

60 inch Telescope Log Observer: <u>CAIKINS</u> PI: <u>Kirshner</u>	Spectrograph: <u>FAST</u> Grating: <u>300L</u> Date: <u>6/1/98</u>
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Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0s	BINARY 4
11-20	FLAT				6s	↓
21-30	BIAS				0s	BINARY 2
31-40	FLAT				12s	↓
41-50	DARKS				15m	BINARY 4
51-55	Sky			#57	2s	
56	comp			↑		
57,58	Feige 34	10 39	43 05	#56	90s	
59	comp			↑		
60	MRK 421	11 04	38 12	#6	4m	
61	comp			↑		
62	N4051	12 03	44 31	#6	2m	
63	comp			↑		
64	N4151	12 08	39 41	#6	30s	
65	comp			↑		
66	N4258	12 18	47 18	#6	2m	
67	comp			↑		
68	MRK 279	13 53	69 18	#6	3m	star to east
69	comp			↑		
70	SBS1425p606	14 26	60 25	#6	10m	
71	comp			↑		
72	N5548	14 17	25 08	#6	3m	
73	comp			↑		
74-76	sn1998bu	10 46	11 50	#2	5m	Max at 10:59/6:32
77	comp			↑		BINARY 2
78,79	sn1998s	11 46	47 29	#2	10m	
80	comp			↑		
81	sn1998aq	11 56	53 07	#2	10m	galactic arms to east
82	comp			↑		
83,84	H2 44	13 23	36 07	#56	2m	

60 inch Telescope Log
 Observer: CALKENS
 PI: Koranyi, Kenyon
 Spectrograph: FAST
 Grating: 300L
 Date: 6/1/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
85	comp			↑		
86	mkw7-033	14 33	3 56	#35	8m	BINARY 4
87	comp			↑		
88	mkw7-034	14 34	3 23	#35	12m	star to the east
89	comp			↑		
90	mkw7-035	14 33	3 30	"35	20m	
91	comp			↑		
92	mkw7-026	14 35	3 48	#35	15m	star to the east
93	comp			↑		
94	mkw7-036	14 32	3 46	#35	15m	star to the west
95	comp			↑		
96	162536m241504	16 25	-24 15	#74	4m	
97	comp			↑		
98	162557m243030	16 25	-24 30	#74	2m	
99	comp			↑		
100	162603m242337	16 26	-24 23	#74	2m	
101	comp			↑		
102	162623m242101	16 26	-24 20	#74	1m	
103	comp			↑		
104	162623m244311	16 26	-24 43	#74	1m	
105	comp			↑		
106	162624m241616	16 26	-24 16	#74	2m	
107	comp			↑		
108	162624m242330	16 26	-24 23	#74	1m	
109	comp			↑		
110	162641m244015	16 26	-24 40	#74	3m	
111	comp			↑		
112	162642m242031	16 26	-24 19	#74	10m	
113	comp			↑		
114	162646m241203	16 26	-24 11	#74	2m	

60 inch Telescope Log				Spectrograph: <u>FAST</u>		
Observer: <u>CALKINS</u>				Grating: <u>300L</u>		Page: <u>6297</u>
PI: <u>Kenyon, Kishner, Mahdavi</u>				Date: <u>6/1/98</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
115	comp			↑		
116	16258m244529	16 26	-24 45	#74	3m	
117	comp			↑		
118	162110m24914	16 27	-24 18	#74	2m	
119	comp			↑		
120	MRK 501	16.53	39 45	#6	5m	star to the east
121	comp			↑		
122	sn/998bp	17.54	18 19	#2	15m	BINARY 2
123	comp			↑		
124	ngc 385.002	16 13	35 08	#59	8m	BINARY 4
125	comp			↑		
126	ngc 385.003	16 14	34 52	#59	3m	
127	comp			↑		
128	ngc 385.004	16 14	35 15	#59	2m	
129	comp			↑		
130	ngc 385.005	16 14	35 06	#59	2m	
131	comp			↑		
132	" " .006	16 15	34 29	#59	5m	
133	comp			↑		
134	" " .007	16 15	34 13	#59	5m	
135	comp			↑		
136	" " .008	16 15	35 08	#59	12m	
137	comp			↑		
138	" " .009	16 16	34 09	#59	10m	
139	comp			↑		
140	" " .010	16 16	34 44	#59	8m	
141	comp			↑		
142	" " .011	16 16	35 47	#59	5m	
143	comp			↑		
144	" " .012					

60 inch Telescope Log

Observer: CAIKINS

PI: McClintock, Mahdavi

Spectrograph: FAST

Grating: 300L

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Date: 6/1/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
145	comp			↑		
146	comp			↓		1.1" slit
147,148	4L1907p09	19 09	9 49	#77	15m	↓
149	comp			↑		
150,151	HD230579	19 04	11 06	#77	20s	
152	comp			↑		
153-157	FLAT				20s	↓
158	nrqs385.013	16 16	35 42	#59	5m	3" slit
159	comp			↑		
160	nrqs385.014	16 16	34 39	#59	5m	
161	comp			↑		
162	" ".017	16 16	35 13	#59	10m	star to the west
163	comp			↑		
164	3C390.3	18 42	79 46	#6	10m	
165	comp			↑		
166	nrqs385.019	16 16	35 17	#59	8m	
167	comp			↑		
168-170	CICyg	19 50	35 40	#12	30s	
171	comp			↑		
172-174	HD192281	20 12	40 16	#56	5s	
175	comp			↑		
176-185	BIAS				0s	BINBY 4
186-195	FLAT				6s	
196-205	BIAS				0s	BINBY 2
206-215	FLAT				12s	
216-225	DARKS				15m	

60 inch Telescope Log		Spectrograph: <u>FAST</u>		Page: <u>6324</u>		
Observer: <u>B. Carter</u>		Grating: <u>300 Å, 3" slit</u>		Date: <u>6-15-98</u>		
PI: <u>Kirchner, Carter, Wilkes</u>				<u>clear, breezes</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0	bin by 4
11-20	BIAS				0	bin by 2
21	DARK				15m	" " 4 (behind schedule)
22-31	FLAT				6s	" " 4
32-41	FLAT				12s	" " 2
42	N4853			#57	6s 3 min	bin by 4
43	COMP			↑	6s	"
44	sn1998bu	10:46	+11:50	#2	5 min	bin by 2
45	COMP			↑	12s	
46, 48	sn1998bu	"	"	#2	5 min	
47, 49	COMP			↑	12s	
50, 52	sn1998s	11:46	+47:28	#2	10 min	
51, 53	COMP			↑	12s	
54	Feige 67	12:39	+17:47	#56	5 min	
55	COMP			↑	12s	
56	Z011697	13:03	+27:59	#75	200s	bin by 4
57	COMP			↑	6s	
58	Z011698	13:04	+28:14	#75	3m	
59	COMP			↑	6s	
60	N002959	13:04	+27:18	#75	7m	
61	COMP			↑		
62	Z010042	13:04	+26:40	#75	5m	
63	COMP			↑		
64	Z002074	13:05	+27:34	#75	3m	
65	COMP			↑		
66	Z007393	13:05	+31:59	#75	4m	
67	COMP			↑		
68	N4051	12:00	+44:48	#6	2m	
69	COMP			↑		
70	N4151	12:08	+39:41	#6	30s	
71	COMP			↑		

problems with FAST power supply & shutter (fixed late afternoon)

reports → (behind schedule)

printing and focus both were way off! Had to go to a bright star.

60 inch Telescope Log
 Observer: B. Carter
 PI: Wilkes, Carter
 Spectrograph: FAST
 Grating: 300 Å, 3" slit, binlog4 Page: 6325
 Date: 6/15/98 clear, moon

Number	Object	R. A.	Dec.	L/R	Exp	Comments
72	N 4258	12:16	+47:34	#6	2m	binlog4
73	COMP			↑		
74	MRK 279	13:51	+69:33	#6	3m	
75	COMP			↑		
76	SPS 1425 p 606	14:25	+60:39	#6	10m	
77	COMP			↑		
78	N 5548	14:15	+25:22	#6	3m	
79	COMP			↑		
80	MRK 501	16:53	+39:45	#6	5m	
81	COMP			↑		
82	Z 000944	13:05	+27:44	#75	5m	
83	COMP			↑		
84	Z 004622	14:27	+30:56	#75	5m	
85	COMP			↑		
86	O 000080	14:27	+29:57	#75	9m	
87	COMP			↑		
88	A 000477	14:27	+26:30	#75	6m	
89	COMP			↑		
90	N 002969	14:28	+26:56	#75	10m	
91	COMP			↑		
92	Z 010057	14:28	+27:15	#75	5m	airmass 1.23. Galaxy aligned along slit
93	COMP			↑		
94	Z 001475	14:28	+27:24	#75	2m	big bright spiral (Sa)
95	COMP			↑		
96	Z 013793	14:28	+30:38	#75	9m	Spiral/Err edge on it (satellite passed thru W. side of chip - Mill)
97	COMP			↑		
98	Z 003488	14:28	+30:24	#75	10m	(SB) tracking not very good with autoguider - star too faint? (see m) airmass 1.29
99	COMP			↑		
100	PG 1708 p 602	17:08	+60:13	#56	90s	airmass 1.15
101	COMP			↑		

60 inch Telescope Log

Observer: B. Carter

PI: Huchra, Malin

Spectrograph: FAST

Grating: 200L, 3" slit, binby4 Page: 6326

Date: 6/15/98

clear, moon

Number	Object	R.A.	Dec.	L/R	Exp	Comments
102	2M173532.4p.20309	17:35	+20:30	#68	7m	airmass 1.02 * object is to E, star to W
103	COMP			↑		
104	2M173543.7p.	17:35	+18:52	#68	6m	1.03
105	COMP			↑		
106	2M173541.1p.	17:35	+18:34	#68	10m	star to W
107	COMP			↑		
108	2M174526.8p.	17:45	+17:29	#68	7m	
109	COMP			↑		
110	2M174959.3p.	17:49	+18:26	#68	6m	star to far W
111	COMP			↑		
112	nrgs 385.020	16:16	+35:20	#59	7m	could have been longer
113	COMP			↑		
114	nrgs 385.021	16:16	+35:42	#59	6m	
115	COMP			↑		
116	3C390.3	18:45	+79:43	#6	10m	
117	COMP			↑		
118	nrgs 385.025	16:16	+34:55	#59	8m	
119	COMP			↑		
120	nrgs 385.026	16:17	+34:09	#59	5m	
121	COMP			↑		
122	nrgs 385.027	16:17	+34:52	#59	5m	
123	COMP			↑		
124	nrgs 385.028	16:17	+35:30	#59	5m	airmass 1.29
125	COMP			↑		
126	nrgs 385.029	16:17	+34:52	#59	6m	broad tenuous disk of unrelated galaxy to W. May be hard to separate from sky background off
127	COMP			↑		
128	nrgs 385.031	16:17	+34:47	#59	5m	
129	COMP			↑		
130	nrgs 385.030	16:17	+34:43	#59	5m	
131	COMP			↑		

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>6327</u>
Observer: <u>B. Carter</u>				Grating: <u>300 Å, 3" slit</u>		Date: <u>6/15/98</u>
PI: <u>Mahdavi, Rivas, Kenyon, Huchra</u>				Date: <u>6/15/98</u>		<u>clear, moon</u>
Number	Object	R.A.	Dec.	L/R	Exp	Comments
132	nrqs 385.032	16:17	+34:54	#59	4m	binby4
133	COMP			↑		
134	E 34491	16:25	+37:55	#64	8m	star to W? <i>should have been larger</i>
135	COMP			↑		
136	E 34528	16:25	+37:51	#64	5m	
137	COMP			↑		
138	E 34552	16:27	+40:40	#64	7m	
139	COMP			↑		
140	E 345828	16:28	+40:41	#64	6m	
141	COMP			↑		
142	HD192281	20:12	+40:07	#56	30s	airmass 1.01 (^{too} bright!)
143	COMP			↑		
144	HD192281	"	"	#56	5s	
145	COMP			↑		
146	HD192281	"	"	#56	2s	
147	COMP			↑		
148	HD192281	"	"	#56	9s	binby2
149	COMP			↑	12s	↓
150	HD192281	"	"	#56	5s	
151	COMP			↑	12s	
152	Cyg OB2m9	20:31	+41:04	#56	15s	binby4
153	COMP			↑		
154	MRK 509	20:41	-10:54	#6	3m	
155	COMP			↑		
156, 157	CICyg	19:50	+35:41	#12	1s, 30s	
158	COMP			↑		
159	2M180258.3p..	18:02	+19:59	#68	10m	needs a little more airmass 1.33 star to extreme
160	COMP			↑		
161	2M173522.7p..	17:35	+21:06	#68	8m	1.52
162	COMP			↑		

60 inch Telescope Log		Spectrograph: <u>FAST</u>				
Observer: <u>D. Carter</u>		Grating: <u>300L, 3" slit</u> except <u>as noted</u> Page: <u>6329</u>				
PI: <u>Kirshner, Wilkes, Carter</u>		Date: <u>6/16/98</u> (most exposures are binby4)				
Number	Object	R.A.	Dec.	L/R	Exp	Comments
						clear, some wind
1-10	BIAS				0	binby4
11-20	BIAS				0	binby2
21-30	FLAT				6s	binby4
31-40	FLAT				12s	binby2
41-50	FLAT				20s	1.1" slit, binby4
51-55	DARK				15m	(3" slit)
56-60	DARK				15m	binby2
61-65	sky				10s	(binby4)
66	COMP			↑	6s	
67	H244	13:21	+36:23	#56	2m	(sky still pretty bright)
68	COMP			↑	6s	
69-71	sn1998bu	10:46	+11:50	#2	5m	binby2
72	COMP			↑	12s	
73	sn1998ag	11:56	+55:07	#2	15m	galaxy to E, sn to W
74	COMP			↑	12s	
75	H244	13:21	+36:23	#56	4m	
76	COMP			↑	12s	
77	H244	"	"	#56	2m	binby4
78	COMP			↑	6s	
79	MRK421	11:01	+38:28	#6	4m	
80	COMP			↑		
81	MRK279	13:51	+69:33	#6	3m	
82	COMP			↑		
83	Z008587	13:05	+31:26	#75	5m	
84	COMP			↑		
85	Z013761	13:06	+28:35	#75	3½ m	
86	COMP			↑		
87	Z006260	13:06	+28:32	#75	3½ m	
88	COMP			↑		
89	Z013762	13:07	+28:02	#75	9m	
90	COMP			↑		

60 inch Telescope Log

Observer: B. Carter

PI: Carter, Wilkes

Spectrograph: FAST

Grating: 300 λ , 3" slit, binby 4 Page: 6330

Date: 6/16/98 *photometric, calm*

Number	Object	R.A.	Dec.	L/R	Exp	Comments
91	Z011699	13:07	+28:42	#75	4m	
92	COMP			↑		
93	Z011700	13:08	+27:30	#75	4m	
94	COMP			↑		
95	Z005407	13:08	+28:19	#75	4m	
96	COMP			↑		
97	N5548	14:15	+25:22	#6	3m	
98	COMP			↑		
99	Z002341	13:08	+28:11	#75	4m	
100	COMP			↑		
101	Z011701	13:09	+30:02	#75	4m	
102	COMP			↑		
103	Z006261	13:10	+31:26	#75	4m	airmass 1.17
104	COMP			↑		
105	Z003480	13:11	+31:30	#75	3 $\frac{1}{2}$ m	
106	COMP			↑		
107	Z006262	13:12	+27:19	#75	3m	
108	COMP			↑		
109	Z003481	13:12	+26:41	#75	5m	emission
110	COMP			↑		
111	Z003482	13:12	+31:48	#75	3m	(5a)
112	COMP			↑		
113	N001360	13:12	+31:15	#75	10m	faint! small core, v. faint face-on.
114	COMP			↑		
115	Z011702	13:13	+27:45	#75	3 $\frac{1}{2}$ m	
116	COMP			↑		
117	Z001076	13:13	+27:48	#75	3m	airmass 1.31
118	COMP			↑		
119	O 000030	13:14	+30:29	#75	7m	
120	COMP			↑		

60 inch Telescope Log

Observer: B. Carter

PI: Carter, Kenyon, Rines

Spectrograph: FAST

Grating: 300 Å, 3" slit, binby 4 Page: 6331

Date: 6/16/98 clear, calm

Number	Object	R.A.	Dec.	L/R	Exp	Comments
121	Z002075	13:14	+30:42	#75	3m	
122	COMP			↑		
123,124	AG Dra	16:01	+66:48	#12	2, 20s	
125	COMP			↑		
126	Z011703	13:15	+30:24	#75	3 1/2 m	airmass 1.39
127	COMP			↑		
128	Z007395	13:15	+31:50	#75	5m	
129	COMP			↑		
130	Z001077	13:16	+30:57	#75	3m	
131	COMP			↑		
132	Z005408	13:16	+30:15	#75	3m	airmass 1.96
133	COMP			↑		
134	162722m244807	16:27	-24:48	#74	2m	} possibly under exposed. redo? ¹³
135	COMP			↑		
136	162735m243834	16:27	-24:38	#74	4m	¹⁴
137	COMP			↑		
138	162739m243914	16:27	-24:39	#74	8m	¹⁶
139	COMP			↑		
140	162749m242540	16:27	-24:25	#74	5m	¹⁷
141	COMP			↑		
142	162803m242632	16:28	-24:26	#74	4m	¹⁸
143	COMP			↑		
144	162809m242322	16:28	-24:23	#74	10m	¹⁹
145	COMP			↑		
146	162854m244743	16:28	-24:47	#74	12m	airmass 2.0 ²⁰
147	COMP			↑		
148	E346326	16:29	+40:27	#64	6m	airmass 1.08 ⁹⁴
149	COMP			↑		
150	E346349	16:29	+40:35	#64	5m	⁹⁵
151	COMP			↑		

60 inch Telescope Log

Observer: B. Carter

PI: Rines, McClintock, Huchra, Kenyon

Spectrograph: FAST

Grating: 200 Å, 3" slit, binby 4 Page: 6332
(except as noted)

Date: 6/16/98 clear, moon

Number	Object	R.A.	Dec.	L/R	Exp	Comments
152	E 346364	16:29	+40:39	# 64	10m	96
153	COMP			↑		
154	E 346550	16:29	+40:43	# 64	8m	97
155	COMP			↑		
156	E 346551	16:29	+40:32	# 64	9m	star to E 98
157	COMP			↑		
158	E 346671	16:29	+40:41	# 64	6m	small stars to E? 99
159	COMP			↑		
160	E 347029	16:30	+40:39	# 64	7m	star to W? maybe missed 100 the slit.
161	COMP			↑		
162	E 347039	16:30	+40:35	# 64	10m	star to far W 101
163	COMP			↑		
164	COMP			↓	8s	1.1" slit
165, 166	4U 1907-09	19:09	+09:49	# 77	15m	↓
167	COMP			↑	8s	
168	HD 230579			# 77	15s	
169	COMP			↑	8s	
170	2M 174545.6p	17:45	+19:12	# 68	8m	3" slit 25
171	COMP			↑	6s	
172	HD 192281	20:12	+40:16	# 56	2s	
173	COMP			↑		
174	Cyg OB2 no 9	20:31	+41:04	# 56	20s	airmass 1.02
175	COMP			↑		
176	2M 173532.8p	17:35	+23:20	# 68	15m	airmass 1.27 26
177	COMP			↑		
178	2M 174542.6p	17:45	+23:05	# 68	13m	star to W 27
179	COMP			↑		
180, 181	CICyg	19:50	+35:41	# 12	1s, 30s	
182	COMP			↑		
183	2M 174954.4p	17:49	+17:55	# 68	15m	star to W 28
184	COMP			↑		

60 inch Telescope Log

Observer: B. Carter


PI: Huchra, Wilkes, Kenyon

Spectrograph: FAST

Grating: 300 Å, 3" slit, binby 4 Page: 6333

Date: 6/16/98 *except as noted* clear, moon

Number	Object	R.A.	Dec.	L/R	Exp	Comments
185	2M174936.4p	17:49	+21:17	#68	13m	star to E 29
186	COMP			↑		
187	N7469	23:03	+08:52	#6	2 1/2 m	star to E
188	COMP			↑		
189,190	ε And	23:33	+48:49	#12	1s, 20s	
191	COMP			↑		
192	BDP 284211	21:48	+28:37	#56	20s	airmass 1.00
193	COMP			↑		
194	HD 217086	22:54	+62:27	#56	3s	airmass 1.19
195	COMP			↑		
196-205	BIAS				0	
206-215	FLAT				6s	
216-225	BIAS				0	} binby 2
226-235	FLAT				12s	
236-240	FLAT				20s	} 1.1" slit, binby 4
241-245	sky				10s	
246-250	FLAT				20s	

60 inch Telescope Log		Spectrograph: <u>FAST</u>				P.A. <u>90°</u>
Observer: <u>B. Carter</u>		Grating: <u>300 L, 3" slit, binby 4</u>				Page: <u>6334</u>
PI: <u>Kirshner, Wilkes, Carter</u>		Date: <u>6/17/98</u>				except as noted
						<u>clear</u>
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0	binby 4
11-20	BIAS				0	binby 2
21-30	FLAT				12s	binby 2
31-40	FLAT				6s	binby 4
41-45	DARK				15m	"
46-50	DARK				15m	binby 2
51-55	sky				1s	binby 4
56-60	sky				2s	binby 2
61	COMP				6s	binby 4
62	COMP				12s	binby 2
63	H244	13:21	+36:23	# 56	2m	binby 4 sky quite bright
64	COMP			↑	6s	
65-67	sn 1998 bu	10:46	+11:50	# 2	5m	} binby 2
68	COMP			↑	12s	
69	Feige 24	10:26	+43:21	# 56	10s	
70	COMP			↑	12s	
71	N4151	12:08	+39:41	# 6	30s	binby 4
72	COMP			↑	6s	
73	N4258	12:16	+47:34	# 6	2m	
74	COMP			↑		
75	MRK 279	13:51	+69:33	# 6	3m	
76	COMP			↑		
77	Z 007396	13:16	+30:40	# 75	5m	105
78	COMP			↑		
79	Z 003484	13:16	+31:01	# 75	3 1/2 m	faint extended face-on disk 106 (halo?) - only seen on finding chart
80	COMP			↑		
81	Z 011704	13:16	+31:34	# 75	7m	lumpy  107
82	COMP			↑		
83	Z 010046	13:17	+30:32	# 75	3m	108
84	COMP			↑		

60 inch Telescope Log

Observer: B. Carter

PI: Carter



Spectrograph: FAST



Grating: 300R, 3" slit, bin by 4

Page: 6335

Date: 6/17/98

clear

Number	Object	R.A.	Dec.	L/R	Exp	Comments
85	Z011705	13:17	+31:03	#75	7m	109
86	COMP			↑		
87	Z002743	13:17	+31:05	#75	5m	finding chart shows lovely spiral structure (emission lines)  110
88	COMP			↑		
89	Z006263	13:17	+27:74	#75	3 1/2 m	111
90	COMP			↑		
91	Z004009	13:18	+31:28	#75	4m	Err (spectrum is blue!) 112
92	COMP			↑		
93	Z008588	13:18	+31:20	#75	3m	113
94	COMP			↑		
95	Z013764	13:18	+30:51	#75	3m	114
96	COMP			↑		
97	Z010047	13:18	+30:46	#75	3m	115
98	COMP			↑		
99	Z002344	13:19	+28:30	#75	3m	 116
100	COMP			↑		
101	Z002681	13:19	+30:15	#75	4m	117
102	COMP			↑		
103	Z008589	13:19	+30:07	#75	3m	118
104	COMP			↑		
105	Z007397	13:20	+31:58	#75	3 1/2 m	119
106	COMP			↑		
107	Z007398	13:20	+30:59	#75	3 1/2 m	120
108	COMP			↑		
109	Z013765	13:20	+30:53	#75	5m	121
110	COMP			↑		
111	Z005409	13:20	+31:30	#75	6m	122
112	COMP			↑		
113	Z011706	13:20	+30:36	#75	5m	star to W 123
114	COMP			↑		

60 inch Telescope Log				Spectrograph: <u>FAST</u>		
Observer: <u>B. Carter</u>				Grating: <u>300A, 3" slit, binby4</u> Page: <u>6336</u>		
PI: <u>Carter</u>				Date: <u>6/17/98</u> <u>clear</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
115	Z 008590	13:20	+32:00	#75	3m	124
116	COMP			↑		
117	N 001757	13:21	+31:13	#75	9m	broad disk, face-on 125
118	COMP			↑		
119	Z 006264	13:21	+31:23	#75	3 1/2 m	126
120	COMP			↑		
121	Z 011707	13:21	+31:22	#75	5m	127
122	COMP			↑		
123	Z 004618	13:21	+31:21	#75	6m	airmass 1.26 128
124	COMP			↑		
125	Z 005411	13:21	+31:14	#75	8m	129
126	COMP			↑		
127	Z 008594	13:21	+26:44	#75	3m	130
128	COMP			↑		
129	O 000079	13:22	+31:49	#75	10m	131
130	COMP			↑		
131	Z 001206	13:22	+26:58	#75	3m	132
132	COMP			↑		
133	Z 003012	13:22	+28:18	#75	5m	133
134	COMP			↑		
135	Z 005412	13:22	+27:06	#75	5m	134
136	COMP			↑		
137	N 002960	13:23	+31:38	#75	7m	airmass 1.50 135
138	COMP			↑		
139	Z 001474	13:23	+31:33	#75	3m	136
140	COMP			↑		
141	Z 002683	13:23	+30:59	#75	3m	 137
142	COMP			↑		
143	B 000127	13:24	+31:20	#75	7m	 1.63 138
144	COMP			↑		

60 inch Telescope Log				Spectrograph: <u>FAST</u>		
Observer: <u>B. Carter</u>				Grating: <u>300 L, 3" slit, binby4</u> Page: <u>6337</u>		
PI: <u>Wilkes, Gugin, Kenyon, Carter</u>				Date: <u>6/17/98</u> <u>clear</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
145	N 5548	14:15	25:22	#6	3m	
146	COMP			↑		
147	14032p310D	14:03	+31:00	#42	15m	special request
148	COMP			↑		
149,150	AG Dra	16:01	+66:48	#12	2s, 20s	
151	COMP			↑		
152	Z002077	14:17	+26:24	#75	4m	star to W 222
153	COMP			↑		
154	Z005416	14:18	+31:39	#75	3m	223
155	COMP			↑		
156	Z013789	14:18	+26:23	#75	5m	224
157	COMP			↑		
158	Z004621	14:18	+26:17	#75	3m	--- 225
159	COMP			↑		
160	Z011725	14:18	+26:35	#75	2 1/2 m	226
161	COMP			↑		
162	N000877	14:20	+26:51	#75	4m	star to W? 227
163	COMP			↑		
164	Z006270	14:21	+28:59	#75	3 1/2 m	228
165	COMP			↑		
166	Z007409	14:21	+31:35	#75	5m	229
167	COMP			↑		
168	Z008599E	14:23	+28:20	#75	4m	} two galaxies? Or just one lumpy gal? 2 galaxies
169	Z008599W	"	"	"		
170	COMP			↑		
171	Z011726	14:24	+27:42	#75	5m	lovely open spiral arms on finding chart 231
172	COMP			↑		--- 232
173	Z013791	14:24	+27:49	#75	5m	nothing to guide on! 232
174	COMP			↑		
175	Z013792	14:25	+26:27	#75	7m	233
176	COMP			↑		

60 inch Telescope Log			Spectrograph: FAST			
Observer: <u>B. Carter</u>			Grating: <u>300, 3" slit, binby 4</u> Page: <u>6338</u>			
PI: <u>Carter, Kirshner, Kenyon, Rines</u>			Date: <u>6/17/98</u> clear			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
177	N 001761	14:25	+30:28	#75	4m	234
178	COMP			↑		
179	N 001762	14:26	+27:11	#75	4m	235
180	COMP			↑		
181	Z 004014	14:26	+31:31	#75	10m	airmass 2.11 236
182	COMP			↑		
183	Z 000945	14:57	+29:58	#75	5m	star to W 234
184	COMP			↑		(Err)
185	N 002275	14:58	+26:44	#75	7m	235
186	COMP			↑		
187	Z 005418	14:59	+27:06	#75	6m	low (on chart) -- E=1 236
188	COMP			↑		nothing to guide on!
189	HD 192281	20:10	+	#56	2s	
190	COMP			↑		
191	HD 192281	"		#56	4s	} binby 2
192	COMP			↑	12s	
193	sn 1998bp	17:54	+18:19	#2	20m	} *
194	COMP			↑	12s	
195	Cyg OB2 no 9	20:31	+41:04	#56	20s	binby 4
196	COMP			↑		
197, 198	CICyg	19:50	+35:41	#12	1s, 30s	
199	COMP			↑		
200	E 347102	16:30	+40:36	#64	5m	102
201	COMP			↑		
202	E 347131	16:30	+40:36	#64	6m	103
203	COMP			↑		
204	E 347257	16:30	+40:37	#64	15m	really faint! 104
205	COMP			↑		
206	E 347284	16:30	+40:42	#64	13m	another faint one... 105
207	COMP			↑		

60 inch Telescope Log
 Observer: B. Carter
 PI: Rines, Wilkes, Kenyon

Spectrograph: FAST
 Grating: 3001, 3" slit, binby 4 Page: 6339
 Date: 6/17/98 except as noted clear

Number	Object	R.A.	Dec.	L/R	Exp	Comments
208	E 348090	16:32	+40:34	#64	4m	star on E shoulder 106
209	COMP			↑		
210	E 34836	16:26	+37:50	#64	12m	faint object to E, very 117
211	COMP			↑		bright object to W - which is the intended target?
212	N 7469	23:03	+08:56	#6	2 1/2 m	← star to E
213	COMP			↑		
214, 215	ζ And	23:33	+48:49	#12	1s, 20s	
216	COMP			↑		
217	BDp 284211	21:51	+28:37	#56	20s	sky getting bright
218	COMP			↑		
219	V1515 Cyg	20:22	+44:02	#74	1m	
220	COMP			↑		
221	V1057 Cyg	20:57	+44:03	#74	1m	
222	COMP			↑		
223-232	FLAT	sunith			6s	
233-242	BIAS				0	
243-247	sky				1s	
248	COMP			↑	6s	
249-258	FLAT				12s	} binby 2
259-268	BIAS				0	

210 - bright object to W is star (α = ~~10~~ -160)
 fainter object to E is galaxy

<p>60 inch Telescope Log Observer: <u>B. Carter</u> PI: <u>Kirshner, Wilkes, Carter</u></p>	<p>Spectrograph: <u>FAST</u> Grating: <u>300A</u> Date: <u>6/18/98</u></p>
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P.A. 90°
Page: 6340
clear

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS	<u>zenith</u>			0	binby 4 3" slit
11-20	BIAS				0	binby 2
21-30	FLAT				6s	binby 4
31-40	FLAT				12s	binby 2
41-50	FLAT				20s	binby 4 1.1" slit
51-55	DARK				15m	binby 4 3" slit
56-60	DARK				15m	binby 2
61-65	sky				1s	binby 4
66	COMP				6s	
67-71	sky				2s	} binby 2
72	COMP				12s	
73	H244	13:21	+36:23	#56	2m	
74	COMP			↑		
75-77	SN1998bu	10:46	+11:50	#2	5m	} binby 2
78	COMP			↑	12s	
79	H244	13:21	+36:23	#56	3m	
80	COMP			↑	12s	
81	SN1998cn	11:35	+70:32	#2	15m	} bright galaxy to E (NGC 373) - hopefully the SN is W!
82	COMP			↑	12s	
83	N4051	12:00	+44:48	#6	2m	binby 4
84	COMP			↑	6s	
85	Z 010049	13:24	+30:57	#75	4m	139
86	COMP			↑		
87	N 002961	13:24	+26:44	#75	4m	140
88	COMP			↑		
89	Z 007401	13:25	+31:37	#75	4m	141
90	COMP			↑		
91	A 000475	13:26	+26:28	#75	5m	142
92	COMP			↑		
93	Z 007402	13:26	+26:35	#75	6m	} 2 different objects! - gal (reduce them separately)
94	COMP			↑		

had to extract Z 007402 E without tracing. Z 007402 W has strong emission → could have appeared in Z 007402 E. need binby 2 for this one.

60 inch Telescope Log

Observer: B. Carter

PI: Carter

Spectrograph: FAST

Grating: 300 Å, 3" slit, kinby Page: 6341

Date: 6/18/98

clear

Number	Object	R.A.	Dec.	L/R	Exp	Comments
95	Z 003485	13:26	+32:11	#75	7m	big fuzzy gal. 144
96	COMP			↑		
97	Z 013768	13:27	+30:58	#75	6m	145
98	COMP			↑		
99	Z 002684	13:27	+32:01	#75	4m	finding chart shows barred gal: 146
100	COMP			↑		↑ airmass 1.08
101	Z 008595	13:27	+28:30	#75	3½ m	147
102	COMP			↑		
103	N 002271	13:27	+30:22	#75	4½ m	148
104	COMP			↑		
105	Z 002346	13:28	+32:01	#75	4m	big dust lane! (and it shows up in the profile too) 149
106	COMP			↑		
107	B 000229	13:28	+30:48	#75	9m	faint object, nothing to guide on. 150
108	COMP			↑		
109	N 002962	13:29	+29:46	#75	4m	151
110	COMP			↑		
111	Z 003486	13:29	+31:07	#75	3½ m	152
112	COMP			↑		
113	Z 002076	13:30	+31:37	#75	3m	153
114	COMP			↑		
115	Z 007403	13:30	+30:01	#75	7m	154
116	COMP			↑		
117	B 000179	13:32	+28:23	#75	4m	155
118	COMP			↑		
119	N 002963	13:34	+31:25	#75	10m	really faint! 500? stronger than Hα 156
120	COMP			↑		
121	Z 007404	13:34	+31:23	#75	5m	star to E 157
122	COMP			↑		
123	Z 013769	13:35	+26:25	#75	4m	158
124	COMP			↑		

60 inch Telescope Log

Observer: B. Carter

PI: Carter

Spectrograph: FAST

Grating: 300A, 3" slit, binby 4 Page: 6342

Date: 6/18/98


clear

Number	Object	R.A.	Dec.	L/R	Exp	Comments
125	Z 013770	13:35	+27:54	#75	4m	star to E 159
126	COMP			↑		
127	N 001361	13:36	+27:14	#75	3 1/2 m	160
128	COMP			↑		
129	Z 004011	13:37	+27:25	#75	4m	161
130	COMP			↑		
131	Z 013771	13:38	+27:46	#75	4m	162
132	COMP			↑		
133	N 000875	13:38	+26:44	#75	3m	163
134	COMP			↑		
135	N 001084	13:38	+31:16	#75	3m	164
136	COMP			↑		
137	Z 006266	13:38	+31:21	#75	2 1/2 m	165
138	COMP			↑		
139	Z 008596	13:39	+30:59	#75	2 1/2 m	166
140	COMP			↑		
141	Z 010050	13:39	+31:12	#75	5m	167
142	COMP			↑		
143	Z 013772	13:39	+31:17	#75	3m	168
144	COMP			↑		
145	Z 010051	13:39	+27:55	#75	4m	169
146	COMP			↑		
147	Z 001657	13:39	+28:24	#75	4m	171
148	COMP			↑		
149	Z 011711	13:39	+30:06	#75	4m	172
150	COMP			↑		
151	Z 010052	13:41	+30:22	#75	4m	Seyfert? 173
152	COMP			↑		
153	Z 011712	13:41	+30:07	#75	3 1/2 m	174
154	COMP			↑		

60 inch Telescope Log				Spectrograph: <u>FAST</u>		
Observer: <u>B. Carter</u>				Grating: <u>300 Å, 3" slit, binby4</u> Page: <u>6343</u>		
PI: <u>Carter, Wilkes, Kenyon</u>				Date: <u>6/18/98</u> <u>clear</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
155	Z006267	13:41	+27:00	#75	4m	175
156	COMP			↑		
157	Z010053	13:41	+26:32	#75	6m	faint star to E? 176
158	COMP			↑		
159	Z013773	13:42	+30:14	#75	4m	177
160	COMP			↑		
161	Z011714	13:42	+26:29	#75	5m	178
162	COMP			↑		
163	Z011715	13:42	+31:31	#75	4m	179
164	COMP			↑		
165	Z011716	13:42	+29:57	#75	5m	180
166	COMP			↑		
167	Z007406	13:42	+29:52	#75	3m	181
168	COMP			↑		
169	Z003013	13:43	+30:20	#75	4m	182
170	COMP			↑		
171	N000876	13:43	+30:04	#75	4m	183
172	COMP			↑		
173	Z013774	13:44	+30:19	#75	5m	184
174	COMP			↑		
175	MRK279	13:51	+69:33	#6	3m	
176	COMP			↑		
177	N5548	14:15	+25:22	#6	3m	
178	COMP			↑		
179,180	AGDra	16:01	+66:48	#12	15, 20s	
181	COMP			↑		
182	Z011745	16:06	+27:51	#75	5m	374
183	COMP			↑		
184	Z010076	16:06	+31:53	#75	4m	376
185	COMP			↑		

60 inch Telescope Log		Spectrograph: <u>FAST</u>				
Observer: <u>B. Carter</u>		Grating: <u>300 Å, 3" slit, binby4</u> Page: <u>6344</u>				
PI: <u>Carter</u>		Date: <u>6/18/98</u> <u>clear</u>				
Number	Object	R.A.	Dec.	L/R	Exp	Comments
186	N 002277	16:07	+30:31	#75	3½m	372
187	COMP			↑		
188	N 000503	16:07	+28:03	#75	4m	376
189	COMP			↑		
190	N 002278	16:09	+30:27	#75	4m	379
191	COMP			↑		
192	Z 010077	16:10	+31:47	#75	6m	underexposed 380
193	COMP			↑		
194	N 000700	16:11	+26:55	#75	3½m	381
195	COMP			↑		
196	N 002982	16:12	+28:28	#75	7m	382
197	COMP			↑		
198	N 001364W	16:12	+28:17	#75	5m	underexposed. at least it has emission! 383
199	N 001364E	"	"	"	10m	target is E, in this fr
200	COMP			↑		
201	N 000883	16:12	+27:59	#75	4m	I'll bet these guys are an interacting pair! 384
202	COMP			↑		
203	Z 013806	16:13	+30:49	#75	4m	385
204	COMP			↑		
205	Z 011747	16:14	+28:29	#75	4m	386
206	COMP			↑		
207	N 002983	16:14	+29:58	#75	8m	387
208	COMP			↑		
209	Z 010079	16:14	+26:33	#75	5m	faint star to W? 388
210	COMP			↑		
211	N 002984	16:15	+31:04	#75	10m	faint spiral (slightly underexposed) 389
212	COMP			↑		
213, 214	HD 192281	20:12	+40:16	#56	2s	
215	COMP			↑		
216	Cyg OB2 no 9	20:31	+41:04	#56	20s	← rt shell went into infinite loop; had to restart it, then do this comp.
217	COMP			↑		

60 inch Telescope Log				Spectrograph: <u>FAST</u>		
Observer: <u>B. Carter</u>				Grating: <u>300 Å, binby 4, 3" slit</u> Page: <u>6345</u>		
PI: <u>McClintock, Kenyon, Wilkes</u>				Date: <u>6/18/98</u> <small>except as noted</small>		
Number	Object	R. A.	Dec.	L/R	Exp	Comments
218	COMP			↓	8s	1.1" slit
219, 220	4U1907p09	19:07	+09:44	#77	15m	} (star to far E)
221	COMP			↑	8s	
222	HD230579	19:01	+11:01	#77	15s	
223	COMP			↑	8s	↓
224, 225	BDp 284211	21:48	+28:37	#56	20s	3" slit
226	COMP			↑		
227, 228	CICyg	19:50	+35:41	#12	1s, 30s	
229	COMP			↑		
230	MRK509	20:41	-10:54	#6	3m	sky getting bright
231	COMP			↑		
232	N7331	22:34	+34:09	#57	5m	
233	COMP			↑		
234	N7469	22:03	+08:52	#6	2½ m	
235	COMP			↑		
236, 237	ε And	23:33	+48:49	#12	1s, 30s	
238	COMP			↑		
239-243	sky	zenith			10s	
244	COMP			↑		
245-249	sky				10s	} binby 2
250	COMP			↑	12s	
251-260	BIAS				0	
261-270	FLAT				6s	
271-280	BIAS				0	} binby 2
281-290	FLAT				12s	
291-300	FLAT	binby 2			20s	1.1" slit, binby 4

60 inch Telescope Log		Spectrograph: <u>FAST</u>		PA 90°		
Observer: <u>B. Carter</u>		Grating: <u>300 Å, 3" slit, binby 4</u>		Page: <u>6246</u>		
PI: <u>Kirshner, Wilkes, Carter</u>		Date: <u>6/19/98</u>		clear		
Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0	
11-20	FLAT				6s	
21-30	BIAS				0	
31-40	FLAT				12s	} binby 2
41-45	DARK				15m	
46-50	DARK				15m	
51-55	sky	zenith			1s	
56	COMP			↑	6s	
57-61	sky				3s	} binby 2
62	COMP			↑	12s	
63,64	H244	13:23	+36:08	#56	2m	
65	COMP			↑	6s	
66	H244	"	"	#56	3m	} binby 2
67	COMP			↑	12s	
68-70	SN 1998bu	10:46	+11:50	#2	5m	
71	COMP			↑	12s	
72,73	SN 1998S	11:46	+47:28	#2	10m	some galaxy to W. → 
74	COMP			↑	12s	
75	N4151	12:08	+39:41	#6	30s	
76	COMP			↑	6s	
77	N4258	12:16	+47:34	#6	2m	
78	COMP			↑		
79	Z013776	13:45	+26:46	#75	10m	185
80	COMP			↑		
81	Z004619	13:47	+30:20	#75	5m	186
82	COMP			↑		
83	Z013777	13:48	+31:27	#75	5m	187
84	COMP			↑		
85	B000 128N	13:48	+28:14	#75	10m	is it one galaxy up, two or two? ¹⁸⁸ / ₁₈₈
86	B000 128 S	"	"	"	10m	← star to far W.
87	COMP			↑		

60 inch Telescope Log

Observer: B. Carter

PI: Carter

Spectrograph: FAST

Grating: 300L, 3" slit, binlog4 Page: 6347

Date: 6/19/98

clear, windy

Number	Object	R.A.	Dec.	L/R	Exp	Comments
88	Z 013778	13:48	+26:35	#75	5m	189
89	COMP			↑		
90	Z 005414	13:50	+28:08	#75	5m	190
91	COMP			↑		
92	Z 011718	13:53	+31:48	#75	4½m	191
93	COMP			↑		
94	Z 008597	13:54	+30:50	#75	4½m	192
95	COMP			↑		
96	N 002273	13:54	+30:51	#75	6m	193
97	COMP			↑		
98	Z 013780	13:55	+31:16	#75	7m	194
99	COMP			↑		
100	A 000750	13:56	+28:32	#75	4m	195
101	COMP			↑		
102	A 000946	13:56	+28:30	#75	4m	196
103	COMP			↑		
104	N 002965	14:00	+27:46	#75	6m	200
105	COMP			↑		
106	Z 005415	14:00	+31:53	#75	9m	Err 201
107	COMP			↑		
108	Z 007407	14:00	+30:04	#75	4½m	Sa 202
109	COMP			↑		
110	Z 013782	14:01	+28:17	#75	4½m	E 203
111	COMP			↑		
112	N 002966	14:01	+28:33	#75	4½m	204
113	COMP			↑		
114	Z 004012	14:03	+28:02	#75	3m	 205
115	COMP			↑		
116	B 000129	14:04	+27:54	#75	10m	206
117	COMP			↑		

60 inch Telescope Log

Observer: B. Carter

PI: Carter, Wilkes

Spectrograph: FAST

Grating: 300 Å, 3" slit, bin by 4 Page: 6348

Date: 6/19/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
118	Z 011720	14:04	+28:35	# 75	4 1/2 m	207
119	COMP			↑		
120	Z 013783	14:04	+30:44	# 75	5m	208
121	COMP			↑		
122	Z 011721	14:04	+31:03	# 75	6m	209
123	COMP			↑		
124	Z 013784	14:05	+30:46	# 75	5m	210
125	COMP			↑		
126	Z 008598	14:07	+29:52	# 75	5m	211
127	COMP			↑		
128	Z 013785	14:10	+26:48	# 75	4 1/2 m	212
129	COMP			↑		
130	Z 011722	14:11	+31:55	# 75	8m	star to W 213
131	COMP			↑		
132	Z 004013	14:13	+27:00	# 75	7m	216
133	COMP			↑		
134	MRK 279	13:52	+69:21	# 6	3m	7
135	COMP			↑		
136	N 5548	14:15	+25:22	# 6	3m	9
137	COMP			↑		
138	Z 013787	14:13	+31:33	# 75	7m	217
139	COMP			↑		
140	N 002968	14:14	+30:36	# 75	8m	218
141	COMP			↑		
142	N 002274	14:16	+32:07	# 75	5m	219
143	COMP			↑		
144	Z 013788	14:16	+26:28	# 75	5m	underexposed 220
145	COMP			↑		
146	Z 011727	14:26	+26:51	# 75	9m	223
147	COMP			↑		

60 inch Telescope Log

Observer: B. Carter

PI: Carter, Geller, Kenyon

Spectrograph: FAST

Grating: 300R, 3" slit, binby 4 Page: 6349

Date: 6/19/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
148	N 002970	14:29	+30:04	#75	12m	Faint! 246
149	COMP			↑		
150	N 000281	14:29	+30:01	#75	3m	247
151	COMP			↑		
152	Z 004015	14:29	+30:49	#75	3m	248
153	COMP			↑		
154	Z 014162-15.50	15:32	+44:32	#64	4m	special request
155	COMP			↑		
156	Z 014162-A	15:32	+44:32	#64	4½m	
157	COMP			↑		
158, 159	AG Dra	16:01	+66:48	#12	25,20s	
160	COMP			↑		
161	Z 007412	15:05	+28:19	#75	4m	301
162	COMP			↑		
163	Z 010065	15:05	+31:09	#75	10m	302
164	COMP			↑		
165	N 002974	15:08	+27:58	#75	5m	303
166	COMP			↑		
167	Z 013798	15:08	+30:10	#75	6m	Irr 304
168	COMP			↑		
169	A 000230	15:09	+26:30	#75	3½m	airmass 1.95 305
170	COMP			↑		
171	Z 004624	15:10	+31:53	#75	3½m	airmass 1.87 306
172	COMP			↑		
173	Z 005423	16:15	+26:37	#75	4m	390
174	COMP			↑		
175	N 002279	16:15	+28:09	#75	8m	airmass 1.49 391
176	COMP			↑		
177	Z 002688	16:15	+31:57	#75	5m	392
178	COMP			↑		

60 inch Telescope Log

Observer: B. Carter

PI: Carter, Huchra, Kenyon

Spectrograph: FAST

Grating: 300, 3", binby 4

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Date: 6/19/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
179	Z 008613	16:15	+31:24	#75	8m	393
180	COMP			↑		
181	N. 001070	16:16	+27:14	#75	5m	394
182	COMP			↑		
183, 184	HD 192281	20:10	+40:07	#56	2s	27
185	COMP			↑		
186	Cyg OB2 no 9	20:31	+41:04	#56	20s	28
187	COMP			↑		
188	Z 007419	16:17	+31:11	#75	5m	395
189	COMP			↑		
190	Z 010080	16:19	+31:16	#75	5m	396
191	COMP			↑		
192	A 000953	16:21	+32:20	#75	6m	barred gal, bar along slit 397
193	COMP			↑		
194	Z 005424	16:21	+28:38	#75	10m	398
195	COMP			↑		
196	Z 013624	16:23	+26:32	#75	9m	399
197	COMP			↑		
198	Z 011748	16:24	+30:09	#75	7m	400
199	COMP			↑		
200	2M174550.7p.	17:45	+21:28	#68	15m	faint! star to W 30
201	COMP			↑		
202	2M171005.7p.	17:50	+21:48	#68	15m	31
203	COMP			↑		
204, 205	BDp 284211	21:48	+28:37	#56	20s	
206	COMP			↑		
207, 208	CICyg	19:50	+35:41	#12	1s, 30s	
209	COMP			↑		
210	N7331	22:34	+34:09	#57	4m	
211	COMP			↑		

60 inch Telescope Log

Observer: B. Carter

PI: Wilkes, Kenyon

Spectrograph: FAST

Grating: 300 Å, 3", binby 4

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Date: 6/19/98

clear, calm

Number	Object	R.A.	Dec.	L/R	Exp	Comments
212	N7469	23:03	+08:52	#6	2 1/2 m	star to E
213	COMP			↑		
214, 215	Z And	23:33	+48:49	#12	6, 20s	
216	COMP			↑		
217, 218	AX Per	1:36	+54:15	#12	4s, 20s	
219	COMP			↑		
220-229	BIAS	(zenith)			0	} incorrect program #
230-239	FLAT				6s	
240-249	BIAS				0	
250-259	FLAT				12s	

60 inch Telescope Log		Spectrograph: <u>FAST</u>				
Observer: <u>CALKINS</u>		Grating: <u>3006</u>			Page: <u>6352</u>	
PI: <u>KIRSNER, MAHADE</u>		Date: <u>6/20/98</u> 98(6e)				
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0s	Binby 4
11-20	FLAT				0s	↓
21-30	BIAS				0s	Binby 2
31-40	FLAT				17s	↓
41-45	sky			#57	60s	Binby 4
46	comp			↑		↓
47-48	HZ 44	13 26	36 08	#56	2m	Binby 4
49	comp			↑		↓
50-51	HZ 44	13 23	36 08	#56	2m	Binby 2
52	comp			↑		↓
53-55	sn1998bu	10 46	11 50	#2	5m	↓
56	comp			↑		
57	sn1998og	11 56	55 07	#2	15m	galaxy to east
58	comp			↑		
59	sn1997eg	13 11	22 55	#2	20m	star to east
60	comp			↑		
61	N4051	12 03	44 31	#6	30s	Binby 4
62	comp			↑		↓
63	MRK 279	13 53	69 18	#6	3m	
64	comp			↑		
65	SBS1425p02	14 26	60 25	#6	10m	
66	comp			↑		
67	M5548	14 17	25 07	#6	3m	
68	comp			↑		
69	Feige 98	14 38	27 29	#56	2m	
70	comp			↑		
71	ngc385.032	16 17	34 57	#59	15m	
72	comp			↑		
73	ngc385.034	16 17	35 07	#59	5m	
74	comp			↑		

used 1.1" flats from 6/22/98

60 inch Telescope Log		Spectrograph: <u>Fast</u>				
Observer: <u>CALYENS</u>		Grating: <u>3006</u>			Page: <u>6353</u>	
PI: <u>MANDAVI,</u>		Date: <u>6/20/64 98(ke)</u>				
Number	Object	R.A.	Dec.	L/R	Exp	Comments
75	nrgs 385.035	16 17	34 49	#59	5m	
76	comp			↑		
77	nrgs 385.039	16 17	35 08	#59	4m	
78	comp			↑		
79	nrgs 385.040	16 17	35 03	#59	4m	star to the west
80	comp			↑		
81	nrgs 385.041	16 17	35 00	#59	5m	
82	comp			↑		
83	nrgs 385.043	16 17	35 05	#59	4m	
84	comp			↑		
85	nrgs 385.044	16 17	35 10	#59	5m	
86	comp			↑		
87	nrgs 385.045	16 17	34 49	#59	5m	
88	comp			↑		
89	nrgs 385.046	16 17	35 09	#59	20m	
90	comp			↑		
91	nrgs 385.047	16 17	35 14	#59	4m	star to the east
92	comp			↑		
93	nrgs 385.048	16 17	35 38	#59	15m	
94	comp			↑		
95	nrgs 385.049	16 17	35 06	#59	5m	
96	comp			↑		
97	nrgs 385.050	16 18	35 16	#59	5m	
98	comp			↑		
99	nrgs 385.051	16 18	34 06	#59	15m	
100	comp			↑		
101	nrgs 385.052	16 18	34 04	#59	20m	
102	comp			↑		
103	nrgs 385.053	16 18	35 10	#59	5m	star to the east
104	comp			↑		

60 inch Telescope Log

Observer: Calkins

PI: Mahdavi, McClintock, Huchra

Spectrograph: Fast

Grating: 3006

Date: 6/20/94 98(bee)

Page: 6354

Number	Object	R.A.	Dec.	L/R	Exp	Comments
105	ngc385.054	16 18	35 19	#59	4m	
106	comp			↑		
107	ngc385.055	16 18	35 29	#59	6m	
108	comp			↑		
109	ngc385.056	16 18	34 50	#59	10m	
110	comp			↑		
111	ngc385.057	16 18	35 09	#59	5m	
112	comp			↑		
113	ngc385.058	16 19	34 43	#59	10m	
114	comp			↑		
115	ngc385.059	16 19	35 02	#59	10m	
116	comp			↑		
117	ngc385.060	16 19	34 21	#59	15m	star to west
118	comp			↑		
119	30390.3	18 42	79 45	#6	10m	
120	comp			↑		
121	comp			↓	8s	1.1" slit
122-123	441907p09	19 09	9.49	#77	15m	↓
124	comp			↑		
125	HD230579	19 04	11 06	#77	20s	↓
126	comp			↑		
127	N7469	23 03	8 52	#6	2.5m	3" slit/star to east
128	comp			↑		
129	NEP1350	17 18	67 54	#68	1m	star to east & west
130	comp			↑		
131	NEP 2810	17 47	68 13	#68	2m	
132	comp			↑		
133	NEP3161	17 51	64 15	#68	1m	
134	comp			↑		
135	NEP 5092	18 19	67 48	#68	30s	

60 inch Telescope Log

Observer: Callins

PI: Huchra

Spectrograph: FAST

Grating: 300L

Date: 6/20/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
136	comp			↑		
137	NEP 5280	18 21	65 59	#68	30s	
138	comp			↑		
139	NEP 5260	18 28	63 22	#68	30s	
140	comp			↑		
141	NEP 5711	18 29	67 51	#68	1m	
142	comp			↑		
143	NEP 3040	17 49	66 11	#68	30s	
144	comp			↑		
145	NEP 30	17 52	67 38	#68	30s	
146	comp			↑		
147	NEP 470	18 00	66 00	#68	45s	
148	comp			↑		
149	NEP 4121	18 04	65 28	#68	45s	
150	comp			↑		
151	NEP 4350	18 08	67 36	#68	30s	
152	comp			↑		
153	NEP 4420	18 09	68 01	#68	60s	
154	comp			↑		
155	2M174531.8p2141	17 45	21 44	#68	20m	star to far west
156	comp			↑		(probably should have passed on this one)
157	2M174548.6p	17 45	23 03	#68	19m	
158	comp			↑		
159	Feigello	23 19	-5 09	#56	2m	
160	comp			↑		
161	Wolf 1346	22 04	19 14	#56	1m	
162	comp			↑		
163-172	BIAS				0s	Binby 4
173-182	FLAT				6s	↑
183-192	BIAS				0s	Binby 2

193-202 FLAT
203-212 DARK

60 inch Telescope Log		Spectrograph: <u>Fast</u>				Page: <u>6357</u>
Observer: <u>Calkins</u>		Grating: <u>300L</u>				
PI: <u>Kirschner, Koranyi,</u>		Date: <u>6/21/98</u>				
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				5s	Binby 2
41-50	Flat				12s	↓
51-55	sky				2s	Binby 4
56	comp			↑		↓
57-58	H244	13 23	36 08	#56	2m	
59	comp			↑		↓
60-61	H244	13 23	36 08	#56	2m	Binby 2
62	comp			↑		↓
63-65	sn1998bu	10 46	11 50	#2	5	
66	comp			↑		↓
67-68	sn1998s	11 46	47 29	#2	10	
69	comp			↑		↓
70	N4151	12 08	39 24	#6	30s	Binby 4
71	comp			↑		↓
72	N4258	12 19	47 18	#6	2m	
73	comp			↑		
74	MRK279	13 53	69 18	#6	3m	
75	comp			↑		
76	N5548	14 17	25 08	#6	3m	
77	comp			↑		
78	Feige 98	14 38	27 29	#56	2m	
79	comp			↑		
80	mkw5-023	12 58	-2 47	#35	20m	star to the west
81	comp			↑		
82	mkw5-024	13 59	-2 51	#35	20m	comie on top of the star to the east
83	comp			↑		
84	mkw5-025	13 58	-3 00	#35	17m	

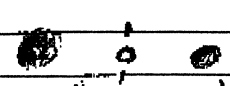
82- forced to fabtemp (comie on top of the)

60 inch Telescope Log			Spectrograph: <u>Fast</u>			Comments
Observer: <u>Calkins</u>			Grating: <u>300L</u>		Page: <u>6358</u>	
PI: <u>Koranyi, Rines, Kenyon</u>			Date: <u>6/21/98</u>			
Number	Object	R.A.	Dec.	L/R	Exp	
85	comp			↑		
86	mkw5-026	14 01	-3 03	#35	17m	
87	comp			↑		
88	mkw5-027	14 02	-3 04	#35	17m	
89	comp			↑		
90	E149985	16 36	40 42	#64	10m	
91	comp			↑		
92	E35163	16 27	37 49	#64	8m	star to the east
93	comp			↑		
94	E357261	16 18	40 19	#64	10m	
95	comp			↑		
96	E358161	16 21	40 18	#64	7m	
97	comp			↑		
98	E358329	16 21	40 20	#64	15m	
99	comp			↑		
100	E358792	16 22	40 24	#64	12m	
101	comp			↑		
102	E361219	16 28	40 29	#64	5m	
103	comp			↑		
104	E361243	16 28	40 24	#64	5m	
105	comp			↑		
106	E361541	16 28	40 29	#64	5m	
107	comp			↑		
108	E361663	16 28	40 20	#64	7m	
109	comp			↑		
110	HBC256	16 21	-26 12	#74	2m	
111	comp			↑		
112	HBC257	16 25	-23 18	#74	90c	
113	comp			↑		
114	HBC258	16 25	-24 29	#74	3m	

60 inch Telescope log
 Observer: Calkins
 PI: Kenyon
 Spectrograph: FAST
 Grating: 3006
 Date: 6/21/98
 Page: 6859

Number	Object	R.A.	Dec.	L/R	Exp	Comments
115	comp			↑		
116	HBC 259	16 25	-24 20	#74	90s	
117	comp			↑		
118	HBC 260	16 26	-23 43	#74	90s	
119	comp			↑		
120	HBC 261	16 26	-23 14	#74	90s	
121	comp			↑		
122	HBC 262S	16 26	-24 46	#74	4m	South star -●-
123	comp			↑		
124	HBC 262N	16 26	-24 46	#74	4m	North star -●-
125	comp	16 27 14	-24 44	↑		
126	HBC 263	16 26	-24 41	#74	90s	
127	comp			↑		
128	HBC 264	16 27	-24 22	#74	30s	
129	comp			↑		
130	HBC 265	16 27	-24 26	#74	2.5m	
131	comp			↑		
132	HBC 266	16 28	-24 28	#74	90s	
133	comp			↑		
134	HBC 267	16 31	-24 04	#74	2m	star to west
135	comp			↑		
136	HBC 268	16 31	-24 28	#74	90s	
137	comp			↑		
138	HBC 270	16 49	-14 21	#74	20s	
139	comp			↑		
140	HBC 272	17 09	-27 17	#74	30s	
141	comp			↑		
142	HBC 273	17 10	-27 15	#74	2m	
143	comp			↑		
144	HBC 274	17 10	-27 40	#74	2m	

use 123 as comp for 124

60 inch Telescope Log				Spectrograph: <u>FAST</u>		
Observer: <u>Calkins</u>				Grating: <u>3006</u>		Page: <u>6360</u>
PI: <u>Kenyon, Bines, All, Archer</u>				Date: <u>6/21/98</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
145	comp			↑		
146	HBC257SE	17 11	-27 23	#74	3m	
147	comp			↑		
148	HBC257NW	17 11	-27 22	#74	4m	
149	comp	17 12 00	-27 20 18	↑		
150	HBC276	17 12	-27 20	#74	2.5m	star to the east
151	comp			↑		
152	HBC 635	16 25	-23 55	#74	3m	
153	comp			↑		
154	E361744	16 28	+40 29	#64	15m	
155	comp			↑		
156	MRK509	20 44	-10 54	#6	3m	
157	comp			↑		
158	2M180258.1p2	18 02	23 29	#68	20m	
159	comp			↑		(middle star in slit)
160	2M170005.8p22	17 00	22 48	#68	10m	
161	comp			↑		
162	2M165210.4p	16 32	22 24	#68	6m	
163	comp			↑		
164	2M170009.2p22	17 00	22 54	#68	20m	
165	comp			↑		
166	N7469	23 03	8 52	#6	2.5m	star in slit to east
167	comp			↑		
168	N7331	22 36	34 24	#57	4m	
169	comp			↑		
170-171	B50p404032	20 08	41 15	#56	1m	
172	comp			↑		
173-192	BIAS				0s	Binby 4
183-192	Flat				6s	↓
193-202	BIAS				0s	BINBY 2
203-212	Flat				12s	↓
213-222	Darks				15m	↓

used 147 as comp for 148

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>6361</u>
Observer: <u>CALKINS</u>				Grating: <u>500L</u>		
PI: <u>Kirshner, All, Rines, Corary;</u>				Date: <u>6/22/98</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARKS				15m	Binby 4
11-20	BIAS				0s	↓
21-30	FLAT				6s	
31-40	FLAT (1.1")				20s	1.1" slit
41-50	BIAS				0s	Binby 2, 3" slit
51-60	FLAT				12s	↓
61-65	sky				2s	Binby 4
66	comp			↑		
67-68	Feige 98	14 38	27 29	#56	2m	↓
69	comp			↑		
70	NG379	10 47	12 35	#57	1m	
71	comp			↑		
72-73	H244	13 23	36 08	#56	2m	Binby 2
74	comp			↑		↓
75-76	SN1998bu	10 46	11 50	#2	10m	
77	comp			↑		
78	SN5993	15 44	41 07	#2	10m	galaxy to the east
79	comp			↑		(spectra appears stellar)
80	MRK421	11 04	38 12	#6	4m	
81	comp			↑		
82	MRK279	13 53	69 18	#6	3m	object to the east
83	comp			↑		
84	NG548	14 18	25 08	#6	3m	
85	comp			↑		
86	MRK501	16 06	39 45	#6	5m	star to the east
87	comp			↑		
88	E362027	16 29	40 24	#64	10m	
89	comp			↑		(oops! - I'll try to
90	mkw5-028	13 59	-3 00	#55	20m	get these objects while
91	comp			↑		they're still up!)

60 inch Telescope Log

Observer: CALKINS



PI: Koranyi, Rines, Kenyon

Spectrograph: FAST

Grating: 300L

Page: 6362

Date: 6/22/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
92	mkw5-029NE	13 59	-3 19	#35	15m	
93	comp			↑		
94	mkw5-029SW	13 59	-3 19	#35	16m	
95	comp			↑		
96	E362801	16 31	40 25	#64	10m	
97	comp			↑		
98	E362804	16 31	40 29	#64	4m	
99	comp			↑		
100	E363721	16 32	40 20	#64	5m	
101	comp			↑		
102	E365560	16 36	40 25	#64	10m	
103	comp			↑		
104	E365999	16 37	40 30	#64	10m	
105	comp			↑		
106	E36600	16 34	37 49	#64	20m	
107	comp			↑		
108	E373343	16 20	40 09	#64	5m	
109	comp			↑		
110	E374096	16 21	40 12	#64	5m	
111	comp			↑		
112	E374294	16 22	40 07	#64	7m	star to the east
113	comp			↑		
114-115	H244	13 23	36 07	#56	2m	1.97 airmass (for Barbara Carter)
116	comp			↑		
117	HBC636	16 25	-24 51	#74	1m	
118	comp			↑		
119	HBC637	16 25	-24 22	#74	30s	
120	comp			↑		
121-122	AG Dra	16 01	66 48	#12	25, 29	
123	comp			↑		

both stars

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>6/63</u>	
Observer: <u>Calkins</u>			Grating: <u>300L</u>		Date: <u>6/22/98</u>	
PI: <u>Kempton</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
124-125	CICyg	19 50	35 41	#12	15,30s	
126	comp			↑		
127	HBC 638	16 26	-24 20	#74	2m	• - • -
128	comp			↑		
129	HBC 639	16 26	-24 20	#74	2m	- • - •
130	comp			↑		
131	HBC 640	16 27	-24 50	#74	4m	• • • -
132	comp			↑		
133	HBC 641	16 27	-24 51	#74	2m	- • -
134	comp			↑		
135	HBC 642	16 27	-24 40	#74	4m	
136	comp			↑		
137	HBC 643	16 28	-21 22	#74	90s	
138	comp			↑		
139	HBC 644NW	16 31	-24 04	#74	30s	
140	comp			↑		
141	HBC 644SE	16 31	-24 04	#74	1m	
142	comp			↑		
143	HBC 647	16 32	-24 40	#74	1m	
144	comp			↑		
145	HBC 648	16 32	-24 42	#74	3m	
146	comp			↑		
147	HBC 649	16 34	-15 46	#74	90s	
148	comp			↑		
149	HBC 650	16 34	-15 47	#74	3m	
150	comp			↑		
151	HBC 651	16 46	-15 14	#74	90s	
152	comp			↑		
153	HBC 652	16 48	-14 11	#74	90s	
154	comp			↑		

161 ~~161~~ E ~~161~~ ^N another object on NW edge of Gal

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>6364</u>
Observer: <u>CALKINS</u>				Grating: <u>300L</u>		
PI: <u>McClintock, Mahdavi, Kirshner, Huchra</u>				Date: <u>6/22/98</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
155	comp			↓		1.1" slit
156-157	4U1907p09	19 09	09 49	#77	15m	↓
158	comp			↑		
159	HD230579	19 04	11 06	#77	20s	↓
160	comp			↑		
161	ngc385.062	16 19	34 22	#59	15m	3" slit ¹ ₂ ^{another spot} _{NW side of star}
162	comp			↑		↓
163	ngc385.063	16 19	35 34	#59	8m	
164	comp			↑		
165	ngc385.064	16 19	34 19	#59	7m	
166	comp			↑		
167	snr7131	21 47	-13 11	#2	15m	Binby 2
168	comp			↑		(Type Ia!)
169-170	?And	23 33	48 49	#12	1s, 20s	Binby 4
171	comp			↑		↓
172	M7469	23 03	8 52	#6	2.5m	star to the east
173	comp			↑		
174	HD217086	22 56	62 43	#56	4s	Binby 4
175	comp			↑		
176	HD217086	22 56	62 43	#56	4s	Binby 2
177	comp			↑		
178	2M1721X.8p234	17 21	23 42	#68	12m	Binby 4
179	comp			↑		
180	2M165917.5p18	16 59	18 21	#68	12m	
181	comp			↑		
182	BDp284211	21 51	28 51	#56	30s	
183	comp			↑		
184-193	BIAS				0s	Binby 4
194-203	FLAT				6s	
204-213	FIAT				20s	1.1" slit

214-223 BIAS
 224-233 FLAT
 234-243 DARK

0s Binby 2, 3" slit
 12s
 15m
 ↓

60 inch Telescope Log

Observer: P. Berlin

PI: Wilkes & Kirshner

Spectrograph: FAST

Grating: 3002

Date: 6/23/98

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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	BIAS				0s	
41-50	FLAT				12s	
51-55	sky			57	2s	hazy + cirrus
56	WMP			↑	5s	
57-58	H244	13:21	+36:23	56	90s	
59	WMP			↑		
60-61	H244	13:21	+36:23	56	90s	bumpy Z
62	WMP			↑		
63	N4051	12:06	+39:41	6	30s	clouds.
64	WMP			↑		
65	N4051	12:00	+44:48	6	2m	
66	WMP			↑		
67	N4758	17:16	+47:34	6	75m	
68	WMP			↑		
69	MK27F	13:51	+69:57	6	35m	
70	WMP			↑		
71	N5548	14:15	+75:22	6	3m	
72	WMP			↑		
73	WMP			↓		
74-75	SN1998bu	10:46	+11:50	2	11m	
76	WMP			↑		
77	SN1998bg	11:56	+55:07	2	15m	
78	WMP			↑		
79	N4853	12:58	+77:35	57	4m	
80	WMP			↑		
81	MKw8 W1	14:40	+05:27	35	3m	
82	WMP			↑		

60 inch Telescope Log

Observer: PB

PI: Dan

Spectrograph: FAST

Grating: 300

Date: 6/23/98

Page: 6366

Number	Object	R.A.	Dec.	L/R	Exp	Comments
83	mKW 8-002	14:40	+03:28	35	5m	
84	COMP			↑		
85	003	14:39	+03:06	35	4m	
86	COMP					
87	004	14:40	+03:22	35	2m	
88	WMP			↑		
89	005	14:42	+03:13	35	2m	
90	WMP			↑		
91	006	14:40	+03:08	35	4m	* to E
92	COMP			↑		
93	007	14:39	+03:22	35	5m	
94	WMP			↑		
95	008	14:39	+03:55	35	3m	
96	WMP			↑		
97	009	14:41	+03:23	35	3m	
98	WMP			↑		
99	010	14:40	+03:25	35	4m	
100	WMP			↑		
101	011	14:40	+03:15	35	4m	
102	WMP			↑		
103	012	14:40	+03:25	35	3m	
104	WMP			↑		
105	013	14:41	+03:35	35	2m	
106	WMP			↑		
107	014	14:40	+03:31	35	6m	em +
108	WMP			↑		
109	015	14:40	+03:22	35	3m	
110	WMP			↑		
111	016	14:40	+03:05	35	2m	
112	WMP			↑		

60 inch Telescope Log
 Observer: PB
 PI: Dan

Spectrograph: FAST
 Grating: 3WR
 Date: 6/23/98

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Number	Object	R. A.	Dec.	L/R	Exp	Comments
113	mkw8_017	14:40	+03:35	3S	3m	
114	WMP			↑		
115	018	14:38	+03:56	3S	6m	
116	WMP			↑		
117	019	14:40	+03:41	3S	5m	
118	WMP			↑		
119	020	14:42	+03:19	3S	7m	em
120	WMP			↑		
121	021	14:40	+03:39	3S	4m	br by 2; * to W
122	WMP			↑		
123	022	14:40	+03:27	3S	3m	
124	WMP			↑		
125	023	14:40	+03:44	3S	6m	
126	WMP			↑		
127	024	14:42	+03:12	3S	6m	
128	WMP			↑		
129	025	14:39	+03:40	3S	5m	
130	WMP			↑		
131	026	14:39	+03:43	3S	5m	
132	WMP			↑		
133	027	14:40	+03:30	3S	6m	* to E
134	WMP			↑		
135	028	14:39	+03:23	3S	10m	
136	WMP			↑		
137	029	14:41	+03:27	3S	5m	
138	WMP			↑		
139	030	14:40	+03:31	3S	5m	
140	WMP			↑		
141	nrq.5385.065	16:19	+35:09	59	4m	
142	WMP			↑		

60 inch Telescope Log

Observer: PB
 PI: Andi

Spectrograph: FAST
 Grating: 300
 Date: 6/23/98

Page: 6368

Number	Object	R.A.	Dec.	L/R	Exp	Comments
143	nrags 385. 066	16:19	+34:15	S9	8m	em; * to far W
144	COMP			↑		
145	067	16:20	+35:07	S9	10m	
146	COMP			↑		
147	068	16:20	+35:32	S9	6m	
148	COMP			↑		
149	069	16:21	+34:45	S9	4m	
150	COMP			↑		
151	070	16:21	+35:30	S9	10m	
152	COMP			↑		
153	071	16:21	+34:45	S9	3m	
154	COMP			↑		
155	072	16:21	+35:13	S9	6m	em
156	COMP			↑		
157	073	16:21	+35:16	S9	7m	em
158	COMP			↑		
159	nrags 400. 074	16:44	+36:48	S9	6m	
160	COMP			↑		
161	075	16:45	+35:35	S9	7m	* to W
162	COMP			↑		
163	076	16:45	+35:27	S9	6m	
164	COMP			↑		
165	077	16:45	+35:27	S9	2m	
166	COMP			↑		
167	078	16:46	+35:58	S9	8m	
168	COMP			↑		
169	079	16:46	+36:05	S9	3m	
170	COMP			↑		
171	080	16:47	+36:42	S9	3m	
172	COMP			↑		

60 inch Telescope Log

Observer: PB

PI: Andi

Spectrograph: FAST

Grating: 3002

Date: 6/23/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
173	nrqs 410.081	16:48	+38:50	S9	5m	
174	COMP			↑		
175	082	16:48	+35:53	S9	2m	cm
176	COMP			↑		
177	083	16:48	+36:08	S9	6m	
178	COMP			↑		
179	084	16:48	+35:36	S9	5m	brt to S.
180	COMP			↑		
181	085	16:49	+36:11	S9	5m	
182	COMP			↑		
183	086	16:49	+36:13	S9	3m	Sy 2
184	COMP			↑		
185	087	16:49	+36:03	S9	3m	
186	COMP			↑		
187	088	16:49	+36:12	S9	3m	
188	COMP			↑		
189	089	16:49	+35:12	S9	6m	
190	COMP			↑		
191	090	16:50	+35:26	S9	8m	
192	COMP			↑		
193	091	16:50	+35:28	S9	2m	
194	COMP			↑		
195	092	16:51	+35:45	S9	8m	
196	COMP			↑		
197	093	16:52	+36:06	S9	7m	Finishes the notebook
198	COMP			↑		* light to W
199	MRK509	20:41	-10:54	6	3m	
200	COMP			↑		
201	SN1998co	21:44	+13:24	2	15m	
202	COMP			↑		

60 inch Telescope Log

Observer: PB
 PI: Huchra

Spectrograph: FAST
 Grating: 302
 Date: 6/23/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
203	2M184134.9	18:41	+11:53	68	15m	many objects in slit
204	WMP			↑		galaxy @ row 40 has quad em
205	2M184146.8	18:41	+15:18	68	12m	low em $\frac{3}{4}$ low; higher
206	WMP			↑		
207-208	CXUng	19:50	+35:41	12	1.5, 20s	
209	WMP			↑		
210	N7469	23:03	+108:52	6	25m	
211	WMP			↑		Scattered clouds @ dawn
212	MRK 335	01:03	+19:55	6	3m	
213	WMP			↑		
214-215	ZAND	23:33	+18:49	12	1.5, 20s	
216	WMP			↑		
217-218	BDP28211	21:48	-72	56	30s	
219	WMP			↑		
220-229	BIAS			0	0s	
230-239	FLAT			0	6s	
240-249	BIAS				0s	
250-259	FLAT				12s	

60 inch Telescope Log

Observer: P Berlin

PI: Kirshner

Spectrograph: EAST

Grating: 300 1/3" slit

Date: 6/24/98

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Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-5	DARK				15m	
6-15	BIDS				0s	clear + hazy
16-25	FLAT				6s	
26-35	BIDS				0s	bin by 2
36-45	FLAT				12s	bin by 2
46-50	sky			57	2s	
51	COMP			↑	5s	
52-54	H244	13:21	+36:23	56	2m	1.02 8:20
55	COMP			↑		
56	N4151	12:08	+39:41	6	30s	
57	COMP			↑		
58	N5548	14:15	+25:22	6	3m	
59	COMP			↑		
60-61	AG Dra	16:01	+66:48	12	2s, 20s	
62	COMP			↑		
63	MRK 279	13:51	+69:33	6	3m	
64	COMP			↑		
65	COMP			↓		8:45
66-67	SN 1998bu	10:46	+11:50	2	10m	
68	COMP			↑		RT crash
69	SN 1998s	11:46	+47:28	2	15m	
70	COMP			↑		
71	ZM 141048.9	14:10	+44:23	68	4m	
72	COMP			↑		
73	ZM 141304.6	14:13	+20:24	68	2m	
74	COMP			↑		
75	ZM 141700.8	14:17	+17:05	68	3m	
76	COMP			↑		
77	ZM 141819.3	14:14	+12:20	68	7m	
78	COMP			↑		

60 inch Telescope Log

Observer: PB

PI: Huchra

Spectrograph: FAST

Grating: 300L

Date: 6/24/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
79	ZM141739.7	14:17	+12:57	68	5m	
80	WMP			↑		
81	ZM141356.5	14:13	+11:59	68	6m	bright & nearby; uneven scattered light
82				↑		
83	ZM140137.1	14:01	+19:23	68	5m	
84				↑		
87	ZM140329.8	14:03	+17:58	68	5m	<div style="border: 1px solid black; padding: 2px; display: inline-block;">85 = ZM140323.1 5m 86 = comp ↑</div>
88	WMP			↑		visitors
89	ZM140146.1	14:01	+19:48	68	4m	
90	WMP			↑		
91-92	H244	13:21	+76:23	56	2m	sec = 1.2 for Barbara C. Par = 85 PA = 90.0°
93	WMP			↑		
94	ZM141720.7	14:17	+17:35	68	5m	
95	WMP			↑		
96	ZM140311.3	14:03	+22:18	68	5m	
97	WMP			↑		
98	ZM141752.4	14:17	+17:02	68	5m	
99	WMP			↑		
100	ZM141037.0	14:10	+18:56	68	5m	
101	WMP			↑		
102	ZM141328.6	14:13	+17:45	68	5m	
103	WMP			↑		
104	ZM141535.4	14:15	+11:53	68	9m	
105	WMP			↑		
106	ZM1410158.3	14:01	+20:25	68	5m	
107	WMP			↑		
108	ZM141116.0	14:11	+17:43	68	6m	
109	WMP			↑		
110	ZM140152.6	14:01	+22:50	68	5m	
111	WMP			↑		

85 →

60 inch Telescope Log

Observer: PB
 PI: Huchra

Spectrograph: FAST
 Grating: 3002
 Date: 6/24/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
112	ZM141253.3	14:12	+20:06	68	6m	
113	COMP			↑		
114	ZM141529.2	14:15	+14:37	68	7m	
115	COMP			↑		
116	ZM141116.1	14:11	+17:43	68	8m	
117	COMP			↑		
118/119	H244	13:21	+76	56	2m	for Barbara Carter secz=
120	COMP			↑		secz=1.70 PAR=75° PA=90°
121	ZM160533.2	16:05	+18:49	68	20m	redo from 4/26/98 (#199)
122	COMP			↑		
123/124	H244	13:21	+76	56	2m	PA=PA=70°; secz=1.99
125	COMP			↑		
126	ZM160525.5	16:05	+18:10	68	15m	
127	COMP			↑		
128	ZM160537.4	16:05	+15:20	68	15m	
129	COMP			↑		
130	ZM160525.3	16:05	+17:04	68	12m	to to W
131	COMP			↑		
132	ZM165954.4	16:59	+21:01	68	12m	bin by 2 2.5 cm
133	COMP			↑		
134	ZM172135.6	17:21	+18:57	68	7m	
135	COMP			↑		
136	ZM170027.3	17:00	+20:34	68	7m	
137	COMP			↑		
138	ZM172138.5	17:21	+17:49	68	15m	
139	COMP			↑		
140	ZM170005.7	17:00	+20:59	68	8m	
141	COMP			↑		
142	ZM170725.4	17:07	+21:55	68	9m	to to E
143	COMP			↑		

70°

60 inch Telescope Log

Observer: PB

PI: Jeff Mcgly Betsy

Spectrograph: FAST

Grating: 300

Date: 6/24/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
144	COMP			↓		1.1" slit
145-6	4U1907 p09	19:09	+09:49	77	15m	
147	COMP			↑		
148-149	HD230579	19:01	+11:01	77	10-20s	
150	COMP			↑		
151	ZM1814L8	18:41	+15:18	68	20m	redo from 6/23/98 3" slit
152	COMP			↑		
153	Star1	22:08	+45:31	79	10m	
154	COMP			↑		
155	Sagal-214	20:30	-01:60	73	12m	
156	COMP			↑		
157	Sagal-213	20:30	-01:60	73	4m	82
158	COMP			↑		
159	Sagal 221	20:47	+10:25	73	10m	
160	COMP			↑		clear @ dawn
161	NY331	22:34	+34:09	57	30s	~
162	COMP			↑		
163	MRK335	00:05	+19:55	6	3m	
164	COMP			↑		
165	NY469	23:05	+08:52	6	25m	
166	COMP			↑		
167-168	TDp284211	21:48	+28:39	56	30s	
169	COMP			↑		
170-171	CICney	19:50	+35:41	12	20s/1s	
172	COMP			↑		
173-174	Zhd	23:33	+48:49	12	20s/1s	
175	COMP			↑		
176-185	BIAS				0s	
186-195	FLAT				6s	
196-205	BIAS				0s	

206-215 FLAT
 216-225 FLAT
 226-230 DARK

12s
 20s - 1.1" slit
 15min bin by 2

60 inch Telescope Log

Observer: PBerlin/KRines
 PI: All

Spectrograph: FAST
 Grating: 3WL
 Date: 6/25/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
110	DARK				15m	
11-20	BIAS				0s	
21-70	FLAT				6s	
31-40	BIAS				0s	bm by 2
41-50	FLAT				12s	"
51-60	FLAT			62	16s	600 μ ; tilt=532; 2" slit
61	COMP	test		↑	10s	cover vignetting good
62-66	sky			57	2s	not very much
67	COMP			↑		
68-70	HD 110914	12:45	+45:26	79	0.5s	clear skies!
71				↑		(hazy)
72-74	HD 112589	13:56	+65:59	79	2s	
75				↑		
76-78	HD 144578	16:04	+50:29	79	5s	
79	COMP			↑		
80-81	AG Dra	16:01	+66:48	12	2s, 20s	
82	COMP			↑		
83-84	N4151	12:08	+39:41	6	15, 20s	
85	COMP			↑		
86-87	H744	13:21	+26:23	56	2m	
88	COMP			↑		
89	N4258	12:16	+47:34	6	2m	
90	COMP			↑		
91	MRKDF	13:51	+69:33	6	3m	7
92	COMP			↑		
93	N5516	14:15	+25:22	6	3m	9
94	COMP			↑		
95	COMP			↓		
96-97	SN1998bu	10:46	+11:50	2	10m	
98	COMP			↑		

60 inch Telescope Log
 Observer: PB KR
 PI: Sheila/Krishna/Green
 Spectrograph: FAST
 Grating: 3WL
 Date: 6/25/98
 Page: 6376

Number	Object	R.A.	Dec.	L/R	Exp	Comments
99	SN 1998ag	11:56	+55:07	Z	12m	
100	COMP			↑		
101	COMP			↓	10s	600L; tilt=532; 2" slit
102,104	IC 692	11:23	+10:15	6Z	15m	PA = -55
103,105	COMP			↑		
106-107	HD 102224	11:46	+17:46	6Z		PA = 90
108	COMP			↑		
109-110	HZ 44	13:21	+16:23	56	2m	3WL; tilt=610; 3" slit
111	COMP			↑		⊙ normal setup ↓
112,114,116	1326 p 282	13:26	+28:11	79	8m	PA = +70 sc2 = 1.25
113	COMP			↑		check! bad coords chart wrong star
117	SN 1997ag	13:11	+27:55	Z	20m	PA = +70
118	COMP			↑		
119,120,121,123	1633 p 572	16:33	+57:15	79	6m	PA = -15
121,128	COMP			↑		
125,127,129	1727 p 560	17:28	+56:10	79	10m	Faint to W; PA = -15
126,128,130	COMP			↑		
132,134	1829 p 517	18:29	+51:45	79	11m	PA = 70
133,135	COMP			↑		
136-137	HZ 44	13:21	+16:23	56	2m	PA = 70 sc2 = 2.1
138	COMP			↑		
139	BD p 332642	15:50	+33:05	56	1m	PA = 90
140	COMP			↑		
141	2m 160535.0 p 14	16:05	+14:39	68	20m	
142	COMP			↑		
143	2m 160530.2 p 16	16:05	+15:44	68	20m	
144	COMP			↑		
145	2m 160533.4	16:05	+17:41	68	20m	

-15

60 inch Telescope Log
 Observer: PB KR
 PI: Betsy Green
 Spectrograph: FAST
 Grating: 300 l
 Date: 6/25/98
 Page: 6377

Number	Object	R.A.	Dec.	L/R	Exp	Comments
176	COMP			68		
147, 149, 151	2011 p065	20:11	+06:34	79	8m	high proper motion
148, 150, 152	COMP			↑		
153, 155	2059 p316	20:59	+31:57	79	8m	high proper motion
154, 156	COMP			↑		
157, 158	2140 p207	21:40	+20:46	79	5m	high proper motion
159	COMP			↑		
160, 161	Cyg OB2 #9	20:31	+41:04	56	30s	
162	COMP			↑		
163, 164	BDp28124	21:48	+28:37	56	30s	
165	COMP			↑		
166	SN 1998co	21:47	-13:10	2	15m	
167	COMP			↑		
168	sagal-222	20:47	+00:21	73	11m	
169	COMP			↑		
170	sagal-223	20:47	+00:19	73	10m	
171	COMP			↑		
172	sagal-224	20:47	+00:18	73	6m	
173	COMP			↑		
174	sagal-247	22:14	+13:50	73	3m	
175	COMP			↑		
176	N 7469	23:03	+08:52	6	25m	
177	COMP			↑		
178	MRK 335	00:03	+19:55	6	3m	
179	COMP			↑		
180, 181	CICyg	19:50	+35:41	12	1s, 30s	
182	COMP			↑		
183, 185	AGP ₂	21:51	12:57	12	0.5s, 12s	
186	COMP			↑		

60 inch Telescope Log
 Observer: PB 4KR
 PI: Green
 Spectrograph: FAST
 Grating: 3WR
 Date: 6/25/98
 Page: 6378

Number	Object	R.A.	Dec.	L/R	Exp	Comments
187-189	HD194071	rustd		79	2s	
190	COMP			↑		
191-193	HD187691	rustd		79	2s	
194	COMP			↑		
193-197	HD182572	rustd		79	2s	
198	COMP			↑		
199-201	HD177336	19:04	-05:41	79	2s	C+1s
202	COMP			↑		
203-205	HD190606	20:05	+20:38	79	2s	
206	COMP			↑		clear & dark
207-209	HD215484	22:44	+6:43	79	2s	
210	COMP			↑		
211-213	HD224885	00:01	+10:21	79	2s	
214	COMP			↑		
215-221	BIAS			0	0s	
225-234	FLAT			0	6s	
235-244	BIAS			0	6s	
245-254	FLAT			0	12s	
255-258	DARK				15s	bm by 2
259						

60 inch Telescope Log

Observer: K Rines

PI: Kirshner/Wilkes

Spectrograph: FAST

Grating: 3001

Date: 6/26/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	bin by 2
11-20	BIAS				0s	clear + hazy bin by 2
21-30	FLAT				6s	bin by 2
31-40	BIAS				0s	bin by 2
41-50	FLAT				12s	bin by 2
51-55	SKY				2s	7:47 pm
56	COMP					
57, 58	AG Dec	16:01	+66:48	12	2s, 20s	
59	COMP			↑		
60, 61	HZ 84	13:21	+36:23	57	2m	8:20 pm
62	COMP			↑		
63	HZ 44	13:21	+36:23	57	2m	bin by 2 - no star
64	COMP			↑		
65	HZ 44	13:21	+36:23	57	2m	again (bin by 2)
66	MRK 421	11:04	+38:12	6	4m	bin by 4
67	COMP			↑		
68	N4051	12:03	+44:32	6	2m	
69	COMP			↑		
70	N4151	12:06	+39:41	6	30s	
71	COMP			↑		
72	N4258	12:19	+47:18	6	2m	
73	COMP			↑		
74	MRK 279	13:53	+69:18	6	3m	
75	COMP			↑		
76	SBS 1425 p 606	14:27	+60:25	6	10m	9:00
77	COMP			↑		
78	N5548	14:18	+25:08	6	3m	
79	COMP			↑		
80	MRK 501	16:54	+39:46	6	5m	
81	COMP			↑		

60 inch Telescope Log

Observer: K Rines

PI: Kirchner/Koranyi

Spectrograph: F15T

Grating: 3008

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Date: 6/26/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
82	COMP			21		bin by 2
83	SN 1998bw	10:46	+11:50	↑	10m	sect = 2.5, 2.8'
85	COMP			↑		
86	N5866	15:06	+55:46	57	3m	rvstd, bin by 4
87	COMP			↑		
88	mkw7-037	14:32	+03:24	35	15m	nice emission
89	COMP			↑		
90	mkw7-038	14:35	+03:34	35	15m	
91	COMP			↑		
92	mkw7-039	14:34	+03:48	35	10m	bright gal to E
93	COMP			↑		
94	-040	14:34	+03:39	35	20m	
95	COMP			↑		
96	-041	14:32	+03:27	35	20m	
97	COMP			↑		
98	-042	14:35	+03:40	35	20m	bright * nearby (NE)
99	COMP			↑		
100	-044	14:34	+03:47	35	20m	bright gal to W
101	COMP			↑		
102	E375003	16:24	+40:08	64	4m	
103	COMP			↑		
104	E375023	16:24	+40:08	64	5m	
105	COMP			↑		
106	E375050	16:24	+40:07	64	7m	
107	COMP			↑		
108	E375328	16:25	+40:14	64	7m	
109	COMP			↑		
110	E375340	16:26	+40:08	64	5m	
111	COMP			↑		
112	E375804	16:26	+40:06	64	3m	

60 inch Telescope Log
 Observer: K. Ringe
 PI: Ken / Jeff / Kathy
 Spectrograph: FAST
 Grating: 300A
 Date: 6/26/98
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Number	Object	R.A.	Dec.	I/R	Exp	Comments
113	COMP			64		
114	E 376755	16:28	+40:13	64	4m	
115	COMP			↑		
116	E 377090	16:28	+40:19	64	3m	
117	COMP			↑		
118	E 377044	16:28	+40:07	64	6m	
119	COMP			↑		
120	E 377237	16:29	+40:07	64	8m	equally bright gal to E
121	COMP			↑		
122	E 377517	16:29	+40:14	64	15m	
123	COMP			↑		
124	E 377723	16:30	+40:15	64	5m	
125	COMP			↑		
126	COMP			77	8s	1.1" slit
127, 128	4U 1907+09	19:07	+09:45	77	15m	
129	COMP			↑	8s	
130, 131	HD 230579	19:02	+11:02	77	10s, 20s	
132	COMP			↑	8s	
133	segal-230	21:02	+36:41	73	8m	3" slit
134	COMP			↑		headers incorrect
135	segal-229	21:02	+36:41	73	8m	fixed header
136	COMP			↑		
137	segal-235	21:31	+02:29	73	10m	
138	COMP			↑		
139	segal-736	21:32	+02:27	73	17m	
140	COMP			↑		
141	segal-241	21:52	+03:04	73	10m	
142	COMP			↑		
143	segal-248	22:15	+13:50	73	6m	
144	COMP			↑		

60 inch Telescope Log

Observer: K Rines

PI: _____

Spectrograph: FAST

Grating: 3000

Date: 6/26/98

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Number	Object	R. A.	Dec.	L/R	Exp	Comments
145	SN 1986c	21:48	-13:11	Z	15m	bin by 2
146	COMP			↑		
147	3C 390.3	18:42	+79:46	G	10m	bin by 4
148	COMP			↑		
149	MKK 509	20:44	-10:43	G	3m	
150	COMP			↑		
151	N 7469	23:03	+08:52	G	2.5m	
152	COMP			↑		
153	MKK 335	00:06	+20:12	G	3m	
154	COMP			↑		
155, 156	CICyg	19:50	+35:41	12	1s, 30s	
157	COMP			↑		
158, 159	AGOr	21:51	+12:37	12	0.5s, 12s	
160	COMP			↑		
161, 162	Z And	23:34	+48:49	12	1s, 20s	
163	COMP			↑		
164	H DZ 17086	22:57	+62:44	56	3s	
165	COMP			↑		
166-175	BIAS				0s	clear + hazy
176-185	FLAT				6s	
186-195	BIAS				0s	bin by 2
196-205	FLAT				12s	
206-215	FLAT				20s	1.1" slit (bin by 4)
216-221	DARK				15m	bin by 2

60 inch Telescope Log

Observer: K Rines

PI: Kirshner

Spectrograph: FAST

Grating: 300l

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Date: 6/27/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	bin by 4
11-20	BIAS				0s	clear + hazy
21-30	FLAT				6s	
31-40	BIAS				0s	bin by 2
41-50	FLAT				12s	
51-55	SKY				2s	bin by 4
56	COMP					
57, 58	AG Dra	16:01	+66:48	12	2s, 20s	
59	COMP			↑		
60, 61	HZ 44	13:21	+36:23	56	2m	
62	COMP			↑		
63	HZ 44	13:21	+36:23	56	2m	bin by 2
64	COMP			↑		
65	SN 1978bu	10:47	+11:50	2	15m	
66	COMP			↑		
67	COMP			↑		
68, 69	SN 1985	11:46	+47:29	2	15m	wild spectrum!
70	COMP			↑		
71	MRK 279	13:52	+69:33	6	3m	bin by 4
72	COMP			↑		
73	N5548	14:18	+25:08	6	3m	
74	COMP			↑		
75	Feige 98	14:36	+27:42	56	2m	
76	COMP			↑		
77	mkw 8-031	14:41	+03:40	35	10m	
78	COMP			↑		
79	-032	14:42	+03:49	35	7m	
80	COMP			↑		
81	-033	14:42	+03:27	35	5m	
82	COMP			↑		

60 inch Telescope Log

Observer: K Rines

PI: Dan

Spectrograph: FAST

Grating: 300l

Date: 6/27/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
83	mkw8_034	14:40	+03:13	35	5m	
84	COMP			↑		
85	mkw8_036	14:40	+03:20	35	7m	
86	COMP			↑		
87	mkw8_037	14:42	+03:44	35	10m	
88	COMP			↑		
89	mkw8_038	14:40	+03:52	35	10m	
90	COMP			↑		
91	mkw8_039	14:42	+03:13	35	10m	
92	COMP			↑		
93	mkw8_040	14:39	+03:39	35	7m	spectrum looks stellar (maybe looks like g)
94	COMP			↑		
95	mkw8_041	14:41	+03:41	35	5m	
96	COMP			↑		
97	mkw8_042	14:41	+03:40	35	7m	
98	COMP			↑		
99	mkw8_043	14:41	+03:28	35	7m	bright spot to E
100	COMP			↑		
101	mkw8_045	14:39	+03:16	35	15m	
102	COMP			↑		
103	mkw8_046	14:40	+03:21	35	10m	got a2, but it's pos. not long bright star to E. enough
104	COMP			↑		
105	MRK 501	16:54	+39:46	6	5m	X-ray flare on 6/26
106	COMP			↑		bump on bkgd
107	BDp332642	15:50	+33:06	56	1m	
108	COMP			↑		
109	E 377780	16:30	+40:13	64	7m	
110	COMP			↑		
111	E 378095	16:30	+40:09	64	5m	bright star to W
112	COMP			↑		

60 inch Telescope Log
 Observer: K Rince
 PI: Ken
 Spectrograph: EAST
 Grating: 300R
 Date: 6/27/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
113	E 378118	16:31	+40:11	64	5m	
114	COMP			↑		
115	E 378321	16:31	+40:15	64	5m	
116	COMP			↑		
117	E 379834	16:34	+40:09	64	4m	
118	COMP			↑		
119	E 380386	16:35	+40:12	64	5m	
120	COMP			↑		
121	E 381135	16:36	+40:13	64	5m	
122	COMP			↑		
123	E 381897	16:38	+40:08	64	10m	to right star to E
124	COMP			↑		- washes out gal
125	E 381984	16:38	+40:11	64	7m	
126	COMP			↑		
127	E 382095	16:38	+40:10	64	5m	
128	COMP	16:35:09	39:54:51	64		MOVING TELLS core
129	E 389103	16:21	+39:52	64	10m	
130	COMP			↑		
131	E 393411	16:32	+39:59.5	64	7m	
132	COMP			↑		
133	E 395575	16:36	+39:57	64	5m	
134	COMP			↑		
135	E 404907	16:23	+39:45	64	4m	
136	COMP			↑		
137	E 405560	16:25	+39:44	64	10m	star to W
138	COMP			↑		
139	E 405691	16:25	+39:46	64	8m	
140	COMP			↑		
141	E 407193	16:28	+39:44	64	4m	
142	COMP			↑		

used comp 126 for 127
 telescope noisy day 128

60 inch Telescope Log
 Observer: K Rines
 PI: Ken
 Spectrograph: FAST
 Grating: 3001
 Date: 6/27/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
143	E407241	16:29	+39:44	64	4m	16:28:33 +39:44:00
144	COMP	16:28:42	+39:45:01	↑		moving?
145	E407905	16:30	+39:46	64	7m	
146	COMP	16:31:23	+39:55:49	↑		moving?
147	E408782	16:32	+39:57	64	5m	
148	COMP			↑		
149	E410347	16:35	+39:50	64	10m	
150	COMP			↑		
151	E41268	16:23	+37:43	64	4m	
152	COMP			↑		
153	sagal-242	21:52	+03:02	73	20m	star to E
154	COMP			↑		
155	sagal-244	21:53	+15:32	73	15m	star to W
156	COMP			↑		
157	sagal-252	22:20	+29:23	73	15m	star to E
158	COMP			↑		
159	N7469	23:03	+08:52	6	2.5m	
160	COMP			↑		
161	MKK335	00:04	+19:55	6	3m	
162	COMP			↑		
163	N7331	22:35	+34:10	57	3m	
164	COMP			↑		
165,166	C2 Cyg	19:50	+35:44	12	1/2, 30s	
167	COMP			↑		
168,169	AG Peg	21:51	+12:38	12	0.5, 12s	
170	COMP			↑		
171	HD 217086	22:55	+62:28	56	3s	
172	COMP			↑		
173-182	BIAS				0s	clear + hazy
183-192	FLAT				6s	
193-202	BIAS				0s	bin by 2
203-212	FLAT				12s	
213-218	DARK				15m	1in by 2

used comp 142 for 143
 used comp 146 for 145 - no other about

60 inch Telescope Log

Observer: K Rines

PI: Kirchner / Wilkes

Spectrograph: FAST

Grating: 300L

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Date: 6/28/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BIAS				0s	clear & hazy
21-30	FLAT				6s	
31-40	BIAS				0s	bin by 2
41-50	FLAT				12s	
51-55	SKY					bin by 4
56	COMP					
57, 58	AGDca	16:02	+66:48	12	2s, 20s	8:15
59	COMP			↑		
60, 61	HZ44	13:21	+36:23	57	2m	
62	COMP			↑		
63	HZ44	13:21	+36:23	57	2m	bin by 2
64	COMP			↑		
65	N4853	12:59	+27:36	57	3m	bin by 4
66	COMP			↑		
67	SN1998bu	10:47	+11:50	2	15m	bin by 2 8:30
68	COMP			↑		
69	SN1998ag	11:56	+55:08	2	15m	gal to E
70	COMP			↑		
71	N4151	12:11	+39:24	6	30s	bin by 4
72	COMP			↑		
73	N4258	12:16	+47:35	6	2m	
74	COMP			↑		
75	MRK279	13:52	+69:33	6	3m	
76	COMP			↑		
77	N5548	14:16	+25:22	6	3m	
78	COMP			↑		
79	mkw7-045	14:33	+03:31	35	20m	dome did 180° turn during exp
80				↑		gal to W
81	-046	14:35	+04:10	35	15m	

60 inch Telescope Log
 Observer: K Rines
 PI: Dan, Ken
 Spectrograph: FAST
 Grating: 3001
 Date: 6/28/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
82	COMP			35		
83	mkw7-047	14:35	+01:03	35	12m	NOT LONG ENOUGH
84	COMP			↑		
85	-048	14:34	+03:50	35	15m	
86	COMP			↑		
87	-049	14:32	+03:26	35	15m	UNDEREXPOSED REDD
88	COMP			↑		
89	mkw8 047	14:40	+03:08	35	15m	faint; nothing to guide on
90	COMP	14:36:57	+03:	↑		
91	-048	14:39	+03:32	35	10m	nice em
92	COMP	14:36:57	+03:47.5	↑		MOVING
93	mkw7-050	14:36	+03:49	35	15m	14:35:57 +03:49.3 MOVING
94	COMP	14:35:09	+03:31.27	↑		
95	-051	14:35	+03:28	35	15m	
96	COMP			↑		
97	-052	14:34	+03:50	35	20m	
98	COMP			↑		
99	E41271	16:23	+37:46	64	7m	
100	COMP			↑		
101	E418750	16:22	+39:31	64	5m	bright star to W
102	COMP			↑		16:21:48 39:31:20
103	E4190	16:25	+38:48	64	5m	16:25:24 38:48:32
104	COMP	MOVING		↑		16:24:56 +39:04:15
105	E419856	16:25	+39:52	64	4m	16:24:58 +39:32:14
106	COMP			↑		16:25:25 +39:33:06
107	E420045	16:25	+39:33	64	7m	16:25:28 +39:33:29
108	COMP	MOVING		↑		16:26:11 +39:34:03
109	E421169	16:28	+39:34	64	4m	
110	COMP			↑		16:27:56 +39:34:28
111	E421392	16:28	+39:34	64	3m	16:28:24 +39:34:35

used comp 90 for 91
 used comp 92 for 93 (92 was moving)
 NO GOOD COMP FOR 103
 112 → 16:28:59 +39:41:00

60 inch Telescope Log

Observer: K Rines

PI: Ken

Spectrograph: FAST

Grating: 3001

Date: 6/28/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
112	COMP	MOVING		64		
113	E421897	16:29	+39:41	64	3m	
114	COMP			↑		
115	E422577	16:30	+39:38	64	3m	star to E
116	COMP			↑		
117	E422698	16:31	+39:38	64	4m	
118	COMP			↑		
119	E422824	16:31	+39:34	64	4m	
120	COMP			↑		
121	E423368	16:32	+39:31	64	6m	
122	COMP			↑		
123	E423843	16:34	+39:36	64	5m	
124	COMP			↑		
125	E4275	16:26	+38:41	64	4m	
126	COMP			↑		
127	E433055	16:22	+39:21	64	30s	star
128	COMP			↑		
129	E433297	16:23	+39:19	64	10m	
130	COMP			↑		
131	E434318	16:26	+39:27	64	5m	
132	COMP			↑		
133	E434760	16:27	+39:19	64	4m	
134	COMP			↑		
135	E434875	16:27	+39:23	64	7m	
136	COMP			↑		
137	E435575	16:29	+39:28	64	5m	
138	COMP			↑		
139	E435802	16:29	+39:26	64	4m	star to W
140	COMP	16:29:21	+39:26:08	↑		shooting star thru image
141	E436276	16:31	+39:23	64	4m	16:30:34 +39:23:35

16:33:10 + 38:50:43

60 inch Telescope Log
 Observer: K Rines
 PI: Ken, Jeff Mc, Betsy
 Spectrograph: FAST
 Grating: 3008
 Date: 6/28/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
142	COMP			64		
143	E44355	16:36	+37:46	64	7m	gal's to E
144	COMP			↑		
145	E446436	16:23	+39:11	64	10m	
146	COMP			↑		16:23:30 +39:12:59
147	E446475	16:24	+39:13	64	5m	16:23:34 +39:13:38
148	COMP	MOJ1	↘	↑		16:24:04 +39:06:08
149	E446635	16:24	+39:05	64	8m	
150	COMP			↑		
151	COMP			77	8s	1.1" slit
152,153	4U1907+09	19:10	+09:50	77	15m	
154	COMP			↑	8s	
155,156	HD230579	19:02	+11:02	77	10s, 20s	
157	COMP			↑	8s	
158	sagal-253	22:22	+36:13	73	4m	3" slit
159	COMP			↑		22:22:25 36:12:42
160	sagal-254	22:23	+36:12	73	10m	bright * to NE of gal 22:22:38 ^{+36:11:43}
161	COMP	MOJ1	↘	↑		22:23:24 +36:08:04
162	sagal-257	22:24	+36:08	73	5m	
163	COMP			↑		
164	sagal-258	22:24	+36:05	73	8m	
165	COMP			↑		
166	sagal-267	22:58	+26:09	73	6m	gal to W
167	COMP			↑		+15s cut off by dome
168	N7469	23:03	+08:52	G	2.5m	star to E
169	COMP			↑		
170	MRK335	00:04	+19:55	G	3m	
171	COMP			↑		
172	Ferze 110	23:17	-05:26	56	90s	
173	COMP			↑		

60 inch Telescope Log
 Observer: K Rines
 PI: Wilkes, Kirschner, Koranyi
 Spectrograph: FAST
 Grating: 300L
 Date: 6/29/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK			"	15m	
11-20	BIAS				0s	clear + hazy
21-30	FLAT				6s	
31-40	BIAS				0s	bin by 2
41-50	FLAT				12s	
51-55	SKY				2s	
56	COMP					
57-61	SKY				20s	bin by 4
62	COMP					
63,64	AG Dra	16:02	+66:48	.12	2s, 20s	
65	COMP			↑		
66,67	HZ 44	13:24	+36:08	56	2m	
68	COMP			↑		
69	HZ 44	13:24	+36:08	56	2m	bin by 2
70	COMP			↑	12s	
71	N4051	12:03	+44:32	6	2m	"
72	COMP			↑	6s	
73	MRK 279	13:53	+69:18	6	3m	bin by 4
74	COMP			↑		
75	N 5548	14:18	+25:08	6	3m	
76	COMP			↑		
77	SN 1986u	10:47	+11:50	2	15m	bin by 2
78	COMP			↑		
79	mkw 8-049	14:40	+03:05	35	7m	bin by 4
80	COMP			↑		
81	-050	14:40	+03:57	35	5m	
82	COMP			↑		
83	-035	14:40	+03:57	35	15m	very faint, way under exposed
84	COMP			↑		
85	-051	14:41	+03:40	35	10m	

60 inch Telescope Log

Observer: K Rines

PI: Dan, Huchra, Ken

Spectrograph: FAST

Grating: 300R

Date: 6/29/98

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Number	Object	R. A.	Dec.	L/R	Exp	Comments
86	COMP			35		
87	mkw8-052	14:42	+03:01	35	12m	MARGINAL
88	COMP			↑		
89	mkw8-044	14:42	+03:56	35	15m	possibly 2 gals needs more
90	COMP			↑		
91	-053	14:39	+03:11	35	15m	could use more
92	COMP			↑		
93	-054	14:41	+03:56	35	15m	possibly 2 gals or gal + * need more
94	COMP			↑		also, star to E
95	-055	14:42	+03:05	35	20m	Hd marginal though
96	COMP			↑		
97	-056	14:40	+03:18	35	15m	not enough
98	COMP			↑		
99	-057	14:39	+03:09	35	10m	star to W
100	COMP			↑		
101	-058	14:41	+03:27	35	15m	bright * to E
102	COMP			↑		
103	2m160535.8p17	16:06	+17:44	68	10m	
104	COMP			↑		
105	2m160529.2p19	16:05	+19:49	68	15m	em
106	COMP			↑		
107	2m160530.3p15	16:06	+15:30	68	15m	* to E
108	COMP			↑		
109	E446714	16:24	+39:13	64	5m	
110	COMP			↑		
111	E446827	16:25	+39:08	64	4m	
112	COMP			↑		
113	E447477	16:26	+39:05	64	7m	bonus gal to W
114	COMP			↑		
115	E447537	16:27	+39:08	64	4m	

60 inch Telescope Log

Observer: K Rines

PI: Ken

Spectrograph: FAST

Grating: 3001

Date: 6/29/98

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
116	COMP			64		
117	E447936	16:28	+39:06	64	4m	
118	COMP			↑		
119	E450378	16:34	+39:11	64	4m	
120	COMP			↑		
121	E450424	16:34	+39:15	64	3m	nice em
122	COMP			↑		
123	E451951	16:38	+39:15	64	3m	
124	COMP			↑		
125	E4582	16:27	+38:47	64	3m	
126	COMP			↑		
127	E459860	16:22	+38:55	64	5m	star to E
128	COMP			↑		
129	E459862	16:22	+39:00	64	5m	
130	COMP			↑		
131	E461027	16:26	+38:56	64	2m	
132	COMP			↑		
133	E464466	16:36	+38:58	64	4m	star to W
134	COMP			↑		
135	E464605	16:36	+39:03	64	5m	
136	COMP			↑		
137	E472701	16:25	+38:48	64	5m	
138	COMP			↑		
139	E472744	16:26	+38:41	64	3m	
140	COMP			↑		
141	E47660	16:20	+37:35	64	5m	
142	COMP			↑		
143	E47835	16:20	+37:34	64	5m	star? to NE bin by 2
144	COMP			↑	12s	
145	E5262	16:29	+38:49	64	3m	bin by 4

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>6395</u>
Observer: <u>K Rines</u>				Grating: <u>3000</u>		
PI: <u>Ken, Betsy, Kirstner, Wilkes</u>				Date: <u>6/29/98</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
146	COMP			64		
147	a2199.10886	16:21	+38:36	64	4m	
148	COMP			↑		
149	a2199.11179	16:22	+38:28	64	5m	
150	COMP			↑		
151	a2199.12810	16:28	+38:35	64	7m	could have used more
152	COMP			↑		
153	a2199.174629	16:19	+41:19	64	10m	bright * to E
154	COMP			↑		
155	sagal-259	22:36	+33:57	73	11m	
156	COMP			↑		
157	sagal-260, sagal-261	22:36	+33:58	73	10m	261 to E
158	COMP			↑		
159	sagal-262	22:36	+33:59	73	8m	star to W
160	COMP			↑		
161	sagal-265	22:58	+26:08	73	8m	
162	COMP			↑		
163	sagal-277	23:16	+06:41	73	6m	
164	COMP			↑		
165	SN1998eo	21:48	-13:11	2	15m	bin by 2
166	COMP			↑		
167	MRK509	20:44	-10:43	6	3m	bin by 4
168	COMP			↑		
169	N7469	23:03	+08:52	6	2.5m	
170	COMP			↑		
171	MRK335	00:06	+20:12	6	3m	
172	COMP			↑		
173	N7331	22:37	+34:25	57	3m	
174	COMP			↑		
175	HD217086	22:57	+62:44	56	4s	

60 inch Telescope Log

Spectrograph: FAST

Observer: K Rines

Grating: 300L

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PI: Kenyon

Date: 6/29/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
176	COMP			56		
177,178	CICyg	19:50	+35:41	12	1,30s	
179	COMP			↑		
180,181	AG Peg	21:51	+12:38	12	0.5, 12s	
182	COMP			↑		
183,184	Z And	23:34	+48:49	12	1s, 20s	
185	COMP			↑		
186-195	BIAS				0s	
196-205	FLAT				6s	
206-215	BIAS				0s	bin by 2
216-225	FLAT				12s	
226-231	DARK				15m	

60 inch Telescope Log

Observer: K RinesPI: Wilkes, Kirshner, KenyonSpectrograph: FASTGrating: 300LDate: 6/30/98Page: 6397

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	bin by 2
41-50	FLAT				12s	
51-55	SKY				2s	bin by 4
56	COMP					
57,58	AGOrn	16:02	+66:48	12	2s, 20s	
59	COMP			↑		
60,61	HZ 44	13:24	+36:08	56	2m	
62	COMP			↑		
63	HZ 44	13:24	+36:08	56	2m	bin by 2
64	COMP			↑		
65	N4151	12:10	+39:24	6	30s	bin by 4
66	COMP			↑		
67	N4258	12:19	+47:18	6	2m	
68	COMP			↑		
69	MRK 279	13:53	+69:18	6	3m	
70	COMP			↑		
71	SN1998bu	10:47	+11:50	2	15m	bin by 2
72	COMP			↑		
73	N5548	14:18	+25:08	6	3m	bin by 4
74	COMP			↑		
75	SN1998ct	15:51	+21:57	2	15m	bin by 2
76	COMP			↑		gal close to E
77	SN1998cs	16:31	+41:13	2	20m	Type I?
78	COMP			↑		
79	HBC 653	16:49	-14:17	74	90s	bin by 4
80	COMP			↑		
81	HBC 654	16:49	-14:17	74	2.5m	

60 inch Telescope Log
 Observer: K Rines
 PI: Kenya, Koranyi, Rines, Huchra
 Spectrograph: FAST
 Grating: 300l
 Date: 6/30/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
82	COMP			74		
83	HBC658	17:16	-20:56	74	2m	
84	COMP			↑		
85	HBC659	17:16	-20:58	74	4m	
86	COMP			↑		
87	HBC660	17:16	-20:54	74	4m	
88	COMP			↑		
89	HBC661	17:16	-20:58	74	2.5m	
90	COMP			↑		
91	mkw7_053	14:35	+04:16	35	20m	UNDEREXPOSED H α ?
92	COMP			↑		
93	E449349	16:31	+39:13	64	5m	star to SW PA=0°
94	COMP			↑		
95	E450365	16:34	+39:15	64	5m	
96	COMP			↑		
97	E390923	16:26	+39:53	64	5m	
98	COMP			↑		
99	E381897	16:38	+40:08	64	5m	finishes notebook
100	COMP			↑		
101	E381897	16:38	+40:08	64	7m	again - more counts
102	mkw7_055	14:36	+04:03	35	15m	PA=90°
103	COMP			↑		
104	N5548	14:18	+25:08	6	3m	request (ASCAPTE campaign)
105	COMP			↑		
106	2m160519.1p16	16:05	+16:05	68	20m	stars? to W underexposed H α
107	COMP			↑		
108	2m160544.3p16	16:06	+16:46	68	20m	? to E
109	COMP			↑		
110	2m160540.6p18	16:06	+18:05	68	17m	
111	COMP			↑		

60 inch Telescope Log
 Observer: K Rines
 PI: Garcia, Rines, McClintock
 Spectrograph: FAST
 Grating: 300l
 Date: 6/30/98
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
112	XTE J2123-058	21:23	-05:48	65	15m	...
113	COMP			↑		
114	a2199.192848	16:19	+40:52	64	10m	underexposed Ha
115	COMP			↑		
116	19336	16:24	+38:22	64	10m	* to W
117	COMP			↑		
118	212018	16:21	+40:25	64	10m	
119	COMP			↑		
120	XTE J2123p058	21:23	-05:48	65	15m	* to E
121	COMP			↑		
122	a2199.230563	16:19	+40:03	64	10m	*
123	COMP			↑		
124	2394	16:19	+38:47	64	8m	em
125	COMP			↑		
126	XTE J2123p058	21:23	-05:48	65	15m	
127	COMP			↑		
128	a2199.249959	16:19	+39:32	64	10m	
129	COMP			↑		
130	25668	16:19	+38:08	64	10m	bin by 2 - should have been longer
131	COMP			↑		
132	XTE J2123p058	21:23	-05:48	65	15m	bin by 4
133	COMP			↑		
134	COMP			77	8s	1.1" slit
135,136	4U1907+09	19:07	+09:45	77	15m	
137	COMP			↑		
138,139	HD 230579	19:02	+11:02	77	10s, 20s	
140	COMP			↑		
141	XTE J2123p058	21:23	-05:48	65	15m	3" slit
142	COMP			↑		
143	N7469	23:03	+08:52	6	2.5m	* to E

60 inch Telescope Log	Spectrograph: <u>FAST</u>
Observer: <u>K Rines</u>	Grating: <u>300A</u>
PI: <u>Wilkes, Canyon</u>	Date: <u>6/30/98</u>

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Number	Object	R.A.	Dec.	L/R	Exp	Comments
144	COMP			6		
145	MRK335	00:04	+19:55	6	3m	
146	COMP			↑		
147	Feige110	23:17	-05:26	56	90s	
148	COMP			↑		
149	N7331	22:35	+34:10	57	3m	
150	COMP			↑		
151,152	ε Cyg	19:50	+35:41	12	1s, 30s	
153	COMP			↑		
154,155	AG Peg	21:51	+12:38	12	0.5s, 12s	
156	COMP			↑		
157,158	Z And	23:34		12	1s, 20s	
159	COMP			↑		
160-169	BIAS				0s	
170-179	FLAT				6s	
180-189	BIAS				0s	bin by 2
190-199	FLAT				12s	
200-209	FLAT				20s	1.1" slit (bin by 4)
210-215	DARK				15m	bin by 2