

60 inch Telescope Log

Observer: Calkins

PI: CARTER

Spectrograph: FAST

Grating: 300 L / 3" slit

Page: 6223

Date: 5/1/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARKS				15m	binby 4
11-20	BIAS'S				0s	
21-30	FLAT'S				6s	
31-40	BIAS'S				0s	binby 2
41-50	FLAT'S				12s	
51-55	skys			57	2s	binby 4
56	comp			↑		
57	GDI40	11 37	29 47	#56	90s	
58	comp			↑		
59	N3379	10 47	12 35	#57	60s	
60	comp			↑		
61	B000090	12 05	28 22	#75	12m	
62	comp			↑		
63	Z011674	12 06	31 57	#75	4m	
64	comp			↑		
65	A000748	12 06	27 56	#75	4m	
66	comp			↑		
67	Z001201	12 06	28 10	#75	3m	
68	comp			↑		12 06 38 + 28 10 41
69	Z008573	12 07	32 04	#75	3m	12 07 15 + 32 04 52
70	comp	moving?		↑		12 07 30 + 31 20 51
71	N002950	12 07	31 20	#75	3m	12 07 30 + 31 20 55
72	comp			↑		12 07 30 + 31 20 55
73	N000309	12 09	31 14	#75	3m	
74	comp			↑		
75	Z000188	12 09	29 55	#75	5m	
76	comp			↑		
77	N000158	12 10	26 25	#75	3m	
78	comp			↑		
79	Z000342	12 10	30 24	#75	1m	

shift from 68 to 70 is -0.05 pixels  
 shift from 70 to 72 is -0.008 pixels  
 used file 72 for 69

60 inch Telescope Log

Observer: Colkins

PI: Carver/Kirchner

Spectrograph: FAST

Grating: 200L/3" slit

Page: 6224

Date: 5/1/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
80	comp			↑		
81	2010024	12 10	31 39	#75	5m	
82	comp			↑		
83	2010025	12 11	27 38	#75	5m	
84	comp			↑		
85	2000940	12 13	28 30	#75	4m	star in slit to the east
86	comp			↑		
87	2001203	12 14	28 25	#75	2m	
88	comp			↑		
89	2010026	12 15	26 53	#75	2m	
90	comp			↑		
91	N000310	12 15	28 10	#75	3m	
92	comp			↑		
93	A000749	12 15	27 00	#75	3m	
94	comp			↑		
95	2003475	12 15	26 39	#75	7m	
96	comp			↑		
97	2010027	12 15	27 26	#75	4m	
98	comp			↑		
99	B000227	12 16	28 08	#75	15m	
100	comp			↑		
101	sn1998ag	11 56	55 07	#2	10m	galactic disk to the east
102	comp			↑		
103	sn1998bn	12 29	-23 09	#2	10m	" " "
104	comp			↑		
105	sn1998ab	12 48	41 55	#2	15m	
106	comp			↑		
107	H2 44	13 23	46 07	#56	2m	
108	H2 44	13 23	36 07	#56	2m	
109	comp			↑		

60 inch Telescope Log  
 Observer: Calkins  
 PI: Carter

Spectrograph: FAST  
 Grating: 500L/2" et.  
 Date: 5/1/98

Page: 6225

Number	Object	R.A.	Dec.	L/R	Exp	Comments
110	Z000080	12 18	28 10	#75	30s	binby 4
111	comp			↑		(for files 110-115)
112	Z000204	12 18	29 49	#75	3m	forgot to update
113	comp			↑		comment field to
114	Z003007	12 19	28 18	#75	2m	reflect binby 4!
115	comp			↑		
116	N0002260	12 19	29 53	#75	20m	
117	comp			↑		
118	N000239	12 19	30 20	#75	3m	
119	comp			↑		
120	N000120	12 19	27 37	#75	4m	
121	comp			↑		
122	Z005395	12 20	27 58	#75	4m	
123	comp			↑		
124	N000361	12 20	31 10	#75	5m	
125	comp			↑		
126	N000871	12 21	28 09	#75	3m	
127	comp			↑		
128	N000280	12 21	30 04	#75	2m	
129	comp			↑		
130	Z012726	12 22	28 25	#75	2m	
131	comp			↑		
132	A000114	12 22	32 05	#75	20m	bright star to the
133	comp			↑		east 12:22:05 +32:05:53
134	Z000081	12 22	29 53	#75	1m	12:22:35 +29:53:44
135	comp	moving?		↑		12:23:22 +29:40:47
136	Z010029	12 23	27 23	#75	3m	
137	comp			↑		12:23:50 +27:23:54
138	Z007381	12 23	28 12	#75	4m	
139	comp			↑		

slit between 133 + 135 in 0.0269 used 133 for <sup>comp</sup>  
 slit between 135 + 137 in 0.027 134  
 " " 133 + 137 in .054

## 60 inch Telescope Log

Observer: CalkinsPI: Carter/Walkers/HuchraSpectrograph: FASTGrating: 300 L/3" slitPage: 6226Date: 5/1/98

Number	Object	R. A.	Dec.	L/R	Exp	Comments
140	Z001472	12 24	31 31	" 75	5m	
141	comp			↑		
142	N000176	12 25	28 33	" 75	3m	
143	comp			↑		
144	N0002262	12 25	26 42	" 75	20m	
145	comp			↑		
146	B000019	12 25	27 32	" 75	20m	
147	comp			↑		
148	MRK 279	13 53	69 18	" 6	3m	
149	comp			↑		
150	N5548	14 17	25 08	" 6	3m	
151	comp			↑		
152	N4258	12 18	47 18	" 6	2m	
153	comp			↑		
154	SRS1425p606	14 26	20 26	" 6	10m	
155	comp			↑		
156	N4151	12 10	39 24	" 6	30s	
157	comp			↑		
158	N4051	12 03	44 32	" 6	3m	HABY
159	comp			↑		
160	MRK 501	16 53	39 45	" 6	5m	star partially in slit to the east
161	comp			↑		
162	ZM160542.5p	16 05	13 21	" 68	15m	
163	comp			↑		
164	ZM160537.4p	16 05	13 40	" 68	15m	
165	comp			↑		
166	ZM160515.4p	16 05	19 16	" 68	8m	
167	comp			↑		
168	ZM160515.8p	16 05	13 54	" 68	8m	
169	comp			↑		

60 inch Telescope Log

Observer: Calkins

PI: Muchra/Wilkes/Kirshner

Spectrograph: FAST

Grating: 3000/3" sl.

Page: 6229

Date: 5/1/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
170	2M160532.2p	16 05	16 49	<sup>15</sup> 68	15m	star in slit to
171	comp			↑		the east
172	sm 1998 bp	17 54	18 19	<sup>15</sup> 2	15m	binby 2
173	comp			↑		
174	sm 1998V	18 22	15 42	<sup>15</sup> 2	20m	
175	comp			↑		
176	3C390.3	18 42	79 45	<sup>15</sup> 6	10m	binby 4
177	comp			↑		(forgot to update
178	AG Dra	16 01	66 47	<sup>15</sup> 12	30s	"binby 4" in file
179	AG Dra	16 01	66 47	<sup>15</sup> 12	30s	headers)
180	comp			↑		
181-183	sky's	zenith		57	90s	
184	comp			↑		
185-194	BIAS's				0s	binby 4
195-204	FLAT's				6s	
205-214	BIAS's				0s	binby 2
215-224	FLAT's				12s	
225-234	DARKS				15m	binby 2

60 inch Telescope Log

Observer: P Berlin  
 PI: Geller

Spectrograph: FAST  
 Grating: 3000, 3" slit  
 Date: 5/2/98

Page: 6228

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	airrush v. hazy
11-20	BIAS				0s	
21-30	FLAT				6s	
31-40	BIAS				0s	its hazy
41-50	FLAT				12s	
51-55	sky	zenith		57	6s	binby 2
56	COMP			↑	6s	
57-58	F4434			56	90s	binby 2
59	COMP			↑	↑	
60	N4456B			56	3m	
61	COMP			↑		
62	N44051			6	2m	
63	COMP			↑		
64	N4451			6	2m	
65	COMP			↑		
66	α1367.894063	12:01	+18:50	64	5m	
67	COMP			↑		
68	4198	12:06	+18:35	64	6m	
69	COMP			↑		
70	4169	12:06	+18:42	64	4m	
71	COMP			↑		
72	4196	12:00	+18:01	64	8m	em
73	COMP			↑		
74	4197	12:00	+17:53	64	5m	
75	COMP			↑		
76	4199	12:02	+17:51	64	4m	
77	COMP			↑		
78	4225	12:02	+17:41	64	5m	
79	COMP			↑		

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>6229</u>	
Observer: <u>PB</u>			Grating: <u>302</u>		Date: <u>5/2/98</u>	
PI: <u>Geller/Kirshner/Dan</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
80	<u>a1367914299</u>	<u>12:03</u>	<u>+17:32</u>	<u>64</u>	<u>10m</u>	<u>wk; clean. Q. int dim 2hr 21</u>
81	<u>COMP</u>			<u>↑</u>		
82	<u>.4235</u>	<u>12:01</u>	<u>+17:25</u>	<u>64</u>	<u>10m</u>	<u>70</u>
83	<u>COMP</u>			<u>↑</u>		
84	<u>4203</u>	<u>12:02</u>	<u>+17:11</u>	<u>64</u>	<u>5m</u>	<u>71</u>
85	<u>COMP</u>			<u>↑</u>		
86	<u>.4387</u>	<u>11:57</u>	<u>+16:31</u>	<u>64</u>	<u>5m</u>	<u>72</u>
87	<u>COMP</u>			<u>↑</u>		
88	<u>.4399</u>	<u>12:03</u>	<u>+16:27</u>	<u>64</u>	<u>10m</u>	<u>74</u>
89	<u>COMP</u>			<u>↑</u>		
90	<u>89.4960</u>	<u>12:00</u>	<u>+15:27</u>	<u>64</u>	<u>12m</u>	<u>76</u>
91	<u>COMP</u>			<u>↑</u>		
92	<u>.4398</u>	<u>12:03</u>	<u>+16:29</u>	<u>64</u>	<u>5m</u>	<u>78 LSB wk</u>
93	<u>COMP</u>			<u>↑</u>		
94	<u>.4400</u>	<u>12:03</u>	<u>+16:33</u>	<u>64</u>	<u>10m</u>	<u>90 LSR WK</u>
95	<u>COMP</u>			<u>↑</u>		<u>Finishes the notebook!</u>
96	<u>SNP98a</u>	<u>11:46</u>	<u>+17:28</u>	<u>2</u>	<u>10m</u>	
97	<u>COMP</u>			<u>↑</u>		
98	<u>SNP98a</u>	<u>11:56</u>	<u>+16:07</u>	<u>2</u>	<u>10m</u>	
99	<u>COMP</u>			<u>↑</u>		
100	<u>SNP98ab</u>	<u>12:48</u>	<u>+11:55</u>	<u>2</u>	<u>20m</u>	
101	<u>COMP</u>			<u>↑</u>		
102-3	<u>H244</u>	<u>13:21</u>	<u>+7:36</u>	<u>56</u>	<u>90s</u>	
104	<u>COMP</u>			<u>↑</u>		
105	<u>mkw12-37</u>	<u>14:02</u>	<u>+9:03</u>	<u>35</u>	<u>15m</u>	<u>em!</u>
106	<u>COMP</u>			<u>↑</u>		
107	<u>mkw12-38</u>	<u>14:05</u>	<u>+9:20</u>	<u>35</u>	<u>20m</u>	<u>em! pix 2103 - H<math>\alpha</math>; H<math>\beta</math> - ok</u>
108	<u>COMP</u>			<u>↑</u>		
109	<u>mkw12-041</u>	<u>14:04</u>	<u>+09:30</u>	<u>35</u>	<u>17m</u>	<u>gradem</u>
110	<u>COMP</u>			<u>↑</u>		

## 60 inch Telescope Log

Observer: PB

PI: \_\_\_\_\_

Spectrograph: FASTGrating: 3WLDate: 5/2/98Page: 6230

Number	Object	R.A.	Dec.	L/R	Exp	Comments
111	mkw12_046	14:02	+9:09	3S	17m	k to W ; em!
112	WMP			↑		
113	N5548	14:15	+75	6	3m	
114	WMP			↑		
115	0000101	12:56	+22:17	75	8m	em
116	WMP			↑		
117	Z 013748	12:57	+26:51	75	3m	
118	WMP			↑		
119	Z 013751	12:58	+34:10	75	4m	
120	WMP			↑		
121	Z 013753	12:58	+28:42	75	5m	42
122	WMP			↑		
123	ZW6254	12:58	+32:10	75	3m	43
124	WMP			↑		
125	Z 002072	12:58	+27:35	75	3m	
126	WMP			↑		
127	Z 011689	12:58	+27:15	75	5m	
128	WMP			↑		
129	Z 011640	12:58	+21:06	75	3m	
130	WMP			↑		
131	Z 001160	12:58	+27:10	75	4m	
132	WMP			↑		
133	Z 000652	12:58	+27:40	75	3m	
134	WMP			↑		
135	Z 004614	12:59	+26:48	75	2m	
136	WMP			↑		
137	Z 007589	12:59	+27:38	75	4m	
138	WMP			↑		
139	Z 011691	12:59	+27:24	75	2m	
140	WMP			↑		



60 inch Telescope Log		Spectrograph: <u>FAST</u>		Page: <u>6231</u>		
Observer: <u>PB</u>		Grating: <u>302</u>		Date: <u>5/2/98</u>		
PI: <u>Carter</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
141	Z001006	12:59	+26:02	75	5m	
142	COMP			↑		
143	Z007390	12:59	+26:42	75	2 <sup>1</sup> m	
144	COMP			↑		
145	Z004607	13:00	+26:53	75	2m	
146	COMP			↑		
147	Z008583	13:00	+26:40	75	2m	
148	COMP			↑		
149	Z007391	13:00	+28:20	75	2 <sup>1</sup> m	57
150	COMP			↑		
151	N000069	14:30	+31:12	75	4m	bin by Z; * to W of nucleus
152	COMP			↑		↑ HII region!
153	N001086	14:30	+27:21	75	7m	em
154	COMP			↑		
155	Z007410	14:31	+28:17	75	2m	quasar nucleus???
156	COMP			↑		Mrk 684
157	Z009601	14:31	+27:14	75	3m	
158	COMP			↑		
159	A000947	14:31	+30:47	75	3 <sup>1</sup> m	
160	COMP			↑		
161	Z015794	14:32	+31:35	75	3 <sup>1</sup> m	Sey 1
162	COMP			↑		
163	Z011728	14:32	+28:33	75	3 <sup>1</sup> m	
164	COMP			↑		
165	N000698	14:32	+27:25	75	3m	
166	COMP			↑		
167	N002971	14:33	+28:41	75	4m	* to E
168	COMP			↑		
169	Z010056	14:34	+31:33	75	2 <sup>1</sup> m	
170	COMP			↑		

60 inch Telescope Log

Observer: PB  
 PI: Carter / Kushner / McClintock

Spectrograph: FAST  
 Grating: 30L  
 Date: 5/2/98

Page: 6232

Number	Object	R.A.	Dec.	L/R	Exp	Comments
171	ZO10059	14:34	+30:58	75	3m	em
172	COMP			↑		
173	ZO06271	14:34	+30:16	75	4m	
174	COMP			↑		
175	ZO10060	14:35	+26:32	75	4m	to E
176	COMP			↑		
177	ZO11729	14:36	+28:27	75	5m	205 pec em
178	COMP			↑		wk; high z
179	A1603p159	16:03	+15:19	69	15m	• bright star just south
180	COMP			↑		Faint objects in slit
181	SN1998bp	17:54	+14:19	2	15m	good one!
182	COMP			↑		
183	COMP			↓	10s	1.1" slit ↓ apr
184/185	4U1907p09	19:07	+04:44	77	15m	±2
186	COMP			↑		
187-8	HD230599	19:01	+11:01	77	10s/15s	
189	COMP			↑		
190	ZO08612	16:00	+30:23	75	2m	3" slit ↓ apr
191	COMP			↑		
192	A006452	16:00	+28:08	75	3m	em
193	COMP			↑		
194	NW02999	16:01	+31:4	75	4m	
195	COMP			↑		
196	ZO11743	16:01	+28:42	75	3m	
197	COMP			↑		
198	ZO11744	16:01	+31:53	75	4m	6m by 2; to E
199	COMP			↑		
200-201	AG Dra	16:01	+66:48	12	20s, 2s	
202	COMP			↑		

203-212  
 213-222  
 223-232  
 233-242  
 243-252

BIAS  
 FLAT  
 BIAS  
 FLAT  
 FLAT - 1.1" slit

60 inch Telescope Log

Observer: P Berlin  
 PI: Geller

Spectrograph: EAST

Grating: 3002

Page: 6233

Date: 6/3/98

Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	bmbgZ
11-20	DARK				15m	
21-30	BIAS				05	
31-40	FLAT				6s	
41-50	BIAS				05	bmbgZ
51-60	FLAT				12s	"
61-65	sky			57	7s	bright moon + thin clouds
66	WMP			r		
67-68	Feig 34	10:36	+43:21	56	40s	
69	WMP			r		lots of cirrus to NW
70	N3115	10:02	-07:28	57	2hr	
71	WMP			r		
72	MRK421	11:01	+36:28	6	4m	
73	WMP			r		
74	N4258	12:16	+47:31	6	2m	
75	WMP			r		
76	01367.M0256	11:45	+20:09	64	7m	yuck OK
77	WMP			r		
78	.2597	11:57	+19:55	64	5m	ok
79	WMP			r		
80	.2598	11:37	+19:55	64	7m	em
81	WMP			r		
82	.2607	11:40	+19:57	64	8m	em
83	WMP			r		
84	.2612	11:42	+20:02	64	8m	
85	WMP			r		
86	.2615	11:42	+19:56	64	8m	
87	WMP			r		
88	.2659	11:56	+19:59	64	8m	
89	WMP			r		

60 inch Telescope Log

Observer: PB  
 PI: Greller & Kivshner

Spectrograph: FAST

Grating: 30L

Page: 6234

Date: 5/3/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
90	g1367.1406.2717	11:45	+19:49	64	7m	pec
91	WMP			↑		
92	.2725	11:46	+19:46	64	5m	
93	WMP	11:41		↑		
94	.2753	11:41	+19:32	64	10M	
95	WMP			↑		
96	.2771	11:44	+19:34	64	8m	
97	WMP			↑		
98	.2780	11:45	+19:31	64	5m	
99	COMP			↑		
100	.2783	11:45	+19:36	64	8m	
101	WMP			↑		
102	.2830	11:45	+19:24	64	7m	
103	WMP			↑		
104	.2907	11:42	+18:53	64	10m	
105	WMP			↑		
106	.2915	11:49	+18:53	64	10m	em
107	WMP			↑		
108	SN1998bn	12:29	-23:09	2	11m	bright sky
109	WMP			↑		
110	SN1998S	11:46	+17:28	2	11m	
111	WMP			↑		
112	SN1998aa	11:56	+55:07	2	10m	
113	WMP			↑		
114	SN1998ab	12:48	+41:53	2	15m	
115	WMP			↑		
116	H244	15:21	-23:06	96	2m	
117	WMP			↑		
118	201164	13:00	+27:38	56	6m	
119	WMP			↑		

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>6235</u>	
Observer: <u>PD</u>			Grating: <u>300R</u>			
PI: <u>Carter/Huchra/Kirshner</u>			Date: <u>5/3/98</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
121	Z013755	13:00	+27:24	75	4m	
122	COMP			↑		
123	Z011041	13:01	+28:40	75	8m	
124	COMP			↑		
125	970615.144.133	13:17	+17:58	68	20m	? high cz gal
126	COMP			↑		
127	970615.146.909	13:19	+18:38	68	20m	gal!
128	COMP			↑		
129	970615.149.1314	13:21	+18:51	68	20m	ok gal
130	COMP			↑		
131	97060276.3558	13:20	+21:28	68	20m	gal!
132	COMP			↑		
133	Z001705	13:01	+27:53	75	2m	
134	COMP			↑		
135	Z0048584	13:01	+28:05	75	3m	
136	COMP			↑		
137	N002958	13:01	+27:53	75	3m	
138	COMP			↑		
139	Z000619	13:01	+28:40	75	2m	
140	COMP			↑		
141	Z011695	13:02	+27:46	75	4m	pec!
142	COMP			↑		
143	Z015757	13:02	+28:23	75	3m	
144	COMP			↑		
145	Z013758	13:02	+28:06	75	4m	wk.
146	COMP			↑		
147	SN1998bp	17:54	+18:19	2	15m	clouds moving in;
148	COMP			↑		get now white
149	N55458	14:13	+25:22	6	3m	getting 13 gal.
150	COMP			↑		

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>6236</u>	
Observer: <u>PB</u>			Grating: <u>302</u>			
PI: <u>Carter</u>			Date: <u>5/3/88</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
151	N 000876	14:37	+30:28	75	5m	em
152	WMP			↑		thin clouds
153	Z 013795	14:38	+28:27	75	5m	
154	WMP			↑		
155	Z 003015	14:38	+30:26	75	5m	
156	WMP			↑		
157	N 002972	14:39	+30:48	75	5m	
158	WMP			↑		
159	Z 010061	14:39	+30:57	75	3m	
160	WMP			↑		
161	N 001362	14:40	+31:30	75	5m	
162	WMP			↑		
163	Z 005417	14:40	+34:22	75	2m	
164	WMP			↑		
165	N 001764	14:41	+34:35	75	3m	
166	WMP			↑		
167	A 000660	14:42	+28:43	75	3.5m	
168	WMP			↑		
169	N 001087	14:44	+28:33	75	5m	↓ to E
170	WMP			↑		
171	Z 007411	14:45	+26:18	75	3m	
172	WMP			↑		
173	A 00321	14:45	+30:25	75	3m	
174	WMP			↑		
175	A 00751	14:45	+27:02	75	4m	Sy 1
176	WMP			↑		
177	A 00752	14:45	+28:31	75	5m	
178	WMP			↑		
179	Z 011782	14:46	+31:41	75	5m	
180	WMP			↑		

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>6237</u>	
Observer: <u>PB</u>			Grating: <u>302</u>			
PI: <u>Carter</u>			Date: <u>5/3/98</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
181	N001766	14:47	+31:45	75	5m	283
182	WMP			↑		thin clouds.
183	Z04016	14:48	+31:47	75	6m	284
184	WMP			↑		
185	Z01062	14:50	+27:34	75	4m	287
186	WMP			↑		
187	N001767	14:54	+30:12	75	5m	H#!!
188	WMP			↑		
189	O00015	14:56	+30:14	75	10m	em
190	WMP			↑		
191	N002973	14:56	+31:29	75	9m	
192	WMP			↑		
193	N000662	16:02	+32:08	75	3m	
194	WMP			↑		
195	Z004625	16:03	+27:10	75	2m	
196	WMP			↑		clouds all over & down
197	N002980	16:03	+26:32	75	3m	
198	WMP			↑		
199-200	AGDa	16:01	+66:48	12	20x25	
201	WMP			↑		
202-204	HD142281	20:10	+40:07	56	5s	
205	WMP			↑		
206-215	BFAS				12s	pointing tests for Nelson
216-215	FLAT				6s	
216-235	BFAS				0s	bm by Z
236-215	FLAT				12s	"

★ End of FAST Run ★

Fast to Susan Karz  
pg 1 of 5

★ Start of FAST Run★

60 inch Telescope Log		Spectrograph: <u>FAST</u>		Page: <u>6253</u>		
Observer: <u>P. Berland</u>		Grating: <u>30R</u>		Date: <u>5/15/98</u>		
PI: <u>Kirshner &amp; Geller</u>						
Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-5	BIAS					a few problems w/ motors;
6	COMP					but all is OK now.
7-11	DARK				15m	30 cents lost 400 pixels
12-16	DARK				15m	bm by Z
17-26	BIAS				0s	
27-36	FLAT				6s	
37-46	BIAS				0s	bm by Z
47-56	FLAT				12s	bm by Z
57-61	sky	Zenith		S7	2s	7:30
62	COMP			↑	5s	
63-64	Forge 34	10:36	+43:21	S6	90s	bright sky 8:10pm
65	COMP			↑		
66	N4151	12:06	+39:41	6	30s	clear.
67	COMP			↑		
68	N4051	12:10	+44:48	6	2m	
69	COMP			↑		
70	N4258	12:16	+47:34	6	2m	
71	COMP			↑		
72	MRX421	11:01	+38:28	6	4m	
73	COMP			↑		
74-76	SN1998bu	10:36	+11:50	Z	5m	wow! M96 Ia
77	COMP			↑		H <sub>0</sub> =?
78	SN1998S	11:46	+47:28	Z	10m	wow.
79	COMP			↑		
80	SN1998ag	11:56	+55:07	Z	10m	wow
81	COMP			↑		
82	a1367.69.4259	12:03	+17:32	64	20m	redo from 5/2/98 30 cents
83	COMP			↑		→ em! pix 2351 et al
84	.51.2223	11:21	+17:30	64	20m	redo from 4/28
85	COMP			↑		



60 inch Telescope Log

Observer: PB

PI: Gretchen K. Kishner & Andrew Ken

Spectrograph: FAST

Grating: 300R

Page: 6254

Date: 5/15/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
86	a1367.51.2344	11:25	+16:44	64	10m	redo from 4/28/98
87	WMP			↑		
88	a1367.3175	11:40	+17:48	64	12m	redo from 3/1/98 2/28
89	WMP			↑		
90	SN 1998ab	12:48	+11:55	2	20m	faint
91	WMP			↑		
92-93	H214	13:21	+36:23	56	2m	
94	WMP			↑		
95	12349 p0501	12:34	+05:01	5	20m	faint for Norm wkem
96	WMP			↑		
97	SN 1998 S172	13:29	+17:02	2	20m	SN
98	WMP			↑		moon's up
99	N4853	12:58	+07:25	56	4m	
100	WMP			↑		
101	N5548	14:15	+25:22	6	3m	
102	WMP			↑		
103	MRK 279	13:51	+64:53	6	3m	
104	WMP			↑		
105	SBS 1425	14:15	+10:39	6	10m	
106	WMP			↑		
107	NG 5307.107	14:45	+13:43	59	12m	redo from 4/17/98 em
108	WMP			↑		
109	3M.124	14:47	+15:39	59	15m	in sup* bmb, 2
110	WMP			↑		all gal looks ok!
111	E 11310	16:22	+58:35	64	5m	
112	WMP			↑		
113	E 11470	16:23	+58:35	64	3m	
114	WMP			↑		
115	E 13211	16:29	+58:25	64	5m	
116	WMP			↑		

60 inch Telescope Log

Observer: PD

PI: Ken

Spectrograph: FAST

Grating: 3WR

Date: 5/15/98

Page: 6255

Number	Object	R.A.	Dec.	L/R	Exp	Comments
117	E164529	16:18	+41:28	64	4m	
118	OMP			↑		
119	E164561	16:18	+41:25	64	4m	
120	OMP			↑		
121	E165212	16:20	+41:28	64	5m	
122	OMP			↑		
123	E180598	16:18	+38:18	64	3m	
124	OMP			↑		
125	E18243	16:18	+38:17	64	8m	
126	OMP			↑		
127	E183820	16:19	+40:58	64	3m	
128	OMP			↑		
129	E183929	16:19	+41:05	64	4m	agg. Sy 2
130	OMP			↑		
131	E192978	16:19	+40:52	64	7m	
132	OMP			↑		
133	E192992	16:19	+40:52	64	3m	
134	OMP			↑		
135	E202537	16:18	+40:33	64	5m	
136	OMP			↑		
137	E211382	16:19	+40:30	64	4m	
138	OMP			↑		
139	E211010	16:19	+40:31	64	15m	fast - good em! p12 236 etc!
140	OMP			↑		
141	E230590	16:19	+37:58	64	4m	* to W bin by 2
142	OMP			↑		
143	E231176	16:20	+38:57	64	4m	
144	OMP			↑		
145	E252858	16:18	+41:29	64	4m	
146	OMP			↑		

60 inch Telescope Log  
 Observer: PB  
 PI: Ken  
 Spectrograph: EAST  
 Grating: 3wL  
 Date: 5/15/98  
 Page: 6256

Number	Object	R.A.	Dec.	L/R	Exp	Comments
147	E 25706	16:19	+38:05	64	4m	
148	COMP			↑		
149	E 259068	16:18	+39:20	64	2m	
150	COMP			↑		
151	E 26136	16:21	+38:09	64	4m	just one galaxy
152	COMP			↑		
153	E 26239	16:21	+38:02	64	5m	
154	COMP			↑		
155	E 26785	16:22	+37:59	64	8m	to E wk; wkem
156	COMP			↑		
157	E 26544	16:22	+38:02	64	5m	
158	COMP			↑		
159	E 26593	16:22	+38:09	64	4m	
160	COMP			↑		
161	E 27102	16:30	+41:29	64	4m	clouds in S+W
162	COMP			↑		
163	E 28757	16:31	+41:29	64	4m	
164	COMP			↑		
165	E 289764	16:20	+41:12	64	10m	bad file? <sup>yes</sup> reds <sup>yes</sup> <sub>→ ccd not read out</sub>
166	COMP			↑		
167	SN1998bp	17:54	+18	2	15m	bright sky
168	COMP			↑	14m	stop - cloudy
169	NG 2981	16:04	+28:09	75	5m	clouds moving in
170	COMP			↑		
171	ZW 2687	16:06	+30:05	75	5m	line just lane
172	COMP			↑		
173	ZW 1745	16:06	+27:51	75	7m	all clouds red
174	COMP			↑		

cannot reach file 165

60 inch Telescope Log

Observer: PB

PI: Paul Green

Spectrograph: FAST

Grating: 3WL

Date: 5/15/98

Page: 6257

Number	Object	R.A.	Dec.	L/R	Exp	Comments
175	Star 1	22.08	+45.31	79	3m	SE+ heavy clouds
176	Star 2	22.08	+45.31	79	5m	NW+
177	Wmp			1		* stopped by clouds * @ twilight 18°
178-187	BEAS				0s	
188-197	FLAT				6s	
198-207	BEAS				0s	only 2
208-217	FLAT				12s	"

60 inch Telescope Log			Spectrograph: <u>FAST</u>			
Observer: <u>CALKINS</u>			Grating: <u>500L</u>		Page: <u>6258</u>	
PI: <u>Kirshner</u>			Date: <u>5/16/96</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0s	Binby 4
11-20	FLATS				6s	
21-30	BIAS				0s	Binby 2
31-40	FLATS				12.5	
41	Feige 34	10:36	43:21	56	90s	Binby 4
42	comp			↑		
43	Feige 34	10:36	43:21	56	90s	clouds
44	comp			↑		
45, 46	SN 1998 bu	10:46	11:50	2	5m	Binby 2
47	comp			↑		unable to get 3rd
48	SN 1998 bu	10:46	11:50	2	5m	exposure - clouds!
49	comp			↑		clouds cleared - yeah!
50	SN 1997 eg	13:11	22:55	2	20m	obscured by clouds
51	comp			↑		(star to the east)
52-55	sky	zenith			2s	Binby 4
56	sky	zenith			1s	
57-66	bias				0s	Binby 4
67-76	flat				6s	
77-86	bias				0s	Binby 2
87-96	flat				12.5	
97-106	DARKS				15m	Binby 2
						Night lost to weather

no comp for skys

For Susan Tokarz  
(Hello!)

60 inch Telescope log Observer: <u>Calkins</u> PI: <u>Kirshner/Barton</u>	Spectrograph: <u>FAST</u> Grating: <u>500 L</u> Date: <u>5/17/98</u>
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Page: 6259

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-5	DARK				15m	Binby 4
6-10	DARK				15m	Binby 2
11-20	BIAS				0s	Binby 4
21-30	FLAT				6s	
31-40	BIAS				0s	Binby 2
41-50	FLAT				12s	
51-55	sky	zenith		57	3s	Binby 4
56	comp			↑		
57, 58	Feige 34	10 39	43 05	56	00s	Great seeing (~1")
59	comp			↑		
60	N4151	12 10	39 24	6	30s	(hunting for holes!)
61	comp			↑		
62	N4258	12 18	47 18	6	2m	
63	comp			↑		
64	MRK 279	13 53	69 18	6	3m	
65	comp			↑		
66	MRK 421	11 04	28 12	6	4m	hampered by clouds 3rd exp. ~3 min after first 2 exp.
67	comp			↑		
68-70	sn1998bu	10 46	11 50	2	5m	Binby 2
71	comp			↑		
72	sn1998bn	12 29	-23 09	2	10m	
73	comp			↑		
74	sn1998s	11 46	47 29	2	10m	(clouds finally make room!)
75	comp			↑		
76	sn1998aq	11 56	55 07	2	10m	
77	comp			↑		
78	sn1998ab	12 48	41 55	2	20m	star to the west
79	comp			↑		
80	hagal 094	10 12	23 05	73	20m	Binby 4
81	comp			↑		

60 inch Telescope Log				Spectrograph: <u>FAST</u>		
Observer: <u>Colkins</u>				Grating: <u>500 L</u>		Page: <u>6260</u>
PI: <u>Barton/Geller/Kenyon</u>				Date: <u>5/17/98</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
82	negal 093	10 12	23 05	73	20m	header is mislabeled
83	comp			↑		exchange negal 93 for negal 99
84	N5548	14 17	25 08	6	3m	star to the west
85	comp			↑		
86	21367-2617	11 42	19 57	64	20m	extremely faint!
87	comp			↑		
88	21367-2657	11 54	20 01	64	20m	another faint one
89	comp			↑		(weather moving in)
90	MRK 501	16 53	39 45	6	5m	in and out of clouds
91	comp			↑		star far to the west
92	162536m2411544	16 25	24 15	#74	5m	correct star?
93	comp			↑		
94	162557m243032	16 26	24 30	74	5m	
95	comp			↑		
96	sn/998bp	17 54	18 20	2	20m	bumped-up exp time
97	comp			↑		due to clouds
98, 99	11244	13 23	36 08	56	90s	seeing has degraded
100	comp			↑		to ~5"
101	N5866	15 06	55 45	57	90s	in & out of clouds
102	comp			↑		(dust lane in center)
103	N5846	15 06	+1 36	57	60s	
104	comp			↑		
105-114	BIAS				0s	Binby 1
115-124	FLAT				6s	
125-134	BIAS				0s	Binby 2
135-144	FLAT				12s	
						stopped by clouds!

60 inch Telescope Log  
 Observer: PBerland  
 PI: Wilkesy Grogan  
 Spectrograph: FAST  
 Grating: 3W2, 3" slit  
 Date: 5/27/98  
 Page: 6273

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIDS				0s	clear skies!
11-20	FLAT				6s	
21-30	BIDS				6s	
31-40	FLAT				12s	looks ok.
41-48	sky				2s	
46	COMP				5s	
47-48	Faye 24	10:36	+43:21	56	90s	
49	COMP			↑		
50	N4151	12:08	+79:41	6	30s	
51	COMP			↑		
52	N4051	12	+	6	2m	
53	COMP			↑		
54	N4258	12	+	6	2m	
55	COMP			↑		
56	N4853	12	+	57	4m	
57	COMP			↑		
58	N5548	14	+	6	3m	
59	COMP			↑		
60	12060p0025	12:08	+10:08	42	6m	
61	COMP			↑		
62	12155p0558	12:18	+08:41	42	6m	
63	COMP			↑		
64	N4566	12:24	+07:21	42	6m	no sup k.
65	COMP			↑		
66	12311p0808	12:33	+07:52	42	12m	weak
67	COMP			↑		
68	12333p0602	12:33	+06:02	42	6m	
69	COMP			↑		
71,72,73	SN1998bu	10:46	+11:50	2	5m	RT system crash
70,74	COMP			↑	12s	

NO BIN BY 4 DARKS!



60 inch Telescope Log

Spectrograph: FAST

Observer: PB

Grating: 302

Page: 6274

PI: Kirsherb Rmes

Date: 5/27/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
75-76	SN1998ef	11:03	+27:58	Z	2m; 5m	non-SN bin by Z ↓
77	COMP			↑		
78-79	H244	13:21	+76	Sc	2m	
80	COMP			↑		
81	SN1998S	11:46	+17:28	Z	11m	
82	COMP			↑		
83	SN1998ce <sub>1</sub>	11:56	+55:07	Z	11m	
84	COMP			↑		
85	SN1998ab	12:48	+41:55	Z	20m	
86	COMP			↑		
87	MRK279	13:51	+69:33	6	3m	
88	COMP			↑		
89	SBS1425	14:25	+60:29	6	10m	
90	COMP			↑		
91	E289764	16:20	+41:12	64	12m	
92	COMP			↑		
93	E290463	16:22	+41:08	64	7m	
94	COMP			↑		
95	E290927	16:23	+41:13	64	15m	
96	COMP			↑		
97	E294512	16:28	+41:15	64	8m	
98	COMP			↑		
99	E294684	16:29	+41:09	64	5m	
100	COMP			↑		
101	E295862	16:30	+41:12	64	6m	
102	COMP			↑		
103	E297991	16:34	+41:20	64	5m	
104	COMP			↑		
105	E299028	16:34	+41:11	64	6m	
106	COMP			↑		

60 inch Telescope Log

Observer: PB  
 PI: Kenny Garcia & Huchra

Spectrograph: FAST  
 Grating: 300R  
 Date: 5/27/98

Page: 6275

Number	Object	R. A.	Dec.	L/R	Exp	Comments
107	E300108	16:35	+11:11	69	4m	
108	COMP			r		
109	162634m24230	16:26	-24:23	74	8m	
110	COMP			r		
111	162641m24405	16:26	-24:40	74	15m	
112	COMP			r		
113	162572m2414	16:27	-24:28	74	15m	
114	COMP			r		
115	162809m24213	16:28	-24:23	74	15m	
116	COMP			r		
117, 118, 119	XTE 2012p 3008	20:12	+38:08	65	3m, 12m	V. red. 120 = 5x
119	COMP			r		1:15
121	2M173537.6	17:35	+21:47	68	4m	
122	COMP			r		
123	2M173532.2	17:35	+21:48	68	4m	
124	COMP			r		
125	2M180305.8	18:03	+19:09	68	4m	
126	COMP			r		
127	2M180301.3	18:03	+20:37	68	5m	*'s to E
128	COMP			r		
129	2M173533.7	17:35	+20:47	68	4m	Sy 2
130	COMP			r		
131	2M173535.4	17:35	+18:56	68	10m	bimby 2; * 2" to E of gal has em; high cz gal
132	COMP			r		* to W
133	2M174533.4	17:45	+23:40	68	4m	
134	COMP			r		
135	2M174538.5	17:45	+18:52	68	5m	
136	COMP			r		
137	2M180304.9	18:03	+19:59	68	7m	
138	COMP			r		

60 inch Telescope Log

Observer: PB

PI: Huchra/Kirshner/Grover

Spectrograph: FAST

Grating: 30R

Date: 5/27/96

Page: 6276

Number	Object	R. A.	Dec.	L/R	Exp	Comments
139	ZM174534.4	17:45	+20:47	68	7m	
140	COMP			↑		
141	ZM180314.5	18:03	+22:56	68	6m	to E
142	COMP			↑		
143	ZM180312.2	18:03	+20:20	68	10m	
144	COMP			↑		
145	ZM174541.5	17:45	+20:40	68	12m	
146	COMP			↑		
147	ZM173550.6	17:35	+22:58	68	12m	
148	COMP			↑		
149	ZM180254.9	18:02	+20:18	68	12m	
150	COMP			↑		
151	ZM180300.7	18:03	+19:59	68	15m	
152	COMP			↑		
153	SN1998bp	17:54	+18:19	2	15m	
154	COMP			↑		
155	KTE 2012	20:12	+38:08	65	15m	very red.
156	COMP			↑		
157	N7469	23:03	+08:52	6	25m	
158	COMP			↑		
159	MRK509	20:41	+10:54	6	3m	
160	COMP			↑		
161-162	HD 92281			56	5s	
164	COMP			↑		
165-174	BSPS				0s	
175-184	FLAT				6s	
185-194	BSPS				0s	
195-204	FLAT				17s	
205-214	DARKS				15m	

60 inch Telescope Log  
 Observer: P. Berlind  
 PI: Grigori

Spectrograph: FAST  
 Grating: 3000  
 Date: 5/28/98

Page: 6277

Number	Object	R.A.	Dec.	L/R	Exp	Comments
15	DARK				15m	bm by 2
6-15	BIAS				03	
16-25	FLAT				63	
26-35	BIAS				03	Clear skies overhead
36-45	FLAT				125	circms to W
46-50	SKY			S7	25	
51	COMP			T	53	
52-53	F43734	10:36	+43:21	S6	90s	
54	COMP			T		
55	MRK421	11:01	+38:12	6	4m	
56	COMP			T		
57	N4448B	12:30	+12:25	S7	5m	
58	COMP			T		
59	12340 p0627	12:36	+06:10	42	5m	
60	COMP			T		
61	12433 m0124	12:45	-01:40	42	4m	
62	COMP			T		
63	11594 p0658	12:01	+06:41	42	4m	
64	COMP			T		
65	13011 p0327	13:03	+03:11	42	5m	
66	COMP			T		
67	13251 p042	13:25	+0:12	42	5m	
68	COMP			T		
69	COMP			T		
70,71,72	SN1998bz	10:46	+11:50	2	5m	
73	COMP			T		
74	SN1998bz	11:56	+55:07	2	11m	
75	COMP			T		
76,77	H244	13:21	+36:23	S6	2m	
78	COMP			T		

60 inch Telescope Log

Observer: PB  
 PI: DK

Spectrograph: FAST

Grating: 3W

Page: 6278

Date: 6/28/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
79	SN 1997eg	13:11	+22:55	Z	20m	
80	COMP			↑		
81	MRK 279	13:51	+69:33	6	3m	
82	COMP			↑		
83	NSS 48	14:15	+25:22	6	3m	
84	COMP			↑		
85	mkws_001	14:00	-02:51	35	3m	
86	COMP			↑		
87	002	14:00	-03:12	35	2.5m	
88	COMP			↑		
89	003	13:59	-02:23	35	2.5m	
90	COMP			↑		
91	004	14:00	-02:48	35	5m	
92	COMP			↑		
93	005	14:00	-02:28	35	4m	
94	COMP			↑		
95	006	14:00	-02:39	35	4m	
96	COMP			↑		
97	007	14:00	-02:28	35	5m	
98	COMP			↑		
99	009	14:00	-02:54	35	5m	* to far W
100	COMP			↑		
101	010	14:00	-02:52	35	4m	
102	COMP			↑		
103	011	14:00	-02:49	35	5m	
104	COMP			↑		
105	012	13:59	-03:03	35	8m	em
106	COMP			↑		
107	013	13:59	-03:02	35	10m	LSB em
108	COMP			↑		

60 inch Telescope Log

Observer: PB

PI: DK

Spectrograph: FAST

Grating: 3002

Page: 6279

Date: 5/28/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
109	mkws_014	13:58	-02:48	35	5m	
110	COMP			↑		
111	015	14:01	-02:42	35	12m	em
112	COMP			↑		
113	016	13:59	-03:10	35	5m	
114	COMP			↑		
115	017	13:58	-02:37	35	5m	
116	COMP			↑		
117	018	13:59	-03:05	35	5m	wk
118	COMP			↑		
119	019	14:01	-02:26	35	7m	
120	COMP			↑		
121	020	14:00	-02:58	35	7m	
122	COMP			↑		
123	mkw7_001	14:33	+03:57	35	3m	
124	COMP			↑		
125	002	14:33	+03:41	35	6m	
126	COMP			↑		
127	003	14:35	+03:33	35	3m	
128	COMP			↑		
129	004	14:33	+03:56	35	3m	
130	COMP			↑		
131	005	14:33	+03:40	35	3m	
132	COMP			↑		
133	006	14:34	+03:39	35	3m	
134	COMP			↑		
135	007	14:35	+03:41	35	4m	
136	COMP			↑		
137	008	14:33	+03:44	35	4m	
138	COMP			↑		

60 inch Telescope Log  
 Observer: PB  
 PI: Rinesh/beller

Spectrograph: FAST  
 Grating: 312  
 Date: 5/28/98

Page: 6280

Number	Object	R. A.	Dec.	L/R	Exp	Comments
139	MKW7.09	14:31	+03:54	35	5m	
140	COMP			↑		
141	010	14:34	+03:78	35	6m	
142	COMP			↑		
143-4	AG Dra	16:01	16:48	12	2, 20s	
144	COMP			↑		
146	E307696	16:19	+40:52	69	9m	gal to W
147	COMP			↑		
148	E308147	16:20	+40:58	69	4m	
149	COMP			↑		
150	E309631	16:23	+41:04	69	4m	AGN Sy 1
151	COMP			↑		
152	E31034	16:24	+41:01	69	4m	
153	COMP			↑		
154	E310267	16:25	+40:55	69	5m	WK
155	COMP			↑		
156	E310335	16:25	+40:53	69	90s	
157	COMP			↑		
158	E310677	16:25	+41:01	69	5m	
159	COMP			↑		
160	E310935	16:26	+41:03	69	5m	
161	COMP			↑		
162	E311261	16:26	+41:05	69	50s	
163	COMP			↑		
164	E312039	16:27	+41:04	69	3m	
165	COMP			↑		
166	E312098	16:27	+40:56	69	4m	
167	COMP			↑		
168	E312197	16:27	+40:58	69	6m	
169	COMP			↑		

60 inch Telescope Log

Observer: PB  
 PI: Ken & Jeff

Spectrograph: FAST  
 Grating: 3002  
 Date: 5/28/98

Page: 6281

Number	Object	R.A.	Dec.	L/R	Exp	Comments
170	E 312376	16:28	+40:58	64	4m	
171	COMP			↑		
172	E 312396	16:28	+40:56	64	5m	
173	COMP			↑		
174	E 312914	16:29	+40:59	64	3m	
175	COMP			↑		
176	E 316412	16:35	+40:59	64	8m	
177	COMP			↑		
178	SN1998bp	17:54	+18:19	2	15m	
179	COMP			↑		
180	COMP			↓		1.1" Slit
181/182	4111907p09	19:09	+07:49	77	15m	22 McClintock
183	COMP			↑		
184/185	H12230579	19:01	+11:01	77	25s	
186	COMP			↑		
187/188	FLAT			77	20s	
195	E 325579	16:21	+40:48	64	9m	3" Slit
196	COMP			↑		
197	E 326736	16:23	+40:51	64	3m	
198	COMP			↑		
199	E 327119	16:25	+40:50	64	4m	
200	COMP			↑		
201	E 327876	16:26	+40:44	64	5m	
202	COMP			↑		
203	E 328285	16:26	+40:54	64	3m	
204	COMP			↑		
205	E 32863	16:19	+37:54	64	5m	
206	COMP			↑		



60 inch Telescope Log

Observer: PB

PI: Ken

Spectrograph: FAST

Grating: 300

Date: 5/28/98

Page: 6282

Number	Object	R.A.	Dec.	L/R	Exp	Comments
207	E 328768	16:27	+40:48	64	4m	quick
208	COMP			↑		
209	E 329135	16:27	+40:55	64	3m	
210	COMP			↑		
211-212	CIC <sub>cap</sub>	19:50	+35:41	12	30s, 1s	
213	COMP			↑		clear @ dawn
214-216	HD 92281	20:10	+40:07	56	5s	hazy
217	COMP			↑		
218-227	BIAS				0s	
228-237	FLAT				6s	
238-247	BIAS				0s	
248-257	FLAT				12s	
258-262	DARK				15m	bin by 4



60 inch Telescope Log  
 Observer: P Berlin  
 PI: Carter  
 Spectrograph: FAST  
 Grating: 300  
 Date: 5/29/98  
 Page: 6283

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-5	DARK				15m	
6-15	TRIP				0s	
16-25	FLAT				6s	
26-35	TRIP				0s	bmbg 2
36-45	FLAT				12s	"
46-50	sky			57	2s	circus all over
51	comp			↑		
52-53	Felix 34	10:36	+43:21	56	10s	
54	comp			↑		
55	N4151	12:08	+39:41	6	30s	
56	comp			↑		
57	N4258	12:16	+47:39	6	2m	
58	comp			↑		
59	N4486B	12:30	+12:29	57	5m	
60	comp			↑		
61	N5548	14:15	+25:22	6	3m	
62	comp			↑		
63	Z011096	13:02	+27:51	75	3m	
64	comp			↑		
65	Z002680	13:03	+28:01	75	10s	
66	comp			↑		
67	Z006258	13:03	+28:01	75	4m	
68	comp			↑		
69	Z005886	13:03	+28:35	75	3m	
70	comp			↑		
71	Z013759	13:03	+26:33	75	5m	
72	comp			↑		
73	Z000766	13:03	+28:11	75	10s	
74	comp			↑		



## 60 inch Telescope Log

Observer: PBPI: Kirshner & KuranyiSpectrograph: FASTGrating: 300Page: 6284Date: 5/29/98

Number	Object	R. A.	Dec.	L/R	Exp	Comments
75	WMP			L		thin clouds
76, 77, 78	SN 1986b	10:46	+11:50	Z	5m	
79	WMP			↑		
80	SN 1985	11:46	+17:28	Z	15m	
81	WMP			↑		
82-83	H244	13:21	+36	S6	2m	
84	WMP			↑		
85	mKWS-021	13:59	-03:05	35	15m	Wk em - yes - pri 2.126 Ha
86	WMP			↑		
87	mKWS-022	14:01	-03:09	35	15m	
88	WMP			↑		
89	mKWS-011	14:34	+03:44	35	3m	
90	WMP			↑		
91	012	14:34	+03:17	35	5m	
92	WMP			↑		
93	013	14:34	+03:20	35	4m	
94	WMP			↑		
95	014	14:35	+03:46	35	3m	bin by Z; * to E
96	WMP			↑		
97	015	14:35	+03:41	35	5m	
98	WMP			↑		
99	016	14:34	+03:47	35	5m	
100	WMP			↑		
101	017	14:35	+03:50	35	5m	
102	WMP			↑		
103	018	14:34	+03:54	35	5m	
104	WMP			↑		
105	019	14:35	+03:58	35	5m	
106	WMP			↑		



60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>6285</u>
Observer: <u>PB</u>		Grating: <u>300</u>		Date: <u>5/29/98</u>		
PI: <u>Kenny/Kenyon</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
107	MKW7-020	14:32	+03:53	35	8m	wk em
108	WMP			↑		
109	-021	14:33	+03:34	35	9m	
110	WMP			↑		
111	-022	14:34	+03:18	35	9m	
112	WMP			↑		
113	024	14:33	+03:47	35	8m	
114	WMP			↑		
115	023	14:33	+03:55	35	9m	
116	WMP			↑		
117	025	14:32	+03:16	35	10m	wk ? weak H $\alpha$ ? red clouds.
118	WMP			↑		
119	162554m241743	16:28	-24:47	74	12m	
120	WMP			↑		
121	ROXR1m24	16:26	-24:20	74	7m	
122	WMP			↑		
123	ROXR1m2	16:25	-24:26	74	4.5s	
124	WMP			↑		
125	ROXR1m38A	16:27	-24:19	74	7m	
126	WMP			↑		
127	ROXR1m4A	16:25	-24:43	74	6m	
128	WMP			↑		
129	ROXR1m3A	16:26	-24:13	74	12m	
130	WMP			↑		
131	ROXR1m53	16:27	-24:25	74	8m	
132	WMP			↑		
133	ROXR1m8	16:25	-24:39	74	11m	
134	WMP			↑		
135	MEK501	16:53	+34:45	6	4m	
136	WMP			↑		

60 inch Telescope Log

Observer: PB

PI: Rimesh Geller

Spectrograph: FAST

Grating: 300

Date: 5/29/98

Page: 6286

Number	Object	R.A.	Dec.	L/R	Exp	Comments
137	E 328555	16:26	+40:51	64	10m	clouds
138	COMP			↑		
139	E 328642	16:27	+40:54	64	10m	
140	COMP			↑		
141	E 329137	16:27	+40:52	64	10m	
142	COMP			↑		
143	E 329503	16:28	+40:54	64	5m	* to W
144	COMP			↑		
145	E 329532	16:28	+40:51	64	5m	
146	COMP			↑		
147	E 329863	16:28	+40:53	64	11m	
148	COMP			↑		
149	E 330840	16:30	+40:47	64	7m	
150	COMP			↑		
151	E 330862	16:30	+40:52	64	5m	
152	COMP			↑		
153	E 331042	16:30	+40:55	64	6m	
154	COMP			↑		
155	E 331388	16:30	+37:47	64	3m	
156	COMP			↑		
157	E 331406	16:30	+40:55	64	4m	
158	COMP			↑		
159	E 335094	16:37	+40:52	64	5m	
160	COMP			↑		
161	E 335137	16:37	+40:52	64	6m	
162	COMP			↑		
163	E 337628	16:22	+37:50	64	5m	
164	COMP			↑		
165	E 33816	16:22	+37:58	64	6m	
166	COMP			↑		

60 inch Telescope Log  
 Observer: PB  
 PI: Rmes

Spectrograph: FAST  
 Grating: 3WL  
 Date: 5/29/98

Page: 6287

Number	Object	R.A.	Dec.	L/R	Exp	Comments
167	E33874	16:22	F57-56	64	4m	
168	WMP			↑		
169	E34005	16:23	F57-49	64	6m	
170	WMP			↑		
171	E341818	16:18	H0-33	64	5m	
172	WMP			↑		
173	E34225	16:24	F57-49	64	9m	
174	WMP			↑		
175	E342832	16:21	H0-35	64	8m	
176	WMP			↑		
177	AGDm	18:01	H648	12	20, 25	
179	WMP			↑		circus all over
180	3C390.3	18:45	F71	6	12m	⊙ Jawn
181	WMP			↑		
182	Star	22:08	H531	79	10m	
183	WMP			↑		
184	Bellac	22:02	H216	6	4m	
185	WMP			↑		
186-188	CIClyx	19:50	F541	12	30, 45, 15	
189	WMP			↑		
190-192	H191281	20:10	H40	56	5s	
193	WMP			↑		
194	XTE2012p3308	20:12	F5808	65	6m	v. red, wk
195	WMP			↑		
196-205	BDB				0s	
206-215	FLAT				6s	
216-225	BDB				0s	
226-235	FLAT				12s	

60 inch Telescope Log

Observer: CALKINSPI: Kirchner, CarterSpectrograph: FASTGrating: 300 LPage: 6288Date: 5/30/98

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-12	DARKS				15m	Binby 4
13-22	BIAS				0s	
23-32	FLATS				6s	
33-42	BIAS				0s	BINARY 2
43-52	FLATS				12s	
53-57	sky			57	2c	Binby 4
58	comp			↑		
59	Feige 34	10 39	43 06	#56	100s	
60	comp			↑		
61	NGC 48	19 17	25 07	#6	3m	
62	comp			↑		
63	MRK 219	13 53	69 18	#6	3m	
64	comp			↑		
65	N4051	12 03	49 31	#6	2m	High cirrus
66	comp			↑		
67	N4853	12 58	27 35	#57	7m	
68	comp			↑		
69	Feige 34	10 39	43 06	#56	100s	
70	comp			↑		
71-73	SN 1998 bu	10 46	11 50	#2	5m	Binby 2
74	comp			↑	12s	
75	SN 1998 ag	11 56	55 07	#2	10m	increased exposure due to clouds
76	comp			↑		
77, 78	H 244	13 23	36 07	#56	2m	
79	comp			↑		
80	2013796	14 57	27 25	#75	8m	
81	comp			↑		
82	2013797	14 59	26 36	#75	15m	star to the east
83	comp			↑		
84	2010063	15 04	28 30	#75	10m	star to the east

60 inch Telescope Log		Spectrograph: <u>FAST</u>		Page: <u>6289</u>		
Observer: <u>CALKINS</u>		Grating: <u>300 L</u>		Date: <u>5/30/98</u>		
PI: <u>CALTER, BARTON</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
85	comp			↑		
86	2005419	15 04	27 47	#75	4m	
87	comp			↑		
88	2010064	15 04	26 58	#75	5m	bright star to sw
89	comp			↑		
90	2000945	14 57	29 58	#75	12m	star to the west
91	comp			↑		
92	nopt-441	15 35	39 46	#73	3m	
93	comp			↑		
94	nopt-442	15 36	39 50	#73	4m	bright star to the west
95	comp			↑		
96	nopt-443	15 35	43 29	#73	2m	
97	comp			↑		
98	nopt-444	15 36	43 30	#73	4m	
99	comp			↑		
100	nopt-447	15 38	26 15	#73	5m	
101	comp			↑		
102	nopt-449	15 40	28 21	#73	4m	
103	comp			↑		
104	nopt-450	15 40	28 22	#73	4m	
105	comp			↑		
106	nopt-451	15 42	23 47	#73	5m	
107	comp			↑		
108	nopt-452	15 42	23 46	#73	5m	star to the east
109	comp			↑		
110	nopt-453 + 454	15 49	20 48	#73	8m	nopt-454 is to the east
111	comp			↑		
112	nopt-455	15 52	21 06	#73	5m	beautiful barred spiral
113	comp			↑		
114	nopt-456	15 53	21 04	#73	4m	

112 - emission present, but don't pick it up with TRACE - get nuclear only



60 inch Telescope Log  
 Observer: Calkins  
 PI: Barton, Kirchner, McIntock,  
 Spectrograph: FAST  
 Grating: 300 L  
 Date: 5/30/98  
 Page: 6290

Number	Object	R.A.	Dec.	L/R	Exp	Comments
115	comp			↑		
116	no991-457	15 56	41 53	#73	4m	
117	comp			↑		
118	no991-458	15 56	41 54	#73	6m	
119	comp			↑		
120	no991-459	15 56	20 45	#73	10m	
121	comp			↑		
122	no991-462	15 59	41 28	#73	15m	star to the east
123	comp			↑		clouds returning
124	no991-463	16 00	41 29	#73	5m	star to the SW
125	comp			↑		
126	no991-466	16 04	14 46	#73	5m	
127	comp			↑		
128	sn1998bp	17 54	18 20	#2	22m	barely discernable
129	comp			↑		Binby 2
130	comp			↓		Binby 4, 1.1 slit
131	441907p09	19 09	09 49	#77	15m	
132	441907p09	19 09	09 49	#77	15m	
133	comp			↑		
134	HD230579	19 04	11 06	#77	25s	
135	comp			↑		
136-142	FLAT			#77	20s	
143	E343327	16 22	40 29	#64	6m	3" slit
144	comp			↑		
145	E343777	16 23	40 40	#64	10m	
146	comp			↑		
147	E34420	16 25	37 51	#64	6m	
148	comp			↑		
149	E344279	16 25	40 31	#64	10m	
150	comp			↑		

60 inch Telescope Log  
 Observer: Calkins  
 PI: RINES

Spectrograph: FAST  
 Grating: 3002 L  
 Date: 5/31/98 5/30/98 (be) Page: 6291

Number	Object	R.A.	Dec.	L/R	Exp	Comments
151	E34472	16 25	37 56	#64	3m	
152	comp			↑		
153	E345105	16 26	40 41	#64	3m	
154	comp			↑		
155	E34528	16 25	37 51	#64	4m	
156	comp			↑		
157, 158	HD192281	20 10	40 00	#5.6	5s	
159	comp			↑		
160-162	CIC yg	19 50	35 40	#12	20s	
163	comp			↑		
164-173	BIAS				0s	Binby 4
174-183	FLATS				6s	
184-193	BIAS				0s	Binby 2
194-203	FLATS				12s	
204-213	DARKS				15m	Binby 2

60 inch Telescope Log  
 Observer: CALKINS  
 PI: Kirschner, Koranyi  
 Spectrograph: FAST  
 Grating: 300 L  
 Date: 5/31/98  
 Page: 6292

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0s	BINBY 4
11-20	FLAT				6s	
21-30	BIAS				0s	BINBY 2
31-40	FLAT				12s	
41-50	DARKS				15m	BINBY 4
51-55	sky			#57	2s	
56	comp	OUT OF	FOCUS	L ↑		Late start due
57, 58	Feige 34	10 39	43 06	#56	90s	to "stuck" comp
59	comp			↑		mirror, w/ outage
60	N4151	12 08	39 41	#6	30s	
61	comp			↑		
62	N4258	12 18	47 18	#6	2m	
63	comp			↑		
64	MRK 279	13 53	69 18	#6	3m	
65	comp			↑		
66	N5548	14 15	25 22	#6	3m	
67	comp	1000	NG	P		13:50:25 +19:17:59
68-70	sn1998bu	10 46	11 50	#2	5m	BINBY 2
71	comp			↑		
72	sn1998s	11 46	47 28	#2	10m	
73	comp			↑		
74	sn1998ab	12 48	41 55	#2	20m	barely Discernable
75	comp			↑		
76, 77	HZ 44	13 23	36 07	#56	90s	
78	comp			↑		
79	N5866	15 06	55 45	#57	30s	dust lane
80	comp			↑		
81	mkn7-027	14 53	3 42	#35	10m	
82	comp			↑		
83	mkn7-028	14 32	3 46	#35	20m	

used comp file 67 anyway as file 66  
 doesn't need a good  $\lambda$  solution

DIFFERENCE IN FLAT SIGNAL FROM BEGINNING TO  
 END OF NIGHT GIVING INCORRECT CHIP-GAIN CALC.

COULD NOT USE SKYS FOR VELOCITY MEASUREMENTS;  
 COMP IS OUT OF FOCUS!

60 inch Telescope Log  
 Observer: Callins  
 PI: Koranyi, Barton  
 Spectrograph: FAST  
 Grating: 300L  
 Date: 5/21/98  
 Page: 6293

Number	Object	R.A.	Dec.	L/R	Exp	Comments
84	comp			↑		
85	mkw7-029	14 33	3 48	#35	15m	
86	comp			↑		
87	mkw7-030	14 34	4 13	#35	15m	
88	comp			↑		
89	mkw7-031	14 34	3 53	#35	10m	
90	comp			↑		
91	mkw7-032	14 33	4 09	#35	10m	star to the west
92	comp			↑		
93	ngc4-464	16 02	41 12	#73	18m	galaxy to the west
94	comp			↑		
95	ngc4-465	16 02	41 12	#73	15m	
96	comp			↑		
97	ngc4-467-468	16 04	17 44	#73	12m	ngc4-468 is to the "east" on slit (PA=3)
98	comp			↑		
99	ngc4-469	16 04	14 48	#73	8m	star to the east
100	comp			↑		
101	ngc4-470	16 04	14 07	#73	12m	star to the east
102	comp			↑		
103	ngc4-471	16 05	14 07	#73	20m	
104	comp			↑		
105	ngc4-474-475	16 05	20 32	#73	8m	unable to separate
106	comp			↑		
107	ngc4-476	16 05	17 35	#73	11m	star to the west
108	comp			↑		
109	ngc4-480	16 23	37 56	#73	8m	
110	comp			↑		
111	ngc4-481	16 23	37 55	#73	4m	star in slit to the east
112	comp			↑		
113	ngc4-482	16 28	32 50	#73	7m	

60 inch Telescope Log  
 Observer: Calkins  
 PI: BARTON  
 Spectrograph: FAST  
 Grating: 300L  
 Date: 5/31/98  
 Page: 6294

Number	Object	R.A.	Dec.	L/R	Exp	Comments
114	comp			↑		
115	negal-484	16 28	32 50	73	7m	
116	comp			↑		
117	negal-486	16 52	30 42	73	7m	Binby 2, star to the west
118	comp			↑		
119	negal-487	16 52	30 43	73	12m	Binby 4
120	comp			↑		
121	negal-488	16 57	40 43	73	7m	
122	comp			↑		
123	negal-489	16 57	40 42	73	7m	
124	comp			↑		
125	negal-490	17 00	23 02	73	5m	
126	comp			↑		
127	negal-491	17 00	23 00	73	4m	
128	comp			↑		
129	XTE2012p	20 12	38 10	#65	20m	star to the west
130	comp			↑		
131	E345406	16 27	40 40	#64	8m	
132	comp			↑		
133	E346297	16 29	40 31	#64	5m	
134	comp			↑		
135-137	CICy9	19 50	35 40	#72	45s	
138	comp			↑		
139-141	HD192281	20 12	40 15	#56	5s	
142	comp					
143-152	BEAS				0s	BINBY 4
153-162	FLAT				6s	
163-172	BEAS				0s	BINBY 2
173-182	FLAT				12s	
183-192	DARKS				15m	