

FAX: to Susan Tokarz  
pg 1 of 3

UV FLOOD  
this an  
obvious  
★ Start of FAST Run

60 inch Telescope Log		Spectrograph: <u>FAST</u>		Page: <u>7325</u>		
Observer: <u>P Berlin</u>		Grating: <u>3002</u>		Date: <u>5/5/99</u>		
PI: <u>Andi</u>						
Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0s	late start; new
11-20	FLAT				7s	ccd flood; high
21-30	BIAS				0s	dark current
31-40	FLAT				14s	last 500 pixels
41-42	DARK				5m	
43-44	DARK				5m	
45-46	F09234	10:36	+43	S6	90s	→ spec out of focus
47	COMP			↑		
48-52	test					focus = 1160
53-55	SN1999by	09:21	+57:40	Z	5m	PA=100
56	COMP			↑		
57	nrqs/10.106	10:57	+10:39	S9	10m	
58	COMP			↑		clear; windy
59	.122	10:59	+10:49	S9	6m	
60	COMP			↑		
61	.123	10:59	+10:47	S9	6m	
62	COMP			↑		
63,64	H244	13:21	+36:23	S6	2m	PA=90
65	COMP			↑		
66	nrqs/10.121	10:59	+10:04	S9	5m	
67	COMP			↑		
68	.126	10:59	+10:05	S9	6m	
69	COMP			↑		
70	.127	10:59	+10:04	S9	6m	
71	COMP			↑		
72	.128	10:59	+10:23	S9	12m	
73	COMP			↑		
74	.141	11:02	+10:33	S9	3m	
75	COMP			↑		

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>7326</u>	
Observer: <u>PB</u>			Grating: <u>300L</u>			
PI: <u>Ken R.</u>			Date: <u>6/5/99</u>			
Number	Object	R. A.	Dec.	L/R	Exp	Comments
76	SN1999bz	14:01	+68:52	Z	20m	PA=01
77	COMP			↑		
78	Mrsgb 177,289	12:02	+22:06	S9	12m	
79	COMP			↑		
80	.290	12:02	+22:09	S9	6m	
81	COMP			↑		windy
82	.291	12:02	+22:08	S9	7m	
83	COMP			↑		
84	.292	12:02	+22:48	S9	11m	
85	COMP			↑		
86	.303	12:03	+22:14	S9	12m	
87	COMP			↑		
88	.307	12:03	+22:25	S9	12m	
89	COMP			↑		
90	α2199c, 023	16:12	+40:14	64	7m	
91	COMP			↑		
92	.024	16:12	+39:03	64	12m	wk
93	COMP			↑		
94	.026	16:12	+39:06	64	12m	
95	COMP			↑		
96	.028	16:13	+39:08	64	12m	
97	COMP			↑		
98	.029	16:13	+39:13	64	12m	
99	COMP			↑		
100	.030	16:13	+39:31	64	12m	
101	COMP			↑		
102	.031	16:13	+39:39	64	12m	
103	COMP			↑		
104	.042	16:16	+39:47	64	8m	
105	COMP			↑		

60 inch Telescope Log

Observer: PD  
 PI: Ken

Spectrograph: FAST  
 Grating: 2002  
 Date: 5/5/99

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Number	Object	R. A.	Dec.	L/R	Exp	Comments
106	921992.039	16:16	+41:48	69	15m	
107	COMP			↑		
108	.043	16:16	+38:31	69	7m	
109	COMP			↑		
110	.044	16:16	+37:26	69	10m	
111	COMP			↑		
112	+041	16:16	+42:49	69	10m	
113	COMP			↑		
114	.040	16:16	+38:01	69	6m	
115	COMP			↑		
116	.045	16:16	+41:22	69	8m	
117	COMP			↑		
118	SN1999be	19:01	+40:44	2	15m	pec.
119	COMP			↑		
120-122	FIDM2201	20:10	+40	56	48	
123	COMP			↑		clear @ dawn.
124-125	BIAS				05	
134-143	FLAT				73	
144-153	BIAS				08	
154-163	FLAT				145	
164-173	DARK				15m	

60 inch Telescope Log

Spectrograph: FASTObserver: GALINSGrating: 3000Page: 7328PI: All, Kirshner, MahdaviDate: 5/6/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	BINDY 2
11-20	BIAS				0s	BINDY 4
21-30	FLAT				6s	
31-40	BIAS				0s	BINDY 2
41-50	FLAT				12s	
51-55	sky			#57	2h	
56	comp			↑		
57	Feige 66	12 37	25 03	#56	30s	
58	comp			↑		
59	Feige 66	12 37	25 03	#56	30s	PA = 68.0°
60	comp			↑		
61-62	sn1999by	9 21	50 59	#2	11m	PA = 190°, Bright!!
63	comp			↑		
64	sn1999aa	8 27	21 29	#2	15m	PA = 65°
65	comp			↑		
66-68	sn1998s	11 46	47 28	#2	20m	PA = 0°
69	comp			↑		
70	sn1999ca	10 05	-34 12	#2	20m	PA = 90°, High sec
71	comp			↑		
72	nrqb177.266	11 59	20 29	#59	20m	
73	comp			↑		
74	nrqb177.268	12 00	20 46	#59	15m	
75	comp			↑		
76	nrqb177.269	12 00	20 14	#59	20m	
77	comp			↑		
78	nrqb177.271	12 01	20 02	#59	20m	
79	comp			↑		
80	nrqb177.274	12 01	21 01	#59	20m	
81	comp			↑		
82	nrqb177.279	12 01	20 11	#59	17m	

82 large cosmic on top of 3707 emission

60 inch Telescope Log				Spectrograph: <u>FAST</u>		
Observer: <u>CALKINS</u>				Grating: <u>3000</u>		Page: <u>7329</u>
PI: <u>FALCO, RINEH, KIRCHNER, KENYON</u>				Date: <u>5/6/99</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
83	comp			↑		
84	14318p4018	14 33	40 05	±60	3.5m	
85	comp			↑		
86	14356p7345	14 35	73 31	±60	3m	
87	comp			↑		
88	14341p1009	14 36	09 56	±60	7m	
89	comp			↑		
90	14391p5344	14 40	53 20	±60	3m	AGN
91	comp			↑		
92	I1037-15.0	14 38	18 11	±60	2m	
93	comp			↑		
94	14355p1605	14 37	15 51	±60	5m	
95	comp			↑		
96	14341p0324	14 36	3 11	±60	15m	
97	comp			↑		
98	a2199c.021	16 12	38 14	±64	20m	
99	comp			↑		
100	sn1999ac	16 07	07 58	±2	15m	PA = 0°
101	comp			↑		
102	a2199special	16 20	39 51	±64	20m	PA = 45° aka: "E389103"
103	comp			↑		
104	a2199friend	16 20	39 51	±64	20m	in "ken limit"
105	comp			↑		PA = 50° (special
106	a2199c.047	16 16	35 50	±64	20m	request - too faint for a redo!!)
107	comp			↑		
108	BD2123873	14 16	-21 45	±12	5m	star east
109	comp			↑		
110, 111	UKSGel	16 15	-22 11	±12	5m, 10m	-0- ? ✓ star
112	comp			↑		
113, 114	HD154791	17 06	23 58	±12	16, 19	

8.

60 inch Telescope Log

Observer: CALVENS

PI: Pines, Andrea, All

Spectrograph: FAST

Grating: 300L

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Date: 5/6/99

Number	Object	R. A.	Dec.	L/R	Exp	Comments
115	comp			↑		
116	22199.25970	16 20	38 06	↑ T <sub>64</sub>	20m	object east
117	comp			↑		
118	22199.272841	16 22	41 27	↑ T <sub>64</sub>	17m	
119	comp			↑		
120	2M165443.9p	16 54	17 21	↑ T <sub>68</sub>	6m	
121	comp			↑		
122	2M165544.2p	16 55	16 46	↑ T <sub>68</sub>	5m	
123	comp			↑		
124	NS866	15 06	55 46	↑ T <sub>57</sub>	2m	
125	comp			↑		
126	HD192281	20 10	40 07	↑ T <sub>56</sub>	4s	
127	comp			↑		
138-157	BIAS				0s	
138-147	FLAT				6s	
148-157	BIAS				0s	
158-167	FLAT				12s	
168-177	DARK				15m	BENBY 4

60 Inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>2331</u>	
Observer: <u>CALKINS</u>			Grating: <u>3006</u>			
PI: <u>All, Kirchner, Mahdavi</u>			Date: <u>5/7/99</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BIAS				0s	
21-30	FLAT				10s	
31-40	BIAS				0s	
41-50	FLAT				12s	
51-60	FLAT, blue				13s	tilt = 585
61-70	FLAT, red	w/SK R	filter		17s	tilt = 725 w/filter
71-75	sky			#57	5s	
76	comp			↑		
77	N3377	10 47	13 58	#57	90s	
78	comp			↑		
79	Feige 66	12 37	25 04	#56	40s	
80	comp			↑		
81	Feige 66	12 37	25 04	#56	40s	PA=66°
82	comp			↑	12s	
83	Feige 66, blue	12 37	25 04	#56	40s	PA=66°, Tilt=585
84	comp			↑	13s	
85	Feige 66, red	12 37	25 04	#56	40s	PA=66°, Tilt=725, w/filter
86	comp			↑	17s	
87	sn1999by, red	9 21	51 00	#2	8m	PA=49°, Tilt=725, w/filter
88	comp			↑	12s	⌊ forgot to change comp!!
89	sn1999by	9 21	51 00	#2	8m	PA=49°, Tilt=610
90	comp			↑	12s	
91	sn1999by, blue	9 21	51 00	#2	8m	PA=49°, Tilt=585
92	comp			↑	13s	
93	sn1999bg	12 04	62 30	#2	15m	3" slit!! PA=0°
94	comp			↑		
95	argb177.285	12 02	20 13	#59	20m	PA=90° not enough
96	comp			↑		
97	argb177.293	12 02	20 01	#59	20m	↓

DARKS STILL HIGH

REDUCED IN 4 SETS:

SET 1 files 75-81 and 89

Set 2 files 93 - end

blue + red

DID NOT TRIM DATA; SOME FILES NEEDED IT - OTHERS DID NOT. P.01 PIS WILL HAVE TO TRIM IF NECESSARY

<p>60 inch Telescope Log</p> <p>Observer: <u>CALKINS</u></p> <p>PI: <u>Mahdavi, Rines</u></p>	<p>Spectrograph: <u>FAST</u></p> <p>Grating: <u>300 L</u></p> <p>Date: <u>5/7/99</u></p>
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
98	comp			↑		
99	nrqb177.294	12 02	20 13	#59	20m	PA = 90°
100	comp			↑		
101	nrqb177.295	12 02	20 43	#59	15m	bright object east
102	comp			↑		
103	nrqb177.296	12 02	20 12	#59	20m	PA = 90°
104	comp			↑		
105	nrqb177.297	12 02	20 39	#59	8m	
106	comp			↑		
107	nrqb177.304	12 03	20 39	#59	6m	
108	comp			↑		
109	nrqb177.305	12 03	20 24	#59	20m	
110	comp			↑		
111	nrqb177.306	12 03	20 03	#59	7m	
112	comp			↑		
113	nrqb177.308	12 03	20 19	#59	8m	
114	comp			↑		
115-116	sn1999b2	14 01	68 52	#59	20m	PA = 65°
117	comp			↑		
118	a2199c.048	16 16	37 51	#64	7m	
119	comp			↑		
120	a2199c.049	16 17	40 05	#64	2.5m	
121	comp			↑		
122	a2199c.050	16 17	35 57	#64	7m	
123	comp			↑		
124	a2199c.051	16 17	41 26	#64	10m	
125	comp			↑		
126	a2199c.052	16 17	43 28	#64	17m	
127	comp			↑		
128	a2199c.053	16 17	38 54	#64	5m	



60 inch Telescope Log

Observer: CALXSUS

PI: Rines, Falco

Spectrograph: FAST

Grating: 300L

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Date: 5/7/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
129	comp			↑		
130	a2199c.054	16 17	41 54	#64	11m	
131	comp			↑		
132	a2199c.055	16 17	40 56	#64	10m	
133	comp			↑		
134	a2199c.056	16 17	40 08	#64	18m	
135	comp			↑		
136	a2199c.057	16 17	38 02	#64	6m	
137	comp			↑		
138	a2199c.058	16 18	41 23	#64	5m	
139	comp			↑		
140	a2199c.059	16 18	41 34	#64	6m	
141	comp			↑		
142	a2199c.060	16 18	42 08	#64	4m	
143	comp			↑		
144	a2199c.061	16 19	27 04	#64	12m	
145	comp			↑		
146	a2199c.062	16 19	36 52	#64	3.5m	
147	comp			↑		
148	a2199c.063	16 19	40 11	#64	15m	
149	comp			↑		
150	a2199c.064	16 20	36 21	#64	5m	
151	comp			↑		
152	18098p4953	18 11	49 54	#60	2m	
153	comp			↑		
154	18122p6955	18 11	69 54	#60	4m	
155	comp			↑		
156	18100p2535	18 12	25 37	#60	1m	stellar? superposed star
157	comp			↑		
158	18100p2535	18 12	25 35	#68	7m	

156 - galaxy underneath + to the E of superposed star has H $\alpha$  em (strong)



## 60 inch Telescope Log

Observer: K. DendyPI: N. CaldwellSpectrograph: FASTGrating: 600Page: 7335Date: 5-8-99

Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-10	BIAS					
11-20	FLAT				15	
21-24	DARK				1800	Bad in red!
25	COMP					
26-30	unnamed (SKY FLATS)				30	
31	HD90250	10 22 52	35 40 50		7	Rose Stand.
32	COMP					
33	HD90277	10 25 55	33 47 46		2	Rose Stand.
34	COMP					
35	HD94247	10 50 33	54 51 5		3	Rose Stand.
	COMP					
37	HD98231	11 18 11	31 31 45		2	Rose Stand
	COMP					
39	HD100030	11 28 10	48 12 21		3	Rose Stand.
	COMP					
41	HD90861	10 29 54	28 34 52		4	Vel. Stand.
	COMP					
43	PG0939p262	9 39 59	26 14 42		300	Flux Stand. PA = 70.0
	COMP					5" slit
45	sn1999by	9 21 52	51 00 06		600	
	COMP					
47	VCC1183	12 26 51	11 42 30		1800	Something weird?
	COMP					↑ PA = 15
49	VCC1036	12 25 10	12 35 30		1800	High dark current
	COMP					redward of
51	VCC1036	"	"		1800	~5600 Å
	COMP					↓
53	VCC1036	"	"		1800	
	COMP					
55	VCC1036	"	"			

## 60 inch Telescope Log

Observer: K. DendyPI: N. CaldwellSpectrograph: FASTGrating: 600Page: 7336Date: 5-8-99

Number	Object	R. A.	Dec.	L/R	Exp	Comments
56	COMP ↑					
57	↓ COMP					
58	VCC 1183	12 26 51	11 42 30		1800	PA = 60.0
59	COMP					
60	VCC 1183	12 26 51	11 42 30		1800	
61	COMP ↑					
62	COMP ↓					
63	N5596	14 22 28	37 07 23		1800	PA = 90.0
64	COMP					
65	N5596	"	"		1800	
66	COMP					
67	N5596	"	"		1800	
68	COMP ↑					
69	↓ COMP					
70	N16003	15 49 20	19 01 54		1800	PA = 60.0, No guide *
71	COMP					
72	N16003	15 49 20	19 01 54		1800	
73	COMP					
74	PG1708p602	17 08 36	60 13 52		360	Flux Std., PA = -40.0
75	COMP					5" slit
76	HD161096	17 43 28	4 34 02		0.2	Vel Std., 3" slit
77	COMP					
78	HD180006	19 10 44	56 46 24		3	Rose stand.
79	COMP					
80	HD191615	20 07 50	25 23 15		5	Rose Stand.
81	COMP					
82-91	BIAS					
92-101	FLAT				15	
102-106	SKY				30	
107	COMP					
108-111	DARK				1800	

## 60 inch Telescope Log

Observer: K. DendyPI: N. CaldwellSpectrograph: FASTGrating: 600Page: 7337Date: 05-09-99

Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-10	BIAS					
11-20	FLAT				15	
21-23	BIAS					test exposures
24-27	DARK				1800	
28-32	SKY FLAT				5	
33	COMP ↑					
34-35	↓ COMP					
36	HD94264	10 50 31	34 29 6		1	Rose Stand.
37	COMP ↑					
38	↓ COMP					
39	HD95128	10 56 40	40 41 52		2	Rose Stand.
	COMP ↑					
	↓ COMP					
42	HD100006	11 30 29	18 24 35		3	Rose Stand.
	COMP ↑					
	↓ COMP					
45	HD99028	11 23 56	10 31 45		1	Rose Stand.
	COMP ↑					
	↓ COMP					
48	HD100696	11 33 8	69 36 5		3	Rose Stand.
	COMP ↑					
	↓ COMP					
51	HD90861	10 29 54	28 34 52		4	Vel. Stand.
	COMP ↑					
	↓ COMP					
54	Feige 66	12 34 54.7	25 20 31		300	Flux Stand., PA=-20 5" slit
	COMP ↑					
	↓ COMP					
57	VCC 1303	12 28 8	9 17 30		1800	3" slit, PA=-25.0
	COMP					

## 60 inch Telescope Log

Observer: K. DendyPI: N. CaldwellSpectrograph: FASTGrating: 600Page: 7338Date: 5-09-99

Number	Object	R. A.	Dec.	L/R	Exp	Comments
59	VCC 1303 COMP	12 28 8	9 17 30		1800	
61	VCC 1303 ↑ COMP	"	"		1800	
63	COMP ↓					
64	VCC 1321	12 28 21	17 2 6		1800	PA = 50.0
65	COMP					
66	BIAS					checking ccd
67	VCC 1321	"	"		1800	
68	COMP					
69	VCC 1321	"	"		1800	
70	COMP ↑ ↓ COMP					
72	N5500 COMP	14 10 14	48 32 48		1800	PA = -45.0
74	N5500 COMP	14 10 14	48 32 48		1800	
76	N5500 COMP	"	"		1800	
78	N5500	"	"		1800	
79	COMP ↑					
80	↓ COMP					
81	A15565p64	15 57 09	63 55 02		1800	PA = -45.0
82	COMP					
83	A15565p64	"	"		1800	
84	COMP					
85	BIAS					checking ccd
86	A15565p64	"	"		1800	
87	COMP ↑					
88	↓ COMP					



## 60 inch Telescope Log

Observer: K. DendlyPI: N. CaldwellSpectrograph: FASTGrating: 600Page: 1339(a)Date: 5-10-99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-2	COMP					checking cord
3-12	BIAS					
13-22	FLAT				15	
23-27	DARK				1800	
28-33	SKY FLAT				5	
34	COMP					
35	↓ COMP					
36	HD78749	9 6 14	17 40 24		4	Rose Stand.
	COMP ↑					
	↓ COMP					
39	HD79452	9 12 10	34 50 28		3	Rose Stand.
	COMP ↑					
	↓ COMP					
42	HD82328	9 29 31	51 54 23		0.5	Rose Stand.
	COMP ↑					
	↓ COMP					
45	HDB5503	9 49 55	26 14 36		1	Rose Stand.
	COMP ↑					
	↓ COMP					
48	HD88986	10 13 38	28 56 0		3	Rose Stand.
	COMP ↑					
	↓ COMP					
51	HDB7141	10 01 18	54 08 5		3	Rose Stand.
	COMP ↑					
	↓ COMP					
54	HD90861	10 29 54	28 34 52		4	Vel. Stand.
	COMP ↑					
	↓ COMP					
57	Feige 34	10 36 41	43 21 50		240	Flux Stand., PA=-50
	COMP ↑					5" slit



## 60 inch Telescope Log

Observer: K. DandyPI: N. CaldwellSpectrograph: FASTGrating: 600Page: 7340Date: 5-10-99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
59	↓ COMP					3" slit
60	VCC1871 COMP	12 38 44	11 39 42		1800	PA=0.0 No guide star
62	VCC1871 COMP	12 38 44	11 39 42		1800	
64	VCC1871 COMP	"	"		1800	
66	VCC1871 ↑ COMP	"	"		1800	
68	BIAS COMP ↓					checking ccd
70	VCC784 COMP	12 22 43	15 53 0		1800	PA = 60
72	VCC784 ↑ COMP COMP ↓	"	"		1800	
75	N5582 COMP	14 20 44	39 42 18		1800	PA = -80
77	N5582 ↑ COMP COMP ↓	"	"		1800	
80	N5966 COMP	15 35 49	39 47 07		1800	PA = -70
82	N5966 COMP	"	"		1800	
84	N5966 ↑ COMP COMP ↓	"	"		1800	clouds thicker
87	PG1708p602 ↑ COMP	17 08 36	60 13 52		600	PA = -40, Flux Stand. 5" arcsec ↑ low counts



## 60 inch Telescope Log

Observer: K. DandyPI: N. CaldwellSpectrograph: FASTGrating: 600Date: 5-11-99Page: 7342

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-6	DARK				1800	
7-16	BIAS					
17-26	FLAT				15	
27-30	test				5	testing focus
31-36	SKY FLAT				5	⇒ reset to 960
37	COMP					
	↓ COMP					
39	HD101484	11 38 11	21 37 51		1	Rose Stand.
	COMP ↑					
	↓ COMP					
42	HD101501	11 38 25	34 29 3		1.5	Rose Stand.
	COMP ↑					
	↓ COMP					
45	HD106714	12 13 49	24 13 24		1	Rose Stand.
	COMP ↑					
	↓ COMP					
48	HD109358	12 31 22	41 37 44		0.5	Rose Stand.
	COMP ↑					
	↓ COMP					
51	HD109345	12 31 19	33 39 38		3	Rose Stand.
	COMP ↑					
	↓ COMP					
54	HD90861	10 29 54	28 34 52		4	Vel. Stand.
	COMP ↑					
	↓ COMP					5" slit
57	Feige 34	10 36 41	43 21 50		240	Flux Stand., PA = -40
	COMP ↑					
	↓ COMP					3" slit
60	VCC 538	12 19 42	7 26 30		1800	v. faint, PA = 15.0
	COMP					

## 60 inch Telescope Log

Observer: K. DendyPI: N. CaldwellSpectrograph: FASTGrating: 600Page: 7343Date: 5-11-99

Number	Object	R. A.	Dec.	L/R	Exp	Comments
62	VCC 538 COMP	12 19 42	7 26 30		1800	v. faint, PA=15
64	VCC 538 COMP	"	"		1800	
66	VCC 538 COMP ↑ ↓ COMP	"	"		1800	
69	VCC 1488 COMP	12 30 41	9 40 30		1800	PA=50
71	VCC 1488 BIAS COMP	"	"		1800	checking cool
74	VCC 1488 COMP ↑ ↓ COMP	"	"		1800	
77	N5603 COMP	14 23 02	40 22 40		1800	PA = - 80 No guide star
79	N5603 COMP	"	"		1800	
81	N5603 COMP ↑ ↓ COMP	"	"		1800	HA far west
84	I 1153 COMP	15 57 05	48 09 25		1800	PA = - 70
86	I 1153 COMP	"	"		1800	
88	I 1153 COMP ↑ ↓ COMP	"	"		1800	
91	PG 1708 p602	17 08 36	60 13 52		300	5" slit Flux stand, PA = - 60 sky brightening



60 inch Telescope Log

Observer: K. DendyPI: N. CaldwellSpectrograph: FASTGrating: 600Page: 7345Date: 5-12-99

Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-6	DARK				1800	
7-16	BIAS					
17-26	FLAT				15	
27-32	SKY FLAT					
33	COMP					
	↓ COMP					
35	HD81192	9 21 57	20 00 14		4	Rose Stand.
	COMP ↑					
	↓ COMP					
38	HD83506	9 38 24	72 28 53		3	Rose Stand.
	COMP ↑					
	↓ COMP					
41	HD84737	9 45 22	46 15 18		2	Rose Stand.
	COMP ↑					
	↓ COMP					
44	HD87822	10 08 16	31 36 15		3	Rose Stand.
	COMP ↑					
	↓ COMP					
47	HD88737	10 11 45	21 25 3		3	Rose Stand.
	COMP ↑					
	↓ COMP					
50	HD94247	10 50 33	54 51 5		2	Rose Stand.
	COMP ↑					
	↓ COMP					
53	HD90861	10 29 54	28 34 52		4	Vel. Stand.
	COMP ↑					
	↓ COMP					
56	Feige 34	10 36 41	43 21 50		240	Flux Stand., PA = -40
	COMP ↑					
	↓ COMP					5" slit
						3" slit

## 60 inch Telescope Log

Observer: K. DandyPI: N. CaldwellSpectrograph: FASTGrating: 600Page: 7346Date: 5-12-99

Number	Object	R. A.	Dec.	L/R	Exp	Comments
59	sn 1999 by ↑ COMP COMP ↓	9 21 52	51 00 07		600	
62	VCC751 COMP	12 22 17	18 28 24		1800	PA = 25.0
64	VCC751 COMP	"	"		1800	
66	VCC751 COMP	"	"		1800	
68	VCC751 ↑ COMP COMP ↓	"	"		1800	
71	VCC758 COMP	12 22 23	7 43 18		1800	PA = 50.0
73	VCC758 COMP	"	"		1800	
75	VCC758 ↑ COMP COMP ↓	"	"		1800	HA 7 3.0 hrs, very odd...
78	N5631 COMP	14 26 33	56 34 34		1800	PA = -60.0
80	N5631 ↑ COMP COMP ↓	"	"		1800	
83	N6030 COMP	16 01 51	17 57 27		1800	PA = 55.0
85	N6030 COMP	"	"		1800	
87	N6030 ↑ COMP	"	"		1800	clouds getting heavy





FAX  
to: Susan Takatz  
Hi Susan!

Pg 1 of 3

60 inch Telescope Log

Observer: P Berlin

PI: Kirschner & Erikson

Spectrograph: FAST

Grating: 30912W

Date: 5/13/99

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Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0s	
11-20	FLAT				7s	some cirrus
21-30	BIAS				0s	
31-40	FLAT				14s	
41-45	sky				2s	
46	COMP				5s	
47-48	F01234	10:36	+43:21	S6	90s	
49	COMP			↑		
50	N3377	10:45	+14:14	S7	90s	
51	COMP			↑		
52	SN1996g	09:21	+51	Z	8m	
53	COMP			↑		
54	SN1996g blue			Z	8m	885 filt ↓
55	COMP			↑		
56	F01234 blue			S6	90s	
57	COMP			↑		
58-62	FLAT blue			Z	32s	
63	SN1996g red			Z	8m	62495, 750 filt ↓
64	COMP			↑		
65-69	FLAT red			Z	70s	
70	F01234 red			S7	90s	
71	COMP			↑		
72						1200L; 2" slit; filt = 3x ↓
73, 75, 77	hrcsel2w	09:57	+69:03	90	30m	PA=90
74, 76, 78	COMP			↑		
79-83	FLAT			90	1m	
84	test					
85	H244	13:21	+36	S6	2m	300L; 3" slit; filt = 610.0
86	COMP			↑		PA=10

## 60 Inch Telescope Log

Observer: PBPI: KenSpectrograph: FASTGrating: 300RPage: 7349Date: 5/13/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
87	SN 1999bn	13:20	+02:29	Z	20	PA=27
88	COMP			r		
89	921999c.65	16:21	+37:10	64	6m	
90	COMP			r		
91	.66	16:21	+43:21	64	10m	
92	COMP			r		
93	.67	16:22	+37:31	64	3m	
94	COMP			r		
95	.68	16:22	+36:45	64	6m	
96	COMP			r		
97	.69	16:22	+36:47	64	10m	
98	COMP			r		
99	.70	16:22	+41:31	64	8m	
100	COMP			r		
101	.71	16:23	+37:12	64	6m	
102	COMP			r		
103	.72	16:23	+35:47	64	4m	
104	COMP			r		
105	.73	16:23	+41:42	64	6m	
106	COMP			r		
107	.74	16:23	+39:31	64	6m	
108	COMP			r		
109	.75	16:24	+38:37	64	6m	
110	COMP			r		
111	.76	16:24	+35:56	64	10m	
112	COMP			r		
113	SN 1999cc	16:24	+30	Z	20m	
114	COMP			r		
115, 117	SN 1999cb	16:25	+40:20	Z	20	
116, 118	COMP			r		

60 inch Telescope Log

Spectrograph: FAST

Observer: PB

Grating: 3002

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PI: Kan

Date: 5/13/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
119-121	SN ugc10990	17:48	+34.04	Z	20m	
120-122	COMP			T		
122	a21992-077	16:24	+36.55	69	5m	
124	COMP			T		
125	.078	16:24	+37.31	69	8m	
126	COMP			T		
127	.079	16:25	+37.50	69	8m	
128	COMP			T		
129	.080	16:26	+38.23	69	6m	
130	COMP			T		
131	.081	16:26	+42.07	69	5m	
132	COMP			T		
133	.082	16:26	+37.14	64	5m	
134	COMP			T		
135	.083	16:26	+38.48	69	6m	
136	COMP			T		
137	.084	16:27	+42.50	69	5m	
138	COMP			T		
139	.085	16:27	+42.48	69	6m	
140	COMP			T		
141	.086	16:27	+41.44	69	11m	
142	COMP			T		
143	.087	16:28	+35.74	69	7m	
144	COMP			T		
145	.091	16:28	+42.48	69	5m	
146	COMP			T		
147-156	BSAS				05	
157-166	FLAT				75	
167-176	BSAS				08	
177-186	FLAT				145	
187-196	DNRK				20m	bimby2

60 inch Telescope Log

Observer: PBerland

PI: Erikson

Spectrograph: FAST

Grating: 3000

Date: 5/14/99

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Number	Object	R. A.	Dec.	L/R	Exp	Comments
H10	DARK				15m	
11-20	BSAS				0s	clear skies!
21-30	FLAT				7s	windy
31-40	BSAS				0s	
41-50	FLAT				14s	
51-55	SKY			57	2s	
56	COMP			↑	5s	
57	Faye 31	10:36	+47:21	56	90s	
58	COMP			↑		
59	N 3579	10:45	+12:50	57	90s	
60	COMP			↑		
61	ZMJ110551p31	11:05	+31:23	68	5m	
62	COMP			↑		
63	ZMJ112652	11:26	+27:26	68	4m	
64	COMP			↑		
65	ZMJ121713	12:17	+19:05	68	4m	
66	COMP			↑		
67,69	SN 1999by	09:21	+51:00	2	6m	PA=-70
68,70	COMP			↑		
71	SN 1999bw	10:19	+48:31	2	20m	PA=-64
72	COMP			↑		
73	test					
74,76,78	horse 300	09:57	+69:03	90	30m	5" slit PA=72°
75,77,79	COMP			↑		
80	SN 1999by	12:02	+62:30	2	15m	3" slit ↓ PA=-50
81	COMP			↑		
82	NGC 5410	14:02	+31:49	91	10m	PA=45
83	COMP			↑		
84-86	RuWigs.	13:	-25	12	5s	
87				↑		

88 CSK

CSK

88 CSK

60 inch Telescope Log

Observer: PB  
 PI: Kenyon

Spectrograph: FAST  
 Grating: 300L  
 Date: 5/14/99

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88 CSK  
 88 CSK  
 88 CSK

Number	Object	R.A.	Dec.	L/R	Exp	Comments
88	ZMJ1220Sp	12:20	+33:39	68	8m	
89	WMP			↑		
90	ZMJ122011p	12:28	+26:47	68	5m	
91	WMP			↑		
92	ZMJ145106	14:51	+37:29	68	5m	
93				↑		
94	a2199C D88	16:28	+40:43	69	10m	
95	WMP			↑		
96	.081	16:28	+40:52	69	5m	
97	WMP			↑		
98	SNKait	11:21	+20:09	2	9m	
99	WMP			↑		
100	SNKait	11:21	+20:09	2	20m	
101	WMP			↑		
102-3	H244	13:21	+36:23	56	2m	PA=86!
104	WMP			↑		
105	SN1999bz	14:01	+68:52	2	20m	PA=50
106	WMP			↑		
107	SN1999ac	16:07	+07:58	2	20m	PA=23
108	WMP			↑		
109	162631m2423	16:26	-24:23	74	6m	
110	WMP			↑		
111	162710m2419	16:27	-24:30	74	5m	
112	WMP			↑		
113	162737m24	16:27	-24:30	74	15m	
114	WMP			↑		
115	162749m24	16:27	-24:25	74	5m	
116	WMP			↑		
117	162816m24	16:28	-24:36	74	15m	
118	WMP			↑		

60 inch Telescope Log

Observer: PB  
 PI: Ken

Spectrograph: FAST  
 Grating: 300L  
 Date: 5/14/99

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Number	Object	R. A.	Dec.	L/R	Exp	Comments
119-120	HBC 656	17:10	-27:38	74	5m, 30m	
121	COMP			f		
122	HBC 658	17:15	-20:56	74	5m	
123	COMP			f		
124	ZM5172922	17:29	+10:11	68	5m	* to E
125	COMP			f		
126	ZM5181766	18:17	+31:48	68	6m	
127	COMP			f		
128	a21992.090	16:26	+42:25	69	15m	
129	COMP			f		
130	.092	16:29	+39:29	69	6m	
131	COMP			f		
132	.093	16:29	+39:29	64	4m	
133	COMP			f		
134	.094	16:29	+41:2	69	6m	
135	COMP			f		
136	.095	16:30	+42:59	69	5m	
137	COMP			f		
138	.096	16:30	+40:43	64	31m	
139	COMP			f		clear & down!
140	.099	16:34	+36:17	64	6m	
141	COMP			f		
142	.098	16:32	+41:42	64	6m	wh
143	COMP			f		
144-153	BSAS				0s	
154-163	FLAT				7s	
164-173	BSAS				0s	
174-183	FLAT				14s	
184-193	FLAT				14s	6"; 6m by 2
194-203	DARK				30m	

60 inch Telescope Log		Spectrograph: <u>FAST</u>				Page: <u>7354</u>
Observer: <u>PBerline</u>		Grating: <u>300L</u>				
PI: <u>Kirshner</u>		Date: <u>5/15/99</u>				
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BIAS				0s	clear skies!
21-30	FLAT				7s	
31-40	BIAS				0s	
41-50	FLAT				14s	
51-55	sky	zenith		S9	2s	
56	WMP			↑	5s	
57-58	Feige 34	10:24	+42:21	S6	90s	
59	WMP			↑		
60	N3379	10:45	+1250	S7	90s	
61	WMP			↑		
62	NGC 110.154	11:01	+10:13	S9	5m	
63	WMP			↑		
64	.154	11:01	+10:41	S9	6m	
65	WMP			↑		
66	.155	11:01	+10:17	S9	5m	
67	WMP			↑		
68	.157	11:01	+10:47	S9	3m	
69	WMP			↑		
70	SN 1999ae	08:27	+71:29	Z	20m	PA=66
71	WMP			↑		
72,74	SN 1999bg	09:21	+51:10	Z	7m	PA=100
73,75	WMP			↑		
76,78,80,82	SN 1999bs	11:46	+17:28	Z	20m	PA=90
77,79,81,83	WMP			↑		
84	H244	13:21	+26	S6	2m	PA=90
85	WMP			↑		
86	SN 1999cd	11:21	+20:09	Z	20m	
87	WMP			↑		

60 inch Telescope Log				Spectrograph: <u>FAST</u>		
Observer: <u>PB</u>				Grating: <u>300R</u>		Page: <u>7355</u>
PI: <u>And.</u>				Date: <u>5/15/99</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
88	Mrq b177.313	12:04	+20:19	S9	4m	
89	COMP			↑		
90	.314	12:04	+20:23	S9	7m	
91	COMP			↑		
92	.316	12:04	+20:11	S9	10m	
93	COMP			↑		
94	.318	12:04	+20:11	S9	7m	
95	COMP			↑		
96	.320	12:04	+20:15	S9	6m	
97	COMP			↑		
98	.321	12:04	+20:25	S9	4m	
99	COMP			↑		
100	.327	12:04	+20:23	S9	6m	
101	COMP			↑		
102	.329	12:04	+19:55	S9	10m	
103	COMP			↑		
104	.330	12:04	+19:52	S9	6m	
105	COMP			↑		
106	.334	12:04	+21:14	S9	6m	
107	COMP			↑		
108	H244	13:21	+36	S6	2m	PA=90
109	COMP			↑		
110	SNIP90C	16:02	+3721	Z	20m	
111	COMP			↑		
112-3	HBC259	16:25	-24:20	74	4m, 20s	
114	COMP			↑		
115	HBC260	16:26	-23:43	74	4m	
116	COMP			↑		
117	HBC262N	16:26	-24:45	74	10m	
118	COMP					



60 inch Telescope Log				Spectrograph: <u>FAST</u>		
Observer: <u>PB</u>				Grating: <u>300R</u>		Page: <u>7356</u>
PI: <u>Kenny &amp; Ken</u>				Date: <u>5/15/99</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
119	HBC 2625	16:26	-24:45	74	10m	
120	COMP			↑		
121-2	HBC 2628	16:31	-24:27	74	4m, 30s	Li
123	COMP			↑		
124-5	HBC 272	17:10	-27:15	74	4m, 30s	bm by 2
126	COMP			↑		
127	HBC 639	16:26	-24:20	74	6m	Li
128	COMP			↑		
129	HBC 644SE	16:31	-24:04	74	4m	
130	COMP			↑		
131-2	HBC 649	16:34	-15:48	74	4m, 30s	
133	COMP			↑		
134	G 2199 c 097	16:22	+77:05	64	10m	
135	COMP			↑		
136	.102	16:34	+36:11	64	15m	
137	COMP			↑		
138	.104	16:34	+43:22	64	6m	
139	COMP			↑		
140	.102	16:36	+36:36	64	9m	
141	COMP			↑		
142	.103	16:36	+42:57	64	5m	
143	COMP			↑		
144	.104	16:36	+36:08	64	15m	
145	COMP			↑		
146	.106	16:36	+41:49	64	5m	
147	COMP			↑		
148	.107	16:36	+41:53	64	7m	
149	COMP			↑		
150	.112	16:38	+37:14	64	10m	
152	COMP			↑		



60 inch Telescope Log

Observer: GarnavichPI: GarnavichSpectrograph: FASTGrating: 300Date: May 16, 1999Page: 7358

3" slit

Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-11	DARK	-	-		1200	bin x 2
12-20	FLAT	-	-		14s	bin x 2
21-29	BIAS	-	-		0	"
30-32	Sky	-	-		2 to 12	
33	Comp				10s	
34-36	SN 996y				300s	PA = -30
37	Comp				10s	Probs with Comp
38	Comp				10s	
39-40	SN 1999E				1200s	Still there!
41	Comp				10s	
42-43	SN 1998 bk				900s	Test Scans
44, 45	SN 1996 bk Gal				900s	Scan 20" wide PA=60
46	Comp					
47	BD 332642				90s	PA=90
48	Comp					
49-51	SN 1998D Gal				600s	Scan 30" wide PA=50
52	Comp					PA
53	SN 1999CC				900s	PA=90°
54	Comp				<del>10s</del>	Scan
55-57	SN 1999CC Gal				900s	Scan 30" PA=90°
58	Comp				10s	<del>stopped, too bright</del>
59	Nova Sgr 1999				300s	Helium saturated
60	Comp				10s	
61, 62	Nova Sgr 1999				60s, 20s	
63, 64	SN 1998V Gal				1200s, 600s	Scan 15" PA=80°
65	Comp				10s	stopped, too bright
66	HD 192281				90s	too bright
67 <del>67</del>	Comp				10s	
68, 69	HD 192281				20s, 10s	
70, 71	S193					

Good seeing  
 Clear all through  
 Problems with pickoff  
 mirror



60 inch Telescope Log

Observer: GarnavichPI: GarnavichSpectrograph: FASTGrating: 300Page: 7360Date: May 17, 1999

Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-6	Dark				1200s	Bin x 2
7-15	Bias				0s	
16-26	Flat				14s	Tilt = 610
27-29	Sky				2s	
30	Comp				10s	
31-32	Feige 34					PA = -30
33	Comp					<del>PA = -50</del>
34-36	SN 1999by				420s	PA = -50 Done took of
37	Comp					
38	SN 1999aq				900s	Scan PA = -20 30" scan
39	Comp					Dome lost
40-42	SN 1998aq				600s	Scan 1" PA = 90
43	Comp				10s	
44	Kaitz				1200s	= SN 1999ce PA = 90
45	Comp				10s	
46, 47	SN 1999br				1200s	PA = 24°
48	Comp				10s	
49-51	SN 1990N				600s	PA = -10 Scan 1"
52	Comp				10s	
53-55	SN 1998ab				900s	PA = 45° Scan 30"
56	Comp					
57-59	SN 1996ei				600s	PA = -25 Scan 120"
60	Comp				10s	
61-63	SN 1999ac				900s	PA = -30 Scan 60"
64	Comp				10s	
65-67	N Sgr 99				3, 30, 300s	large dynamic range PA = 0
68	Comp				10	
69-71	SN 1998bp				900s	PA = 70° Scan 20" Clouds
72	Comp				10s	
73	SN 1998V				1200s	PA = 80° Scan 15"



60 inch Telescope Log

Observer: GarnavichPI: GarnavichSpectrograph: FASTGrating: 300Page: 7362Date: May 18, 1999

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-6	Dark				1200s	Bin x4
7-9	Sky				2s	Bin x2 3" slit
10	Comp					
11-19	Bias				0s	
20-28	Flat				14s	
29, 30	Feige 34				90s	PA = -50°
31	Comp				10s	
32-34	SN1999by				480s	PA = -50°
35	Comp				10s	
36-38	SN1995al				<del>600s</del>	PA = 100° Scan 30"
39	Comp				10s	
40-42	SN1997bq				600s	PA = 0° Scan 90"
43	Comp				10s	
44-46	SN1997br				900s	PA = -20° Scan 20"
47	Comp				10s	
48-50	SN1997ag				900s	PA = +100° Scan 15"
51	Comp				10s	
52-54	SN1996c				900s	PA = 0.0 Scan 15"
55	Comp				10s	
56, 57	SN1999cc				900s	PA = -60° straight spec
58	Comp					
59-61	SN19900				900s	PA = -67° Scan 15"
62	Comp				10s	
63-65	SN1998v				1200s	PA = 80
66	Comp				10s	
67, 68	HD192281				5s	PA = 55°
69	Comp				10s	
70-74	NSgr99				3 to 300s	1.5" slit
75	Comp				10s	
76-113	S193				30s	1.5" slit





60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>7364</u>	
Observer: <u>CAV. IAN</u>			Grating: <u>600 LPM</u>		Date: <u>5/19/99</u>	
PI: <u>Kochanek et al</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1, 2	DARKS				15m	600 lpm, 2" slit
3-12	BIAS				0s	494 tilt (abs)
13-22	FLATS				35s	
23	Floqz 34	10 39	43 06	#88	90s	
24	comp			↑	35s	
25	comp			↓	35s	
26-27	ZWJ110646	11 06	28 42	#88	15m	PA = 30° (MFO03)
28	comp			↑	35s	
29	comp			↓	35s	
30-32	ZWJ115212.54	11 52	16 51	#88	15m	PA = 80° (MFO23)
33	comp			↑	35s	
34	HD109519	12 35	21 53	#88	N/A	(forget comp)
35	comp			↓	35s	rate = 2
36-38	MFO29	12 19	29 11	#88	15m	PA = 35°
39	comp			↑	35s	
40	comp			↓	35s	
41-43	MFO59	14 44	22 43	#88	15m	PA = 39°
44	comp			↑	35s	
45	Foizc 98	14 38	27 30	#56	2m	PA = 90°
46	comp			↑	25s	
47-48	NGC4839	12 57	27 30	#88	5m	
49	comp			↑	35s	
50	HD117876	13 32	24 20	#88	N/A	rate = 3
51	comp			↑	35s	
52	comp			↓	35s	
53-55	MFO94	18 20	38 09	#88	15m	PA = -50
56	comp			↑	35s	(object ~ 30" "width")
57-58	NGC5846	15 06	01 36	#88	5m	PA = 90°
59	comp			↑	35s	
60	HD155312	16 57	24 21	#88	N/A	

60 inch Telescope Log

Observer: CALYNS

PI: Kochanek et al

Spectrograph: FAST

Grating: 600 LPM

Page: 7365

Date: 5/19/99

Number	Object	R.A.	Dec.	L/R	EXP	Comments
61	comp			↑	35s	
62	MFO90	18 04	23 11	↑88	15m	PA = -16
63	comp			↓	35s	
64-65	MFO90	18 04	23 11	↑88	15m	PA = -16
66	comp			↑	35s	
67	HD156874	17 17	28 49	↑88	N/A	PA = 90°
68	comp			↑	35s	
69	comp			↓	35s	
70-71	MFO70	15 47	37 12	↑88	15m	PA = 55°
72	comp			↑	35s	
73	comp			↓	35s	
74-76	MFO82	17 22	31 20	↑88	15m	PA = 90°
77	comp			↑	35s	
78	comp			↓	35s	
79	MFO83	17 24	23 43	↑88	15m	PA = 45°, sun rising
80	comp			↑	35s	
81	HD183492	19 29	14 35	↑88	N/A	PA = 90°
82	comp			↑	35s	
83	HD192281	20 12	40 16	↑56	6s	↓
84	comp			↑	35s	
85-89	sky			↑57	2s	
90	comp			↑	35s	
91-100	FLAT				35s	
101-110	BIAS				0s	
111-125	DARKS				15m	

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>72/66</u>
Observer: <u>CALKINS</u>				Grating: <u>600 LPM</u>		
PI: <u>Kochanek et al, Kirshner</u>				Date: <u>5/20/99</u>		
Number	Object	S.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	Binby 2, slit = 2"
11-20	BIAS				0s	Tilt = 742, 600 LPM
21-30	FLAT				35s	
31-35	sky			#57	2s	
36	comp			↑	35s	
37	Feige 56	12 06	11 40	#56	2m	
38	comp			↑	35s	
39	Feige 56	12 06	11 40	#56	2m	PA = 17°
40	comp			↑	35s	
41, 42	sm1999by	9 22	51 01	#2	10m	PA = -64°, Tilt = 742
43	comp			↑	35s	600 LPM, 2" slit
44	comp			↓	35s	
45-47	MFO29	12 19	24 10	#88	15m	PA = 34°
48	comp			↑	35s	
49	comp			↓	35s	
50-52	MFO24	11 58	21 14	#88	15m	PA = 79°
53	comp			↑	35s	
54	comp			↓	35s	
55-57	MFO59	14 44	22 44	#88	15m	PA = 39°
58	comp			↑	35s	
59	comp			↓	35s	
60-62	MFO90	18 09	23 10	#88	15m	PA = -17°
63	comp			↑	35s	
64-65	MFO94	18 20	38 09	#88	7.5m	PA = -50°
66	comp			↑	35s	(object "west")
67-68	MFO82	17 22	31 20	#88	7.5m	PA = 90°
69	comp			↑	35s	
70	comp			↓	35s	
71-73	MFO61	14 51	37 29	#88	15m	PA = 50°
74	comp			↑	35s	

60 inch Telescope Log

Observer: CALKINS

PI: Kochanek et al

Spectrograph: FAST

Grating: 600 LPM

Page: 7367

Date: 5/20/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
75	BDP332642	15 51	22 56	"56	2m	PA=90°
76	comp			↑	35s	
77-78	MFO70	15 47	27 11	"88	7.5m	PA=54°
79	comp			↑	35s	
80	comp			↓	35s	
81-82	MFO92	18 12	39 37	"88	15m	PA=54°
83	comp			↑	35s	
84	comp			↓	35s	
85-86	MFO91	18 05	39 45	"88	15m	PA=-44°
87	comp			↑	35s	
88	comp			↓	35s	
89-90	MFO86	17 30	35 21	"88	15m	PA=-39°
91	comp			↑	35s	
92	comp			↓	↓	
93	MFO87	17 30	16 16	"88	15m	PA=60
94	comp			↑	35s	
95	HD192281	20 12	40 15	"56	7s	PA=90°
96	comp			↑	35s	
97-106	BIAS				0s	
107-116	FLAT				35s	
117-126	DARK				15m	

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>2368</u>
Observer: <u>CALKINS</u>				Grating: <u>600 Lpm</u>		
PI: <u>Koutaneck et al, Kirchner</u>				Date: <u>5/21/99</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BEAS				0s	
21-30	FLAT				35s	
31-35	sky			#57	2s	
36	comp			↑	35s	
37	Feige 56	12 06	11 40	#56	2m	
38	comp			↑	35s	
39	Feige 56	12 06	11 40	#56	2m	PA = 17°, Tilt = 494
40	comp			↑	35s	$\lambda_c = 4900 \text{ \AA}$ , 2" slit
41-42	sn/999by	9 22	51 01	#2	10m	PA = -65
43	comp			↑	35s	
44	HD 11541	12 49	26 25	#88	N/A	2 rate
45	comp			↑	35s	
46	comp			↓	35s	
47-49	MFO 61	14 51	37 29	#88	15m	PA = 50°
50	comp			↑	35s	
51	comp			↓	35s	
52-54	MFO 74	11 58	21 15	#88	15m	PA = 80°
55	comp			↑	35s	
56-57	NGC 4697	12 48	-5 48	#88	5m	PA = 70°
58	comp			↑	35s	
59	HD 140716	15 43	32 31	#88	N/A	3 rate
60	comp			↑	35s	
61	comp			↓	35s	
62-64	MFO 85	17 29	10 37	#88	15m	PA = -35
65	comp			↑	35s	
66-67	MFO 86	17 30	35 22	#88	7.5m	PA = -39
68	comp			↑	35s	
69-70	MFO 92	18 12	39 37	#88	7.5m	PA = 54°
71	comp			↑	35s	

60 inch Telescope Log

Observer: CALKINS

PI: Kochanek et al

Spectrograph: FAST

Grating: 600 Lpm

Page: 7369

Date: 5/21/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
72-73	MFC91	18 05	34 45	#88	7.5	PA = -44
74	comp			↑	35s	
75	HD154084	17 02	25 31	#88	N/A	3 rate
76	comp			↑	35s	
77	comp			↓	35s	
78-80	MFO67	15 33	21 07	#88	15m	PA = 10
81	comp			↑	35s	
82	comp			↓	35s	
83-85	MFO84	17 29	40 14	#88	15m	PA = 17.0
86	comp			↑	35s	
87	HD153312	16 57	29 22	#88	N/A	2 rate
88	comp			↑	35s	
89-90	MFO87	17 30	16 16	#88	7.5m	PA = 59°
91	comp			↑	35s	
92	comp			↓	35s	
93-95	MFO93	18 17	33 48	#88	15m	PA = 86°, object east
96	comp			↑	35s	
97	comp			↓	35s	
98	MFO82	17 24	23 43	#88	15	PA = 44°
99	comp			↑	35s	
100-101	NGC7331	22 37	39 24	#88	5m	PA = -9
102	comp			↑	35s	
103	HD182762	19 25	19 47	#88	N/A	3 rate
104	comp			↑	35s	
105	CAOB2no9	20 33	41 15	#56	30s	PA = 90°
106	comp			↑	35s	
107	HD192281	20 12	40 16	#56	10s	PA = 90°
108	comp			↑	35s	
109-118	BIAS				0s	
119-128	FLAT				35s	
129-138	DARK				15m	

60 inch Telescope Log

Observer: CALKINSPI: Kochanek et alSpectrograph: FASTGrating: 600 lpmPage: 2370Date: 5/22/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BIAS				0s	
21-30	FLAT				35s	
31-35	sky			↑ 57	2s	
36	comp			↑	35s	
37	Feige 56	12 06	11 40	↑ 56	90s	
38	comp			↑	35s	
39	Feige 66	12 37	25 03	↑ 56	90s	
40	comp			↑	35s	
41	Feige 67	12 41	17 31	↑ 56	2m	
42	comp			↑	35s	
43, 44	MFO03	11 06	28 42	↑ 88	7.5m	PA = 30°
45	comp			↑	35s	
46, 47	MFO23	11 52	16 50	↑ 88	7.5m	PA = 80°
48	comp			↑	35s	
49	comp			↓	35s	
50-52	MFO46	13 53	37 52	↑ 88	15m	PA = 75°
53	comp			↑	35s	
54	comp			↓	35s	
55-56	MFO76	16 16	35 42	↑ 88	15m	PA = 95°
57	comp			↑	35s	
58, 59	MFO85	17 29	18 38	↑ 88	7.5m	PA = -35°
60	comp			↑	35s	
61, 62	MFO67	15 33	21 08	↑ 88	7.5m	PA = 9.0°
63	comp			↑	35s	
64, 65	MFO93	18 17	33 49	↑ 88	7.5m	PA = 90°
66	comp			↑	35s	
67	comp			↓	35s	
68-70	MFO48	14 02	38 43	↑ 88	15m	PA = 90°
71	comp			↑	35s	

60 Inch Telescope Log

Observer: CALVINPI: Kochanek et alSpectrograph: FASTGrating: 600 lpmPage: 7371Date: 5/22/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
72, 73	MFO84	17 29	40 14	"88	7.5m	PA = 17.0
74	comp			↑	35s	
75	comp			↓	35s	
76-77	MFO69	15 44	41 07	"88	15m	PA = -29.0
80-81	MFO08	10 33	30 31	↑	35m	... ..
82	comp			↑	35s	
83	comp			↓	35s	
84-85	MFO78	16 23	37 15	"88	15m	PA = -18.0
86	comp			↑	35s	
87	comp			↓	35s	
88-90	MFO75	16 08	16 46	"88	15m	PA = 99°
91	comp			↑	35s	
92	comp			↓	35s	
93	MFO87	17 30	16 16	"88	15m	PA = 60° (took 1 <sup>st</sup> exp on 5/20/99)
94	comp			↑	35s	
95	comp			↓	35s	
96-98	MFO73	16 00	41 28	"88	15m	PA = 44.0
99	comp			↑	35s	
100	BD 404032	20 08	41 14	"56	1m	PA = 90°
101	comp			↑	35s	
102	HD 19231	20 12	40 15	"56	66	↓
103	comp			↑	35s	
104-113	BEAS				0s	
114-123	FLAT				35s	
124-133	DARK				15m	



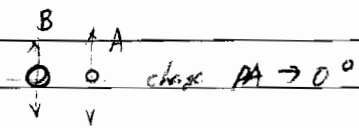
60 inch Telescope Log

Observer: Insect SongPI: StaufferSpectrograph: FASTGrating: 1200Page: 7372Date: 05/23/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
01~08	Dark				900	1200 lines/mm, 1"5 slit
09~18	bias					bin by 2.
19~23	sky				6	7:15, 5 sec sky
24	comp				15	$\lambda_c = 6300 \text{ \AA}$
25~34	FLAT				100	
35	comp				15	
36	HD 91312 A	10 33 14	+40 25 32		2	
37	comp				15	
38	HD 91312 A	"	"		2	
39	"	"	"		2	
40	comp				15	
41	comp				15	
42~44	HD 91312 B	10 34 08	+40 33 57		200	
45	comp				15	
46	comp				15	
47~49	HD 98800 A	11 22 16	-24 46 39		180	
50	comp				15	
51	comp				15	9:35 PM
52~54	HD 98800 B	11 22 05	-24 46 39		180	good Li?
55	comp				15	
56~58	HD 98800 C	11 22 06	-24 46 37		150	
59	comp				15	
60	comp				15	
61~63	HD 102647 A	11 49 06	+14 35 06		0.3	
64	comp				15	
65~67	HD 102647 B	11 48 32	+14 41 10		180	
68	comp				15	
69~71	HD 105686 A	12 10 01	-34:42:10		10	↑ 3" apart PA = 110°
72	comp				15	
73~75	HD 105686 B	12 10 01	-34:42:10		30	↓

60 inch Telescope Log

Observer: Insect SongPI: StaufferSpectrograph: FASTGrating: 1200/1.5Page: 7373Date: 05/23/89

Number	Object	R. A.	Dec.	L/R	Exp	Comments
76	comp				15	
77-79	HD109085 A	12 32 05	-16 11 45		15	
80	comp				15	
81-83	HD109085 B	12 32 10	-15 56 44		600	
84	comp				15	
85-87	HD109510 A	12 35 12	+18 21 56		4	
88	comp				15	
89-91	HD109510 B	12 35 12	+18 21 56		20	⇒ A))
92	comp				15	
93-95	HD143761 A	16 01 02	+33 18 09		6	
96	comp				15	
97-99	HD143761 B	16 02 14	+33 37 53		600	
100	comp.				15	
101-103	HD143761 C	16 01 49	+33 07 06		600	
104	comp				15	
105-107	HD143761 D	16 01 12	+33 19 45		600	
108	comp					
109-111	HD143894 A	16 02 21	+22 48 09		5	
112	comp					
113-115	HD143894 B	16 02 48	+22 48 15		20	
116	comp				15	
117	comp				15	
118-120	HD144432 A	16 07 01	-27 43 12		30	← H $\alpha$ emission
121	comp				15	
122-124	HD144432 B	16 07 00	-27 43 39		600	
125	comp				15	
126-128	HD155826 A	17 15 39	-38 35 34		6	
129	comp				15	
130-132	HD155826 B	17 15 36	-38 33 40		600	
133	comp					



60 inch Telescope Log

Observer: Inseok SongPI: StaufferSpectrograph: FASTGrating: 1200 lines/mm + 1.5 Page: 7375Date: 05/24/89

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	dark				15m	$\lambda_c = 4200 \text{ \AA}$
11-20	bias					setting = 110.6
21-30	FLAT				100s	
31	comp				15	
32-41	sky				5	
42-46	sky				10	
47	comp				60	
48	HD 91312 A	10 33 15	+40 25 44		3	
49-50	"				4 sec	
51	comp				60	
52	HD 91312 B	10 33 59	+40 33 34		240	
53	comp				60	
54	HD 102647 A	11 49 05	+14 33 56		1	
55-56	HD 102647 A				0.3	
57	comp				60	
58	HD 109085 A	12 32 06	-16 12 12		5	
59-60	"				10	
61	comp				60	
62	HD 105686 A	12 10 05	-34 42 29		5	
63-64	"				30	
65	comp				60	
66	comp	6.0			66	
67	HD 108510 A	12 35 09	+18 23 25		10	
68-69	"				40	
70	comp				60	
71-73	HD 108510 B	12 35 11	+18 23 21		15	
74	comp				60	
75	HD 105686 B	12 10 05	-34 42 29		30	PA = 105°
76-77	"				300	
78	comp				60	

60 inch Telescope Log

Observer: Inseok SongPI: StaufferSpectrograph: FASTGrating: 1200Page: 7376Date: 05/24/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
79	HD143894A	16 02 17	+22 48 17		5	
80-81	"				10	
82	comp				60	
83	HD143894B	16 02 43	+22 48 31		60	
84-85	"				80	
86	comp				60	
87	comp				60	
88-90	HD126128A	14 23 22	+08 25 51		5	
91	comp				60	
92	comp				60	
93-95	HD144432 A	16 06 59	-27 44 05		120	
96	comp					
97-98	HD144432 B	16 06 57	-27 44 33		300	
99	comp				60	
100	HD144432 B				300	
101	comp				40	↓ first all A stars and later Bs
102-103	HD151431A	16 47 13	+02 04 35		20	
104	comp				40	
105	HD155931A	17 15 56	-33 20 08		120	
106	"				600	
107	comp				40	
108	HD163296A	17 36 22	-21 36 07		15	
109-110	"				40	
111	comp				40	
112	HD186307 A	19 40 09	+40 08 05		15	
113-114	"				40	
115	comp				40	
116-117	HD186408A	19 41 49	+50 31 31		30	
118	comp				40	
119-120	HD186408C	19 41 51	+50 30 39		60	

