	9:14:50	59	20m	Bin by 4
82	COMP			↑		
83	srgb158.003	2:57:02	9:18:11	59	15m	
84	COMP			↑		
85	srgb158.007	02 54 33	09 27 02	59	20m	
86	COMP			↑		
87	srgb158.004	02 53 24	09 25 49	59	18m	

60 inch Telescope Log
Observer: Mahdavi/Jha
PI: All/Mahdavi/Koranyi/Gomez/etal

Spectrograph: FAST
Grating: 300 l/mm
Date: 12/18/1998

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
88	COMP			↑		
89	srgb158.008	02:54:39	9:21:20	59	15m	superposed *, but got em - got it!
90	COMP			↑		
91	awm7-3.117	02:58:12	42:55:28	35	20m	
92	COMP			↑		
93	awm7-4.023	02:45:32	40:58:55	35	20m	
94	COMP			↑		
95	CICAM	4:19:47.1	55:59:58	109	2s	
96	↓	↓	↓	↓	20s	
97	↓	↓	↓	↓	90s	
98	COMP			↑		
99	awm7-4.026	2:45:46	41:13:44	35	15m	
100	COMP			↑		
101	awm7-4.028	7:45:59	41:19:19	35	18m	
102	COMP			↑		
103	awm7-4.029	2:45:28	41:28:28	35	18m	
104	COMP			↑		
105	AOS35P26	5:38:55	26:18:56	104	30s	1.1" slit
106	"	"	"	"	"	
107	COMP			↑	85	
108	HD39478	5:53:59	26:25:20	104	105	
109	"	"	"	"	"	
110	COMP			↑	85	
111	HILTNER600	6:42:37	2:11:25	50	60s	
112	COMP			↑	85	
113	a539	5:14:40	3:51:30	64	20m	3" slit
114	COMP			↑		
115	a539	5:15:00	4:23.02	64	22m	
116	COMP			↑		
117	BGGem	6:03:31	27:41:52	100	-	Bin by 2

60 inch Telescope Log
Observer: Mahdavi/Oha
PI: Kenyon/Geller/Hughes etal

Spectrograph: FAST
Grating: 300l
Date: 12/18/1998

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
118	COMP			↑	12^s	Bin by 2
119	a539	5:15:24	6:00:15	64	22^m	Bin by 4
120	COMP			↑		Clouds moving in from W
121	2M	08 00 05.6	13 44 15	68	15^m	some clouds around
122	COMP			↑		
123	2M	08 59 45	16 04 32	68	3^m	star! yes, star
124	COMP			↑		
125	2M	08 38 32	13 42 27	68	15^m	
126	COMP			↑		
127	2M	08 09 18	19 29 58	65	15^m	clouds
128	COMP			↑		
129	nrgs027.046	09 13 59	17 56 39	59	15^m	clouds
130	COMP			↑		
131	nrgs027.047	09 14 13	16 44 32	59	10^m	
132	COMP			↑		
133	SN98S	11 46 06	47 28 56	2	20^m	bin by 2
134	COMP			↑	12^s	
135	SN98S			2	20^m	Clouds moving in
136	COMP			↑	12^s	and out
137	SN98S			2	19^m	
138	COMP	↓	↓	↑	12^s	↓ NOT A COMP LOOKS LIKE BIAS FILE
139	nrgs027.054	9:15:02.1	17:35:31	59	12^m	Bin by 4
140	COMP			↑		
141	sneand	"	"	2	11^m	SN cand in prev galaxy bin by 2
142	COMP			↑	12^s	turns out to be asteroid 6181
143	N5548	14:15:44	25:22:01	6	13^m	bin by 4
144	COMP			↑		
145	MRK279	13 51 54	69 33 13	6	3^m	sky very bright- nothing
146	COMP			↑		
147-156	FLAT				20^s	1.1" slit bin by 4

USED comp file 136 for file 137

60 inch Telescope Log

Observer: Mahdavi/Oke

PI: All

Spectrograph: FAST

Grating: 300 l/m

Date: 12/18/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
157-166	BIAS	Binby4			0s	
167-176	FLAT	↓			6s	3" slit
177-186	FLAT	Binby2			12s	
187-196	BIAS	↓			0s	
197-206	DARK	↓			20m	

60 inch Telescope Log
Observer: S Jha
PI: Ali/Wilkes/Huchra

Spectrograph: FAST
Grating: 300 l/mm
Date: 12/19/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	binby4 ; pretty clear
11-20	BIAS				0s	↓
21-30	FLAT				6s	↓
31-40	FLAT				12s	binby2
41-50	BIAS				0s	↓
51-55	sky			57	5s	binby4 clear
56	COMP			↑		
57-66	FLAT				20s	1.1" slit
67	Feige110	23:17:24	-05 16 22	56		3" slit
68	COMP			↑		
69	M31	00 40 00	40 59 42	57	60s	
70	COMP			↑		
71	MRK509	20 41 26	-10 43 27	6	3m	
72	COMP			↑		
73	N7469	23 03 15	08 52 25	6	150s	star to the east
74	COMP			↑		
75	2M	02 26 10.7	26 28 14.4	68	20m	star to the east
76	COMP			↑		
77	2M	02 34 51.9	20 16 19	68	15m	
78	COMP			↑		
79	2M	02 33 57.5	19 10 19	68	12m	star to the east
80	COMP			↑		
81	MRK335	00 03 45	19 55 27	6	3m	
82	COMP			↑		
83	2M	02 49 57.3	12 43 42	68	12m	
84	COMP			↑		
85	2M	02 13 40.3	19 15 25	68	12m	
86	COMP			↑		
87	2M	02 29 53.4	13 08 50	68	8m	
88	COMP			↑		

79 also, superposed star but got low emission so we got cz

60 inch Telescope Log
Observer: S. Jha
PI: Huchra/Mahdavi/Koranyi/Garcia et al.

Spectrograph: FAST
Grating: 300 l/mm
Date: 12/19/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
89	2M	02 28 28.9	22 24 59	68	8m	
90	COMP			↑		
91	2M	02 47 01.1	14 52 43	68	12m	
92	COMP			↑		
93	srgb158.011	02 54 54	09 16 13	59	10m	star to the west
94	COMP			↑		
95	srgb158.013	02 55 01	10 05 53	59	18m	
96	COMP			↑		
97	srgb158.014	02 55 04	09 06 38	59	15m	
98	COMP			↑		
99	srgb158.019	02 55 42	09 19 24	59	8m	
100	COMP			↑		
101	srgb156.020	02 55 45	10 16 06	59	8m	
102	COMP			↑		
103	awm7_4.030	02 45 32	41 33 46	35	15m	superposed star but strong galaxy emission
104	COMP			↑		
105	awm7_4.038	02 45 43	42 00 38	35	20m	
106	COMP			↑		
107	awm7_4.042	02 45 36	42 09 27	35	8m	042 is to the east row +40
"	awm7_4.041	02 45 32	42 09 28	35	"	041 is to the west row -2
108	COMP			↑		
109	CICam	04 19 42	55 59 58	107	2s	
110	"	"	"	107	20s	
111	"	"	"	107	90s	
112	COMP			↑		
113	a539.051536p0711	05 15 36	09 11 53	64	15m	
114	COMP			↑		
115	a539	05 15 45	04 23 24	64	8m	
116	COMP			↑		
117	a539	05 15 54	08 45 06	64	8m	

107 - 041 02 45 32.391 +42 09 27.65
108 042 02 45 38.340 +42 09 27.32

60 inch Telescope Log
Observer: S. Jha
PI: Geller/Kenyon/Huchra/Mahdavi

Spectrograph: FAST
Grating: 300 l/mm
Date: 12/19/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
118	COMP			↑		
119	a539	05 17 44	05 34 13	64	20m	
120	COMP			↑		
121	a539	05 17 50	05 17 17	64	12m	
122	COMP			↑		
123	a539	05 17 48	03 38 50	64	20m	
124	COMP			↑		
125	a539	05 18 23	04 25 09	64	20m	
126	COMP			↑		
127	DGTau	04 27 05	26 06 16	12	10s	
128	"	"	"	12	2m	
129	COMP			↑		
130	DLTau	04 33 39	25 20 39	12	20s	
131	"	"	"	12	3m	
132	COMP			↑		
133	DRTau	04 47 05	16 58 37	12	20s	
134	"	"	"	12	3m	
135	COMP			↑		
136	2M	05 22 13.9	18 04 25	68	5m	
137	COMP			↑		
138	2M	05 27 53.7	19 51 47	68	8m	
139	COMP			↑		
140	2M	05 10 50.4	16 28 34	68	6m	
141	COMP			↑		
142	2M	05 13 21.3	20 15 26	68	10m	
143	COMP			↑		
144	2M	05 00 52.1	22 09 59	68	8m	
145	COMP			↑		
146	nrgs027.049	09 14 26	17 58 14	59	20m	very faint
147	COMP			↑		

60 inch Telescope Log
Observer: S. Jha Wilkes
PI: Mahdavi/Kirshner/Koranyi /All

Spectrograph: FAST
Grating: 300 l/mm
Date: 12/19/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
148	nrgs027.056	09 15 15	17 46 05	59	15m	seeing worse ~3"
149	COMP			↑		
150	nrgs027.065	09 16 01	17 35 21	59	6m	
151	COMP			↑		
152	nrgs027.066	09 16 01	17 49 09	59	5m	
153	COMP			↑		
154	nrgs027.067	09 16 04	17 37 40	59	7m	
155	COMP			↑		
156	sn97eg	13 11 36	22 55 29	2	20m	binby2
157	"	"	"	2	20m	↓
158	COMP			↑	12s	
159	awml_040	09 16 47	20 10 05	35	10m	binby4
160	COMP			↑		
161	awml_042	09 17 30	20 10 59	35	15m	star to the west
162	COMP			↑		
163	Feige34	10 36 41	43 21 50	56	150s	binby2
164	COMP			↑	12s	↓
165	mkw2_008	10 26 51	-03 29 51	35	17m	binby4 bright sky
166	COMP			↑		
167-176	BIAS			0	0s	
177-186	FLAT				6s	
187-196	FLAT					binby2
197-206	BIAS					↓
207-216	DARK					

60 inch Telescope Log
Observer: S. Jha
PI: Alli/Wilkes/Kirshner/Huchra

Spectrograph: FAST
Grating: 300 l/mm
Date: 12/20/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	binby4 thin cirrus
11-20	BIAS				0s	↓
21-30	FLAT				6s	
31-40	FLAT				12s	binby2
41-50	BIAS				0s	↓
51-60	FLAT				20s	binby4 1.1" slit
61-65	sky			57	2s	3" slit
66	COMP			↑	6s	
67	Feige 110	23 17 23	-05 26 22	56	2m	clouds
68	COMP			↑		
69	M32	00 39 58	40 35 30	57	1m	
70	COMP			↑		
71	sn98es	01 37 19	05 52 50	2	15m	tilt 595 PA -40°
72	COMP			↑		binby4! doh! oh well
73	Feige 110	23 17 23	-05 26 22	56	2m	tilt 595 PA 16.4° clearing
74	COMP			↑		still binby4
75	sn98ey	21 30 00	26 43 24	2	20m	faint clearing up binby2
76	COMP			↑	12s	
77	sn98ey	"	"	2	20m	binby2
78	COMP			↑	12s	
79	Feige 25	02 38 34	05 28 10	56	3m	binby2
80	COMP			↑	12s	
81	2M	02 10 58.8	11 12 44	68	12m	binby4
82	COMP			↑		
83	2M	02 26 45.9	23 11 45	68	20m	faint star to the west
84	COMP			↑		
85	2M	02 23 31.8	25 27 54	68	20m	
86	COMP			↑		
87	2M	02 50 39.9	14 58 52	68	15m	
88	COMP			↑		

60 inch Telescope Log
Observer: S. Jha
PI: Huchra/Mahdavi/Garcia/McClintock/Geller

Spectrograph: FAST
Grating: 300 l/mm
Date: 12/20/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
89	2M	02 50 23.2	A 49 37	68	15m	
90	COMP			↑		
91	2M	02 38 14.3	15 55 23	68	15m	
92	COMP			↑		
93	srgb158.025	02 55 54	10 14 22	59	20m	clouds moving through
94	COMP			↑		
95	srgb158.022	02 55 50	08 20 23	59	20m	star?
96	COMP			↑		
97	2M	04 33 52.8	16 21 45	68	20m	
98	COMP			↑		
99	2M	04 07 42.8	30 03 42	68	20m	faint
100	COMP			↑		
101	2M	04 00 19.6	31 49 51	68	15m	
102	COMP			↑		
103	2M	04 01 40.7	23 12 23	68	20m	
104	COMP			↑		
105	CI Cam	04 19 42.1	55 59 58	107	2s	
106	"	"	"	107	10s	
107	"	"	"	107	90s	
108	COMP			↑		
109	COMP			↓	8s	1.1" slit
110	A0535p26	05 38 54	26 18 57	104	30s	
111	"	"	"	104	30s	
112	COMP			↑	8s	
113	COMP			↓	8s	
114	HD39478	05 53 59	26 25 21	104	10s	
115	"	"	"	104	10s	
116	COMP			↑	8s	
117	a539	05 19 16.7	05 45 23	64	20m	3" slit
118	COMP			↑		

60 Inch Telescope Log
Observer: S. Jha
PI: Geller/Mahdavi/Kirshner/Koranyi et al.

Spectrograph: FAST
Grating: 300 l/mm
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
119	a539	05 18 56	07 02 22	64	20m	faint but enough - redo (?)
120	COMP			↑		
121	nrgs027,053	09 14 53	17 03 25	59	20m	faint
122	COMP			↑		
123	nrgs027.057	09 15 17	18 04 41	59	20m	
124	COMP			↑		
125	nrgs027.069	09 16 07	17 44 01	59	12m	
126	COMP			↑		
127	nrgs027.070	09 16 16	17 39 33	59	20m	
128	COMP			↑		
129	nrgs027.075	09 16 34	17 55 05	59	15m	agn?
130	COMP			↑		
131	nrgs027.079	09 16 52	17 46 55	59	20m	
132	COMP			↑		
133	SN98S	11 46 06	47 28 55	2	20m	very faint! binby2
134	COMP			↑		↓
135	SN98S	"	"	2	20m	
136	COMP			↑		
137	SN98S	"	"	2	20m	
138	COMP			↑		
139	mkw2_010	10 26 52	-03 42 47	35	20m	binby4
140	COMP			↑		
141	MRK421	11 01 40	38 28 43	6	4m	
142	COMP			↑		
143	N4051	12 00 36	44 48 35	6	2m	
144	COMP			↑		
145	N4151	12 08 01	39 41 01	6	30s	
146	COMP			↑		
147	N4258	12 16 29	47 34 51	6	2m	
148	COMP			↑		

60 inch Telescope Log
Observer: S. Jha
PI: Wilkes/All

Spectrograph: FAST
Grating: 300 l/mm
Date: 12/20/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
149	MRK 279	13 51 53	69 33 13	6	3m	bright sky
150	COMP			↑		
151-160	FLAT				20s	1.1" slit
161-170	BIAS				0s	3" slit
171-180	FLAT				6s	
181-190	FLAT				12s	binby2
191-200	BIAS				0s	↓
201-210	DARK				20m	

60 inch Telescope Log
Observer: S. Jha
PI: All/Wilkes/Hackra

Spectrograph: FAST
Grating: 300 l/mm
Date: 12/21/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	binby4
11-20	BIAS				0s	thin cirrus
21-30	FLAT				6s	↓
31-40	FLAT				12s	binby2
41-50	BIAS				0s	↓
51-60	FLAT				20s	binby4 1.1" slit
61-65	sky			57	3s	3" slit
66	COMP			↑		
67	Feige110	23 17 23	-05 26 22	56	2m	thus begins the longest night-
68	COMP			↑		
69	M32	00 39 58	40 35 30	57	1m	
70	COMP			↑		
71	N7469	23 03 15	08 52 25	6	150s	
72	COMP			↑		
73	MRK335	00 03 45	19 55 29	6	3m	
74	COMP			↑		
75	2M	02 59 40.3	32 48 00	68	15m	
76	COMP			↑		
77	2M	02 27 52.3	18 30 18	68	10m	
78	COMP			↑		
79	2M	02 14 04.4	19 11 29	68	12m	
80	COMP			↑		
81	2M	02 41 10.7	28 35 17	68	10m	faint star to the east
82	COMP			↑		
83	2M	02 25 38.4	21 49 42	68	8m	
84	COMP			↑		
85	2M	02 27 38.1	23 03 35	68	8m	
86	COMP			↑		
87	2M	02 02 34.1	23 38 25	68	6m	
88	COMP			↑		

60 inch Telescope Log

Observer: S. Jha

PI: Huchra/Mahdavi/Garcia/Kenyon

Spectrograph: FAST

Grating: 300 l/mm

Date: 12/21/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
89	ZM	02 26 44.1	19 23 46	68	10m	
90	COMP			↑		
91	2M	02 56 24.3	35 31 12	68	10m	
92	COMP			↑		
93	2M	02 09 08.2	24 23 01	68	8m	
94	COMP			↑		
95	2M	02 51 09.8	16 05 15	68	6m	
96	COMP			↑		
97	2M	02 18 57.3	16 10 37	68	8m	
98	COMP			↑		
99	2M	02 48 48.6	12 01 14	68	10m	
100	COMP			↑		
101	2M	02 55 01.0	32 35 04	68	8m	
102	COMP			↑		
103	Srgb158.029	02 56 28	09 05 50	59	18m	
104	COMP			↑		
105	srgb158.030	02 56 40	09 25 18	59	16m	star to the east
106	COMP			↑		
107	Srgb158.031	02 56 45	09 23 05	59	16m	
109	COMP			↑		
109	Srgb158.032	02 56 45	18 51 54	59	20m	
110	COMP			↑		
111	srgb158.037	02 58 58	09 57 45	59	20m	
112	COMP			↑		
113	CICam	04 19 42	55 59 59	107	25	
114	"	"	"	107	205	
115	"	"	"	107	905	
116	COMP			↑		
117	DGTau	04 27 05	26 06 16	12	105	
118	"			12	2m	

60 inch Telescope Log
Observer: S. Jha
PI: Kenyon/Huchra

Spectrograph: FAST
Grating: 300 l/mm
Date: 12/21/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
119	COMP			↑		
120	DLTau	04 33 39	25 20 39	12	20s	
121	"	"	"	12	3m	
122	COMP			↑		
123	DRTau	04 47 05	16 58 37	12	20s	
124	"	"	"	12	3m	
125	COMP			↑		
126	2M	04 04 19.2	33 11 49	68	7m	
127	COMP			↑		
128	2M	04 45 01.4	20 45 38	68	4m	star? Yes, star
129	COMP			↑		
130	2M	04 51 02.9	17 50 34	68	12m	
131	COMP			↑		
132	2M	04 42 43.6	18 37 11	68	15m	
133	COMP			↑		
134	2M	04 27 27.8	12 09 24	68	12m	
135	COMP			↑		
136	2M	04 29 22.8	16 34 11	68	15m	
137	COMP			↑		
138	2M	04 55 36.9	18 28 52	68	15m	
139	COMP			↑		
140	2M	04 02 43.8	16 02 59	68	15m	
141	COMP			↑		
142	2M	04 08 27.3	23 20 32	68	12m	
143	COMP			↑		
144	2M	04 43 39.0	18 31 26	68	15m	
145	COMP			↑		
146	2M	04 01 16.6	31 43 55	68	20m	
147	COMP			↑		
148	BGGem	06 03 30	27 41 51	100	5m	binby2

60 inch Telescope Log
Observer: S. Jha
PI: Ali/Mahdavi/Kirshner/Kurantyi/Wilkes

Spectrograph: FAST
Grating: 300 l/mm
Date: 12/21/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
149	COMP			↑	12s	binby2
150	Hiltner 600	06 42 37	02 11 25	56	75s	↓
151	COMP			↑	12s	
152	nrgs027.080	09 16 53	17 27 24	59	10m	binby4
153	COMP			↑		
154	nrgs027.081	09 16 54	17 04 35	59	8m	
155	COMP			↑		
156	nrgs027.082	09 16 55	17 31 21	59	12m	
157	COMP			↑		
158	nrgs027.084	09 17 08	17 24 32	59	10m	bright star to the west
159	COMP			↑		
160	sn98bu	10 46 38	11 50 33	2	20m	binby2 faint no guide star
161	COMP			↑	12s	
162	sn98bu	"	"	2	20m	↓
163	COMP			↑	12s	
164	mkw2_006	10 29 38	-03 50 46	35	20m	binby4
165	COMP			↑		
166	mkw2 011	10 26 28	-03 40 55	35	15m	
167	COMP			↑		
168	mkw2 012	10 25 40	-03 35 24	35	10m	
169	COMP			↑		
170	mkw2 013	10 28 51	-03 57 17	35	8m	
171	COMP			↑		
172	mkw2_015	10 27 19	-03 11 04	35	10m	
173	COMP			↑		
174	mkw2_016	10 29 56	-03 15 03	35	20m	
175	COMP			↑		
176	MRK279	13 51 53	69 33 13	6	3m	
177	COMP			↑		
178	N5548	14 15 43	25 22 01	6	3m	

60 Inch Telescope Log
Observer: S. Jha
PI: Wilkes/All

Spectrograph: FAST
Grating: 300 l/mm
Date: 12/21/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
179	COMP			↑		
180	N4258	12 16 29	47 34 51	G	2m	
181	COMP			↑		
182-191	BIAS				0s	binby4
192-201	FLAT				6s	
202-211	FLAT				12s	binby2
212-221	BIAS				0s	↓
222-231	DARK				20m	

60 inch Telescope Log
Observer: CALKINS
PI: Hill, Huchra, Geller, Garcia

Spectrograph: FAST
Grating: 300L
Date: 12/22/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1, 2	Dark				15m	
3-12	IDAS				0s	
13-22	FLAT				6s	
23-32	IDAS				0s	
33-42	FLAT				10s	
43-47	sky			#57	1s	
48	comp			↑		
49	Feige 110	21 20	-05 09	#56	1m	cirrus @ sunset
50	comp			↑		
51	N7331	22 37	34 25	#57	4m	
52	comp			↑		
53	MRK515	00 06	10 12	#6	3m	
54	comp			↑		
55	2M0223705.4p	02 36	59 40	#68	20m	binby 2 STAR
56	comp			↑		
57	2M0240052.5p	02 40	56 23	#68	20m	binby 2, PA = 75° STAR
58	comp			↑		
59	2M0241145.7p	02 41	55 34	#68	20m	binby 2, PA = 110° STAR
60	comp			↑		
61	2M0240360.0p	02 40	58 54	#68	20m	
62	comp			↑		
63	051447p0824	05 14	08 24	#64	20m	
64	comp			↑		
65	051451p0841	05 14	08 41	#64	15m	comparison to the ca
66	comp			↑		
67	051453p0615	05 14	06 14	#64	15m	
68	comp			↑		
69	051504p0217	05 15	02 16	#64	15m	
70	comp			↑		
71-73	CICam	4 19	55 58	#107	2,20,90	

60 inch Telescope Log
Observer: Calkins
PI: Keller, Huchra

Spectrograph: FAST
Grating: 300l
Date: 12/22/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
74	comp			↑		
75	051543p0200	5 15	5 59	#64	10m	
76	comp			↑		
77	051534p0652	5 15	6 49	#64	12m	underexposed by 9
78	comp			↑		
79	051538p0852	5 15	8 52	#64	10m	companion to the west
80	comp			↑		
81	051540p0507	5 15	5 07	#64	6m	
82	comp			↑		
83	051543p0545	5 15	5 45	#64	15m	PA = 75°
84	comp			↑		
85	051547p0646	5 15	6 47	#64	12m	PA = 75°
86	comp			↑		
87	051550p0612	5 15	6 12	#64	20m	
88	comp			↑		
89	051550p0845	5 15	8 45	#64	20m	object to east
90	comp			↑		
91	2M0746+41	7 46	18 44	#68	3m	
92	comp			↑		
93	2M0711+38	7 13	12 16	#68	4m	superimposed star to
94	comp			↑		the west (indistinguishable
95	2M0705+17	7 05	22 48	#68	3m	in spectrum
96	comp			↑		
97	2M0731+09	7 33	17 17	#68	3m	
98	comp			↑		
99	2M0753+54	7 53	13 08	#68	4m	companion to east
100	comp			↑		
101	2M0706+13	7 06	23 21	#68	3m	
102	comp			↑		
103	2M0710+26	7 10	13 44	#68	4m	

60 inch Telescope Log
Observer: CALKINS
PI: Nuchra

Spectrograph: FAST
Grating: 300x
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
104	comp			↑		
105	2M0728+35	7 28	14 22	#68	5m	
106	comp			↓		
107	2M0709+30	7 09	18 38	#68	5m	
108	comp			↑		
109	2M0739+02	7 39	26 07	#68	7m	
110	comp			↑		
111	2M0719+14	7 19	14 03	#68	3.5m	
112	comp			↑		
113	2M0739+57	7 39	13 14	#68	3m	
114	comp			↑		
115	2M0714+04	7 14	5 47	#68	6m	object to the west
116	comp			↑		
117	2M0759+37	7 59	13 26	#68	3m	
118	comp			↑		
119	2M0705+59	7 05	15 43	#68	2.5m	
120	comp			↑		
121	2M0751+12	7 51	22 25	#68	6m	
122	comp			↑		
123	2M0733+38	7 33	24 43	#68	4m	
124	comp			↑		
125	2M0707+56	7 07	13 12	#68	4.5m	star to the west
126	comp			↑		
127	2M0731+09	7 31	14 01	#68	3m	
128	comp			↑		
129	2M0745+38	7 45	18 07	#68	3.5m	
130	comp			↑		
131	2M0731+14	7 31	14 49	#68	3.5m	
132	comp			↑		
133	2M0748+08	7 48	22 50	#68	3.5m	

60 inch Telescope Log
Observer: Calkins
PI: Huchra, All

Spectrograph: FAST
Grating: 300l
Date: 12/22/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
134	comp			↑		
135	2M0711336	7 13	17 17	#68	12m	
136	comp			↑		
137	2M0710736	7 07	24 32	#68	3m	
138	comp			↑		
139	2M0713422	7 34	26 52	#68	4.5m	
140	comp			↑		
141	2M0713723	7 37	17 47	#68	12m	star to the east
142	comp			↑		
143	2M0711058	7 10	15 39	#68	5m	
144	comp			↑		
145	2M0714930	7 49	20 22	#68	7m	
146	comp			↑		
147	2M0710257	7 03	27 54	#68	8m	
148	comp			↑		
149	2M0714533	7 45	18 48	#68	12m	
150	comp			↑		
151	2M0713547	7 35	15 07	#68	20m	PA Φ = 110° N through
152	comp			↑		clouds returned
153	N4151	12 10	39 23	#6	45s	(will redo)
154	comp			↑		
155	N4258	12 18	47 17	#6	2m	clouds obscure
156	comp			↑		all but the
157	MRK 279	13 52	69 17	#6	5m	brightest!!
158	comp			↑		
159	H244	11 23	36 08	#56	3m	
160	comp					
161-170	BIAS				0s	
171-180	FLAT				6s	
181-190	DARK				15m	

60 inch Telescope Log
Observer: Collins
PI: Ali, Barton, Huchra

Spectrograph: FAST
Grating: 300 l
Date: 12/23/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-6	Dark				15m	
7-16	BIAS				0s	
17-26	FLAT				60s	
27-36	FLAT				20s	1.1" slit
37-46	BIAS				0s	
47-56	FLAT				12s	
57-61	sky			#57 ↑	2s	
62	comp					
63	Feige110	21 20	-05 09	#56 ↑	2.5m	
64	comp					
65	M31	00 42	41 16	#57 ↑	90s	Big!!
66	comp					
67	N7469	23 03	08 52	#6 ↑	3m	star to east, binby 2
68	comp					
69	MRK509	20 44	-10 43	#6 ↑	3.5m	
70	comp					
71	MRK335	00 06	20 12	#6 ↑	3m	
72	comp					
73	sogal-022	00 21	22 24	#73 ↑	20m	slit clouds passing thru
74	comp					
75	sogal-291	23 36	02 09	#73 ↑	20m	
76	comp					
77	sogal-292	23 36	02 09	#73 ↑	20m	clouds - will redo
78	comp					(wait clouds out)
79	2MASX47	00 35	15 06	#68 ↑	12m	clouds cleared @ 1am
80	comp					
81	2MASX0148.0p	07 01	24 34	#68 ↑	8m	
82	comp					
83	2MASX2201	07 22	14 58	#68 ↑	10m	
84	comp					

60 inch Telescope Log
Observer: Calkins
PI: Huchra

Spectrograph: FAST
Grating: 300L
Date: 12/23/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
85	ZM072527	7 25	13 03	π 68	5m	
86	comp			↑		
87	ZM071244	7 12	12 33	π 68	4m	
88	comp			↑		
89	ZM074018	7 40	18 27	π 68	4m	
90	comp			↑		
91	ZM071923	7 05	18 32	π 68	6m	
92	comp			↑		
93	ZM074503	7 45	15 48	π 68	3m	
94	comp			↑		
95	ZM072806	7 28	29 42	π 68	3m	
96	comp			↑		
97	ZM074747	7 47	12 10	π 68	3m	
98	comp			↑		
99	ZM075022	7 50	17 39	π 68	4m	
100	comp			↑		
101	ZM075119	7 51	23 14	π 68	3.5m	
102	comp			↑		
103	ZM074618	7 46	18 09	π 68	3m	
104	comp			↑		
105	ZM071537	7 15	5 09	π 68	4m	
106	comp			↑		
107	ZM073556	7 35	17 47	π 68	5m	
108	comp			↑		
109	ZM071701	7 17	17 44	π 68	5m	object to the east
110	comp			↑		
111	ZM070859	7 09	27 25	π 68	6m	
112	comp			↑		
113	ZM070702	7 07	20 57	π 68	2.5m	
114	comp			↑		

60 inch Telescope Log
Observer: CALKINS
PI: Hudson, Foley, Fisher

Spectrograph: FAST
Grating: 300l
Date: 12/23/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
115	2M0751+22	7 51	18 16	#68 ↑	6m	
116	comp					
117	2M0717+04	7 17	14 29	#68 ↑	3m	
118	comp					
119	2M0748+27	7 48	28 53	#68 ↑	3.5m	
120	comp					
121	awm1-035	9 17	20 44	#35 ↑	9m	
122	comp					
123	awm1-036	9 18	19 51	#35 ↑	15m	
124	comp					
125	awm1-037	9 18	20 46	#35 ↑	12m	Superposed ✝, bad guide here
126	comp					
127	awm1-038	9 15	19 44	#35 ↑	15m	
128	comp					
129	awm1-039	9 16	19 53	#35 ↑	20m	
130	comp					
131	awm1-041	9 14	19 41	#35 ↑	20m	
132	comp					
133	awm1-044	9 17	20 53	#35 ↑	15m	
134	comp					
135	awm1-045	9 19	20 51	#35 ↑	10m	
136	comp					
137, 138	sn1998aq	11 56	55 07	#2 ↑	20m	utilized offset
139	comp					SN not visible on
140	Feige66	11 45	27 51	#56 ↑	30s	screen
141	comp					
142	mkw2-005	10 26	-2 49	#35 ↑	12m	
143	comp					
144	mkw2-009	10 26	-3 24	#35 ↑	5m	star to the west
145	comp					

60 inch Telescope Log
Observer: CALKINS
PI: Kosary, All

Spectrograph: FAST
Grating: 300l
Date: 12/23/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
146	mkw2-014	10 27	-3 41	T=35	9m	
147	comp			↑		
148	mkw2-017	10 25	-3 37	T=35	6m	
149	comp			↑		
150	N3377	10 47	13 59	T=57	70s	
151	comp			↑		
152	Feige34	10 39	43 06	T=56	2m	
153	comp			↑		
154-162	BIAS				0s	
163-173	FLAT				60s	
174-183	BIAS				0s	
184-193	FLAT				12s	
194-202	DARK				15m	

60 inch Telescope Log
Observer: CALKINS
PI: Ally, Huchra, Kirshner, Barton, Kuraszy

Spectrograph: FAST
Grating: 300c
Date: 12/24/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-5	DARK				15m	
6-15	BIAS				0s	
16-25	FLAT				6s	
26-35	FLAT				20s	1.1"
36-45	BIAS				0s	
46-55	FLAT				12s	
56-60	sky			#57 ↑	3s	
61	comp					
62	Feige110	23 19	-5 10	#56 ↑	3m	
63	comp					
64	m31	00 42	41 16	#57 ↑	90s	
65	comp					
66	N7469	23 03	08 52	#6 ↑	3m	object to the east
67	comp					
68	MRK 335	00 06	20 12	#6 ↑	3.5m	
69	comp					
70	2MO10714	01 07	13 57	#68 ↑	12m	object to the west
71	comp					
72-74	sn1998ey	21 30	26 43	#2 ↑	20m	sn not visible to eye object to the west
75	comp					
76	sn1998es	01 37	05 53	#2 ↑	15m	tilt = 595.0
77	comp					
78	Feige25	2 38	5 28	#56 ↑	2m	tilt = 595.0
79	comp					
80	Feige 25	2 38	5 28	#56 ↑	2m	tilt = 610.0
81	comp					
82	Kopel-292	23 36	02 09	#73 ↑	20m	redo from 12/23 (proximity to moon)
83	comp					
84	qsum7-9.001	03 03	90 98	#55f ↑	20m	redo from 12-11 * PA = 80°
85	comp					forgot to update comment

84 - *

is this correct object?

60 inch Telescope Log
Observer: Calkins
PI: Koranyi, Geller, Garcia, McLeod

Spectrograph: FAST
Grating: 300 L
Date: 12/24/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
86	qsum7-4.002	03 02	40 52	#35f	20m	PA = 75° redo-12/11
87	comp			↑		
88	qsum7-4.027	2 45	41 15	#35f	20m	
89	comp			↑		
90	qsum2-4.031	2 45	41 44	#35f	17m	
91	comp			↑		
92	qsum7-4.032	2 45	41 44	#35f	20m	bright object to the
93	comp			↑		east, one object west
94	051356p03	5 13	01 08	#64	20m	redo - 12/9/98
95	comp			↑		
96	051858p07	5 18	07 03	#64	17m	redo - 12/20/98
97	comp			↑		
98	051758p06	5 17	6 32	#64	20m	PA = 100°
99	comp			↑		
100	051743p04	5 17	4 06	#64	20m	PA = 100°
101	comp			↑		
102	051749p05	5 17	5 98	#64	10m	PA = 100°
103	comp			↑		
104	051653p06	5 16	6 34	#64	20m	bright object west
105	comp			↑		
106	051435p05	5 19	5 06	#64	20m	-weak, shoulder clipped
107	comp			↑		
108	051553p02	05 15	02 18	#64	20m	
109	comp			↑		
110-112	CICam	04 19	55 59	#107	3,20,90	
113	comp			↑		
114	comp			↓		
115, 116	A0535p26	5 38	26 18	#109	30s	
117	comp			↑		
118, 119	HD39478	5 53	26 25	#109	10s	

92 - poor but 9

60 inch Telescope Log
Observer: CALY-INS
PI: Kenyon, Huchra

Spectrograph: FAST
Grating: 300l
Date: 12/24/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
120	comp			↑		
121	Bgsem	6 03	27 41	#100	5m	
122	comp			↑		
123	ZM071424.2p	7 14	3 33	#68	17m	bright star east
124	comp			↑		
125	ZM070549	7 03	27 25	#68	5m	
126	comp			↑		
127	ZM071049	7 10	17 10	#68	12m	stellar?
128	comp			↑		
129	ZM070701	7 07	13 06	#68	4m	
130	comp			↑		
131	ZM072346	7 23	15 33	#68	7m	
132	comp			↑		
133	ZM074740	7 47	18 28	#68	6m	
134	comp			↑		
135	ZM074811	7 48	18 30	#68	5m	
136	comp			↑		
137	ZM075121	7 51	22 30	#68	5m	
138	comp			↑		
139	ZM073800	7 38	23 59	#68	10m	object east
140	comp			↑		
141	ZM074851	7 48	18 06	#68	2.5m	
142	comp			↑		
143	ZM073539	7 35	25 10	#68	4m	
144	comp			↑		
145	ZM100513.4p	10 05	21 28	#68	12m	
146	comp			↑		
147	ZM102219	10 22	22 25	#68	5m	PA = 69°
148	comp			↑		
149	ZM102613	10 26	21 21	#68	4m	

60 inch Telescope Log
Observer: Calkins
PI: Huchra

Spectrograph: FAST
Grating: 300 l
Date: 12/24/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
150	comp			↑		
151	2M102700	10 26	17 49	π 68	3.5m	
152	comp			↑		
153	2M103545	10 35	20 03	π 68	3.5m	
154	comp			↑		
155	2M101237	10 12	22 18	π 68	2.5m	
156	comp			↑		
157	2M101552	10 15	18 23	π 68	2.5m	
158	comp			↑		
159	2M103305	10 33	13 20	π 68	10m	
160	comp			↑		
161	2M102206	10 22	21 20	π 68	4m	
162	comp			↑		
163	2M102805	10 28	20 46	π 68	5m	
164	comp			↑		
165	2M102335	10 23	20 17	π 68	3m	PA = 80°
166	comp			↑		
167	2M102136	10 21	23 59	π 68	4m	
168	comp			↑		
169	2M105736	10 57	23 53	π 68	3.5m	
170	comp			↑		
171	2M105752	10 57	23 51	π 68	3.5m	
172	comp			↑		
173	2M101905	10 19	19 20	π 68	3m	
174	comp			↑		
175	2M102153	10 21	23 50	π 68	7m	
176	comp			↑		
177	2M102355	10 23	22 39	π 68	8m	
178	comp			↑		
179	2M100316	10 03	23 48	π 68	3m	

60 inch Telescope Log
Observer: Calkins
PI: Hughes, All

Spectrograph: FAST
Grating: 300L
Date: 12/24/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
180	comp			↑		
181	ZM101550	10 15	20 39	π 68	5m	
182	comp			↑		
183	ZM102408	10 24	20 37	π 68	4.5m	
184	comp			↑		
185	ZM102600	10 26	19 59	π 68	3m	
186	comp			↑		
187	ZM100551	10 05	20 48	π 68	3.5m	
188	comp			↑		
189	ZM102639	10 26	21 98	π 68	3.5m	
190	comp			↑		
191	ZM102942	10 29	15 31	π 68	5m	
192	comp			↑		
193	ZM102717	10 27	16 28	π 68	3.5m	
194	comp			↑		
195	ZM134415	13 44	19 34	π 68	3m	
196	comp			↑		
197	ZM132357	13 23	17 02	π 68	3.5m	
198	comp			↑		
199	ZM134512	13 45	23 15	π 68	3m	
200	comp			↓		
201	ZM134541	13 45	22 02	π 68	4m	
202	comp			↑		
203	ZM134438	13 44	21 05	π 68	4m	
204	comp			↑		
205	N4258	12 18	47 18	π 6	2.5m	
206	comp			↑		
207	N3377	10 47	13 58	π 57	90s	
208	comp			↓		
209	Feige34	10 39	43 06	π 56	2m	

60 inch Telescope Log
Observer: CALKINS
PI: ALI

Spectrograph: FAST
Grating: 300 L
Date: 12/24/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
210	comp			↑		
211-220	BIAS				0s	
221-230	FLAT				6s	
231-240	BIAS				0s	
241-250	FLAT				12s	
251-260	DARK				15m	

60 inch Telescope Log
Observer: PBerland
PI: All

Spectrograph: FAST
Grating: 300l
Date: 12/25/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK					
11-20	BIAS				0s	★ Merry Christmas! ★
21-30	FLAT				6s	
31-40	BIAS				0s	a few clouds
41-50	FLAT				12s	
51-55	Sky	Zenith		57	2s	
56	Comp			↑	5s	
57-59	HD20x064	21:18	+49:56	57	3s	
60	Comp			↑		
61-63	HD 210839	22:04	58:24	57	5s	
64	Comp			↑		
65-67	HD 217001	22:50	58:48	57	5s	
68	Comp			↑		
69-71	HD 222640	23:42	62:57	57	3s	
72	Comp			↑		
73-75	HD 223166	00:00	+55:43	57	5s	
76	Comp			↑		
77-79	HD 236220	00:09	+62:13	57	5s	
80	Comp			↑		
81-83	HD 217086	22:51	+62:27	56	5s	
84	Comp			↑		
85-86	BD+28 4211	21:48	+28:39	56	40s	
87	Comp			↑		
88	Feige 110	23:17	-05:26	56	2m	6m by 2
89	Comp			↑		
90-91	M32					
92						
93	1556m213				6m	
94	Comp					

60 inch Telescope Log
Observer: PB
PI: Hucha & Kurangi

Spectrograph: FAST
Grating: 300 ℓ
Date: 12/25/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
95	ZM0S 1103	01:51	+30:28	68	8m	
96	COMP			↑		
97	ZM0148133	01:48	+32:08	68	10m	
98	COMP			↑		
99	ZM0151541.3	01:54	+41:03	66	8m	
100	COMP			↑		
101	ZM0152358.9	01:52	+32:04	68	6m	
102	COMP			↑		
103	ZM0150334	01:30	+32:04	68	7m	
104	COMP			↑		
105	ZM0151110.8	01:51	+30:29	66	6m	
106	COMP			↑		
107	ZM0150180	01:50	+32:25	68	10m	
108	COMP			↑		
109	ZM0149950.3	01:45	+33:19	66	10m	
110	COMP			↑		
111	gwm24.012	03:02	+44:06	35	10m	* to W PA=60
112	COMP			↑		gal-em
113	gwm4.034	02:45	+41:50	35	15m	
114	COMP			↑		
115	4.036	02:45	+42:18	35	15m	
116	COMP			↑		
117	4.037	02:46	+41:56	35	15m	em
118	COMP			↑		
119	4.039	02:45	+42:09	35	15m	em
120	COMP			↑		
121	4.043	02:46	+42:10	35	20m	
122	COMP			↑		
123	4.044	02:45	+42:11	35	15m	* to E, em
124	COMP			↑		

60 inch Telescope Log
Observer: PB
PI: Caulet

Spectrograph: FAST
Grating: 300 l
Date: 12/25/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
125-127	CI Cam	04:49	+55:58		2s, 20s, 90s	
128	Comp			↑		
129	a539.051555	05:15	+05:59	69	7m	*'s to E+W ; wk em
130	Comp			↑		
131	a539.051555	05:15	+07:08	69	5m	em: Sy 1
132	Comp			↑		
133	a539.051558	05:15	+04:43	64	6m	
134	Comp			↑		
135	a539.051558	05:15	+06:36	64	6m	6m by 2 * to W faint comp to W w/Ha
136	Comp			↑		
137	a539.05161 EW	05:16	+04:05	64	15m	E+W comps ; PA=100
138	Comp			↑		E-*-W higher
139	a539.05161	05:16	+06:11	64	10m	*-39 34
140	Comp			↑		
141	a539.051614	05:16	+03:59	64	6m	
142	Comp			↑		
143	a539.051616	05:16	+06:35	64	15m	PA=100 ; 6 m by 2
144	Comp			↑		gal w/ faint comp to E (*)
145	a539.051753	05:17	+08:59	64	15m	seeing worse
146	Comp			↑		
147	a539.051810	05:18	+02:12	64	10m	em
148	Comp			↑		
149	a539.051816	05:18	+04:18	64	15m	
150	Comp			↑		
151	a539.051817	05:18	+03:51	64	10m	* to W
152	Comp			↑		
153	a539.051823	05:18	+04:45	64	20m	faint
154	Comp			↑		
155	a539.051829	05:18	+06:22	64	10m	superposed star hd gal hw em
156	Comp			↑		

60 inch Telescope Log
Observer: PB
PI: Dark.

Spectrograph: FAST
Grating: 300l
Date: 12/25/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
157-8	HiHnor6W	06:42	+02:11	50	45s	
159	Comp			↑		
160	g539.051848	05:18	+03:57	64	20m	28S
161	Comp			↑		
162	g539.051849	05:18	+04:58	64	12m	thin clouds
163	Comp			↑		
164	g539.051851	05:18	+06:59	64	10m	could have used more!
165	Comp			↑		
166	07070p8619	07:25	+86:42	68	20m	em pix 2000! Ha LSB
167	Comp			↑		
168	g539.05184	05:18	+06:19	64	20m	
169	Comp			↑		
170	g539.051931	05:19	+05:49	64	15m	
171	Comp			↑		
172	SN1998ec	07:41	+64.44	2	20m	faint
173	Comp			↑		
174	GwmL046	09:15	+20:13	35	5m	
175	Comp			↑		
176	047	09:19	+19:31	35	7m	
177	Comp			↑		
178	048	09:17	+19:28	35	7m	
179	Comp			↑		
180	049	09:18	+20:09	35	15m	
181	Comp			↑		
182	050	09:18	+19:09	35	15m	wk
183	Comp			↑		
184	052	09:17	+20:02	35	15m	high cz
185	Comp			↑		
186	053	09:16	+20:46	35	10m	
187	Comp			↑		

60 inch Telescope Log
Observer: PB
PI: —

Spectrograph: FAST
Grating: 300
Date: 12/28/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
188	GWm1 055	09:49	+19:53	35	10m	
189	Comp			↑		
190	056	09:47	+20:02	35	15m.	
191	Comp			↑		
192	Comp			↓		
193,194	SN1998eg	13:11	+22:55	2	20m	
195	Comp			↑		
196-197	HZ44	13	+36	56	2m	
198	Comp			↑		thin clouds again
199	IRC10216	09:47	+13:16	57	6m	
200	Comp			↑		
201-203	HD 105262	12	+12	57	2s	
204	Comp			↑		
205-207	HD 95271	10:57	+08:31	57	2s	
208	Comp			↑		
209-218	BIAS					
	FLAT					
	BIAS					
	FLAT					

258 filter

60 inch Telescope Log
Observer: PBerlind
PI: Dan-And

Spectrograph: FAST
Grating: 300l
Date: 12/26/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BIAS				0s	solid clouds
21-30	FLAT				6s	@ sunset
31-40	BIAS				0s	
41-50	FLAT				12s	open @ 9pm
51-52	M32	00:39	+40	S7	30s	
53	COMP			T		thin clouds
54	163m219	00:40	+41:11	S7	6m	bright moon
55	COMP			T		
56	sc4b158e05EW	02:53	+05:44	S9	15m	E+W comps; E = star
57	COMP			T		bin by 2
58	012	02:51	+09:41	S9	15m	good em
59	COMP			T		delay of clouds
60	027	02:56	+06:22	S9	12m	
61	COMP			T		
62	033	02:59	+10:02	S9	15m	
63	COMP			T		
64-66	GICam	04:19	+55:59	107	2s,20s,90s	
67	COMP			T		
68-70	SN1998Fa	06:42	+41:25	Z	20m	7460 km/sec
69,71	COMP			T		
72	G191B2B	0501	+5245	S6	2m	
73	COMP			T		
74	a539.0527osp	0527	+05:47	64	15m	Fant + to W; wk
75	COMP			T		good em! pix 2129!
76	a539.0527ox	05:27	+06:43	64	12m	+ to E
77	COMP			T		
78	a539.0527oy	0527	+05:3[illegible]	64	10m	
79	COMP			T		

#56. E is a star - not copied to archive

60 inch Telescope Log

Observer: PB

PI: Dan K.

Spectrograph: FAST

Grating: 300l

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
80	a539.052711	05:27	+08:47	64	15m	
81	Comp			↑		delay of clouds
82	a539.052718	05:27	+08:27	64	10m	
83	Comp			↑		
84	a539.052716	05:27	+08:16	64	15m	* to E Sy
85	Comp			↑		
86	a539.052719	05:27	+04:43	64	6m	
87	Comp			↑		
88	MKW2.022	10:28	-03:14	35	15m	
89	Comp			↑		
90	018	10:29	-03:14	35	15m	em
91	Comp			↑		
92	019	10:30	-03	35	15m	* to W, redo all star
93	Comp			↑		
94	SN1998S	11:40	+47:28	2	20m	
95	Comp			↑		
100-101	Feige 34	10:36	+07:21	SC	90s	
102	Comp			↑		
103	MKW2.021	10:26	-02:46	35	12m	
104	Comp			↑		
105	022	10:29	-03:54	35	12m	big cosmic ray
106	Comp			↑		
107	023	10:29	-03:20	35	15m	
108	Comp			↑		
109	024	10:29	-03:44	35	12m	
110	Comp			↑		lots of clouds
111-112	HD116902	13:26	-03:22	57	30s	@ dawn
113	Comp			↑		
114-124	HD+	13	+30	57	5s	
125	Comp			↑		

126-135	BIAS	0s
136-145	FLAT	6s
146-155	BIAS	0s
156-165	FLAT	12s
166-175	DARK	15m

166-175 Dark

60 inch Telescope Log

Observer: PB

PI: All

Spectrograph: FAST

Grating: 300@

Date: 12/27/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
10	DARK				15m	
11-20	BIAS				0s	
21-30	FLAT				6s	
31-40	BIAS				0s	
41-50	FLAT				12s	thin clouds all over
51-55	sky			57	2s	bright moon
56	comp			↑	5s	
57-59	HD223385	23:48	62.12	57	2s	
60	comp			↑		
61-63	HD222275	23:34	62.06	57	2s	
64	comp			↑		
65-67	HD219671	23:09	49.39	57	5s	
68	comp			↑		
69-71	HD217470	22:30	57.13	57	2s	
72	comp			↑		
73-75	HD239998	22:20	57.00	57	2s	
76	comp			↑		
77-79	HD239960	22:28	57.42	57	5s	
80	comp			↑		
81-83	HD212044	22:20	51.51	57	2s	
84	comp			↑		
85-87	HD217082			56	3s	
88	comp			↑		
89-90	M32	00:39	+40.35	57	30s	
91	comp			↑		
92	225m280	00:41	+41.05	57	5m	
93	comp			↑		
94	2M0153+2.0	01:53	+33.23	68	6m	
95	comp			↑		

60 inch Telescope Log

Observer: PB

PI: Hutchin

Spectrograph: FAST

Grating: 300 l

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
96	ZM0154073	01:54	+40:16	68	6m	ok
97	Comp			T		
98	Soojal-292	23:26	+02:09	73	20m	quick look for GRB981226
99	Comp			T		← bin by 2; PA=70 pec!
100	ZM0151269	01:51	+30:50	68	15m	PA=90
101	Comp			T		
102	ZM0151042	01:51	+32:25	68	15m	
103	Comp			T		
104	ZM0151842	01:53	+31:18	68	12m	
105	Comp			T		
106	ZM0151247	01:51	+40:42	68	6m	
107	Comp			T		
108	ZM0155064	01:55	+41:27	68	6m	
109	Comp			T		
110-112	CXCam	04:19	+58:59	107	2s, 20s, 90s	
113	Comp			T		
114	ZM0351505	03:51	+13:42	68	5m	
115	Comp			T		
116	ZM0359080	03:59	+21:35	68	4m	
117	Comp			T		
118	ZM0350767	03:50	+18:49	68	4m	
119	Comp			T		
120	ZM0352521.4	03:25	+31:45	68	4m	
121	Comp			T		
122	ZM0351047.4	03:50	+16:59	68	6m	
123	Comp			T		
124	ZM0353545.2	03:28	+13:49	68	10m	6m by 2; * to E
125	Comp			T		
126	ZM0352125.9	03:21	+18:26	68	5m	
127	Comp			T		

60 inch Telescope Log
Observer: PB
PI: Geller

Spectrograph: FAST
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
128	2M0355109.9	03:50	+34:29	68	5m	
129	Comp			↑		
130	2M0355220.7	03:55	+31:22	68	5m	
131	Comp			↑		
132	2M0354329.7	03:43	+15:39	68	8m	b's to D em
133	Comp			↑		
134	2M0355259.0	03:52	+15:58	68	5m	
135	Comp			↑		
136	a539.051902	05:19	+02:09	64	12m	
137	Comp			↑		
138	a539.051909	05:19	+02:28	64	9m	
139	Comp			↑		
140	a539.051933	05:19	+03:25	64	10m	* to E
141	Comp			↑		
142	a539.051935	05:19	+03:51	64	15m	*'s to E+W
143	Comp			↑		
144	a539.051948	05:19	+04:33	64	20m	em
145	Comp			↑		
146	a539.051953	05:19	+04:54	64	15m	
147	Comp			↑		
148	a539.052515	05:25	+04:33	64	5m	
149	Comp			↑		
150	a539.052537	05:25	+05:29	64	8m	
151	Comp			↑		
152	a539.052542	05:25	+05:51	64	20m	em
153	Comp			↑		
154	a539.052558	05:25	+07:59	64	12m	
155	Comp			↑		
156	a539.052652	05:26	+04:51	64	10m	
157	Comp			↑		

60 inch Telescope Log
Observer: PB
PI: Geller

Spectrograph: FAST
Grating: 300 ℓ
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
158	a539.052655	05:26	+04:28	64	10m	
159	Comp			↑		
160	a539.052733	05:27	+07:17	64	10m	
161	Comp			↑		
162	a539.052735	05:27	+06:55	64	6m	
163	Comp			↑		
164	a539.052735	05:27	+07:21	64	12m	
165	Comp			↑		
166	a539.05804	05:28	+07:37	64	15m	
167	Comp			↑		
168	a539.052880	05:28	+05:36	64	15m	
169	Comp			↑		gal @ rows 41-43 only
170	a539.052911	05:28	+03:55	64	15m	em-ak. bright * to SE
171	Comp			↑		much scattered light
172	a539.052827	05:28	+03:44	64	6m	
173	Comp			↑		
174	a539.052628	05:26	+09:09	64	15m	
175	Comp			↑		
176	a539.052727	05:29	+07:28	64	20m	
177	Comp			↑		
178-9	AO535p26	05:38	+26:18	104	30s	1.1" slit ↓
180	Comp			↑		
181-2	HD59778	05:53	+26:25	104	10s	
183	Comp			↑		
184	BGGem	06:03	+27:41	100	5m	3" slit ↓
185	Comp			↑		
186	SN1998fg	06:41	+91:25	2	20m	
187	Comp			↑		
188-189	Feige 34	10:36	+43	56	90s	
190	Comp			↑		

60 inch Telescope Log
Observer: PB
PI: Andy Dan

Spectrograph: FAST
Grating: 300 2
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
191	Arp s027.018	09:14	+17:09	59	10m	
192	comp			↑		
193	050	09:19	+16:48	59	8m	A + to E
194	comp			↑		
195	051	09:14	+17:23	59	15m	
196	comp			↑		
197	055	09:13	+17:02	59	10m	
198	comp			↑		
199	058	09:15	+18:26	59	10m	
200	comp			↑		
201	059	09:15	+17:33	59	10m	
202	comp			↑		
203	061	09:15	+17:42	59	5m	
204	comp			↑		
205	063	09:15	+17:38	59	4m	
206	comp			↑		
207	064	09:15	+17:34	59	10m	
208	comp			↑		
209	065	09:17	+17:11	59	5m	
210	comp			↑		
211	mkw2_025	10:25	-03:20	35	10m	
212	comp			↑		
213	026	10:26	-03:17	35	8m	
214	comp			↑		
215	033	10:27	-02:58	35	6m	
216	comp			↑		
217	034	10:27	-03:03	35	8m	
218	comp			↑		
219	035	10:27	-03:07	35	6m	
220	comp			↑		

60 inch Telescope Log

Observer: AB

PI: Dan.

Spectrograph: FAST

Grating: 300 2

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
221	mkw2_036	10:30	-03:15	35	5m	
222	comp			T		
223	039	10:27	-03:24	35	10m	
224	comp			T		
225	038 EW	10:29	-03:22	35	8m	binby 2; close E-W pair
226	comp			↑		
227	039	10:25	-02:56	35	8m	
228	comp			↑		
229	644	10:23	-03:55	35	6m	em + cosmic
230	comp			T		
231	MRK424	11:01	+38:28	6	5m	
232	comp			↑		seeing worse.
233	N4151	12:08	+39:41	6	30s	
234	comp			↑		
235	N5548	14:25	+25:22	6	3m	
236	comp			T		
237-8	HZ44	1321	+36:23	56	2m	
239	comp			↑		
240-242	HD 90044	10:23	-04:09	57	2s	
243	comp			↑		
244-246	HD 90944	10:35	-00:38	57	.2s	
247	comp			↑		
248-250	HD 91316	10:32	09:18	57	2s	
251	comp			↑		
252-254	HD 100286	11:51	-03:45	59	5s	
255	comp			↑		
256-258	HD 100764	11:35	-11:35	57	5s	
259	comp			T		☆ End of FAST Run;
260-269	BIAS			0	0s	clear & dam
270-279	FLAT			0	6s	
280-289	BIAS				0	
290-299	FLAT				12s	
300-309	FLAT				20s	-1.1" slit