

Start of FAST Run

60 inch Telescope Log	Spectrograph: <u>FAST</u>
Observer: <u>P Berlin</u>	Grating: <u>3002; 3" slit</u>
PI: <u>Wilkesy Geller</u>	Date: <u>5/7/96</u>
	Page: <u>4647</u>

Number	Object	R. A.	Dec.	L/R	Exp	Comments
110	BIAS			0	0s	
11-20	FLAT			0	6s	mostly clear!
21-25	sky			0	2s	
26	COMP			↑	5s	
27-28	N3379	10:45	+12:50	0	60s	
29	COMP			↑		
30-31	Ferg 66	12:34	+25:20	0	30s	
32	COMP			↑		
33	N4151	12:08	+37:41	6	20s	
34	COMP			↑		
35	N4051	12:00	+44:48	6	2m	
36	COMP			↑		
37	MRK 421	11:01	+38:28	6	4m	big 8-ray flare yesterday
38	COMP			↑		
39, 41	322.091055	13:11	+32:03	3	6m, 10m x2	reduce #41
40, 42	COMP			↑		
43	322.091455	13:19	+32:05	3	10m	
44	COMP			↑		
45, 47	323.071576	13:35	+31:27	3	5m, 10m x2	reduce #47
46, 48	COMP			↑		
49	323.071807	13:20	+31:16	3	9m	
50	COMP			↑		
51	323.072795	13:27	+31:30	3	5m	
52	COMP			↑		
53	323.072731	13:24	+31:32	3	5m	
54	COMP			↑		
55	323.072855	13:33	+31:34	3	8m	2 objects on alt
56	COMP			↑		
57	323.073377	13:19	+31:34	3	10m	
58	COMP			↑		

9-25

60 inch Telescope Log		Spectrograph: <u>FAST</u>		Page: <u>4648</u>		
Observer: <u>PB</u>		Grating: <u>3002</u>				
PI: <u>Geller & Krahn</u>		Date: <u>5/7/96</u>				
Number	Object	R.A.	Dec.	L/R	Exp	Comments
59	323.073769	13:20	+31:36	B	10m	
60	COMP			↑		
61	323.074318	13:19	+31:39	3	8m	
62	COMP			↑		
63	323.074471	13:20	+31:41	3	6m	
64	COMP			↑		
65	323.074732	13:26	+31:43	3	7m	
66	COMP			↑		
67	323.075140	13:27	+31:47	3	10m	em
68	COMP			↑		
69	323.075556	13:18	+31:47	3	10m	
70	COMP			↑		
71	SN 1986K	13:18	-26:50	2	15m	6m by 2
72	COMP			↑		
73	H244	13:21	+31:23	0	60s	
75	COMP			↑		bright main
76	323.076073	13:22	+31:49	3	10m	
77	COMP			↑		
78	323.077131	13:25	+31:55	3	10m	
79	COMP			↑		
80	323.077714	13:28	+31:59	3	9m	
81	COMP			↑		
82	323.078147	13:25	+32:20	3	8m	
83	COMP			↑		
84	323.078173	13:24	+32:01	3	8m	
85	COMP			↑		
86	323.078427	13:42	+32:01	3	10m	
87	COMP			↑		
88	323.078684	13:47	+32:20	3	10m	
89	COMP			↑		

10:45 -
P¹ 2200-11:30

60 inch Telescope Log

Observer: PBPI: Geller & Hutchra & WilkesSpectrograph: FASTGrating: 300RDate: 5/7/96Page: 4649

Number	Object	R.A.	Dec.	L/R	Exp	Comments
90	323.078872	13:25	+72:05	3	10m	bright sky
91	COMP			↑		
92	323.079255	13:23	+72:06	3	8m	
93	COMP			↑		
94	323.079466	13:19	+72:05	3	10m	
95	COMP			↑		
96	323.075868	13:39	+72:09	3	15m	LSB em
97	COMP			↑		
98	323.076007	13:40	+72:09	3	7m	star - red;
99	COMP			↑		worse seeing
100	MRK 279	13:51	+69:33	6	2m	
101	COMP			↑		
102	N5548	14:45	+25:22	6	2m	
103	COMP			↑		
104	15106p7112	15:10	+71:01	1	5m	
105	COMP			↑		
106	15122p6451	15:12	+64:43	1	4m	
107	COMP			↑		
108	15153p6930	15:15	+69:19	1	4m	North Comp
109	COMP			↑		
110	15155p6928	15:15	+69:17	1	4m	South Comp
111	COMP			↑		
112	15191p6541	15:19	+67:31	1	3m	
113	COMP			↑		
114	15206p7354	15:19	+73:44	1	5m	
115	COMP			↑		
116	15215p6905	15:21	+68:55	1	4m	
117	COMP			↑		
118	15229p741EW	15:20	+79:31	1	10m	EW comps; both comps H-α
119	COMP			↑		

Mem 19:40 -17

60 inch Telescope Log

Observer: PB

PI: Geller

Spectrograph: FAST

Grating: 300R

Date: 07/19/96

Page: 4651

Number	Object	R.A.	Dec.	L/R	Exp	Comments
150	329.051825	15:58	+28:13	3	5m	
151	COMP			↑		
152	329.053132	16:03	+28:17	3	5m	OK
153	COMP			↑		thin clouds..
154	329.055142	15:54	+28:18	3	6m	
155	COMP			↑		
156	329.056576	16:05	+28:24	3	5m	
157	COMP			↑		
158	329.056964	16:12	+28:25	3	5m	
159	COMP			↑		
160	329.057225	16:05	+28:26	3	5m	
161	COMP			↑		
162	329.061548	16:16	+28:34	3	5m	sky too bright? pull
163	COMP			↑		
164-166	CICing	19:50	+35:41	12	2, 20, 60s	
167	COMP			↑		
168-170	HD192181	20:10	+40:07	0	5s	
171	COMP			↑		
172-178	HD195185N			0	5s	thin clouds after a dawn
179	COMP			↑		
180-183	HD191765			0	2s	
184	COMP			↑		
185-188	HD192103			0	2s	
189	COMP			↑		
190-192	HD193793			0	1s	
193	COMP			↑		
194-203	BIAS			0	0s	
204-213	FLAT			0	6s	
214-220	BIAS			2	0s	bin by 2
221-233	FLAT				7s	"

60 inch Telescope Log

Observer: PSPI: Wilkes/HuchraSpectrograph: FASTGrating: 300, 3" Slit, 6mby4Date: 5/8/96Page: 4652

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BTAS			0	0s	clear; some haze
11-20	FLAT			0	6s	
21-25	sky			0	2s	
26	COMP			↑	5s	
27-30	HD98839	11:22	+43:28	0	2s	
31	COMP			↑		
32-34	AGK2p45728	09:52	+43:28	0	5s	
35	COMP			↑		
36-37	Ferne 66	12:34	+75:20	0	30s	
38	COMP			↑		
39	N4151	12:08	+79:41	6	30s	
40	COMP			↑		
41-44	N4486B	12:30	+72:29	0	2m	
45	COMP			↑		
46	MRK421	11:01	+38:28	6	4m	
47	COMP			↑		
48	09210 p5226	09:24	+52:26	1	4m	
49	COMP			↑		
50	09240 p5534	09:24	+55:34	1	4m	corrupted file? (it was)
51	COMP			↑		ok now; aka test5.imh
52	09250 p5102	09:25	+52:02	1	5m	
53	COMP			↑		
54	09302 p5154	09:30	+55:54	1	4m	
55	COMP			↑		
56	09303 p5146	09:30	+51:46	1	4m	
57	COMP			↑		
58	U05301	09:24	+77:25	1	5m	em
59	COMP			↑		
60	PG0804 A761	08:10	+76:02	49	12m	interstellar Ca?
61	COMP			↑		

60 inch Telescope Log

Observer: PB
 PI: Wilkes & Hutchra

Spectrograph: F15T

Grating: 300L

Date: 5/8/96

Page: 4653

Number	Object	R.A.	Dec.	L/R	Exp	Comments
62	PG 0838p770	08:44	+76:53	49	15m	
63	COMP			↑		
64-65	PG 0934p554	09:34	+88:19	0	60s	
66	COMP			↑		
67	UOS 128	09:35	+84:02	1	10m	em
68	COMP			↑		
69	09400p8204	09:40	+82:04	1	5m	
70	COMP			↑		
71	09271p6959N	09:27	+69:59	1	5m	North Comp
72	09271p6959S	"	"	1	10m	South em
73	COMP			↑		
74	UOS 113	09:32	+66:47	1	4m	clear; seeing ~2"
75	COMP			↑		
76	09375p6537	09:37	+68:37	1	5m	em
77	COMP			↑		
78	US 163	09:38	+68:38	1	15m	em
79	COMP			↑		
80	09460p6725E	09:46	+67:25	1	5m	
81	COMP			↑		
82	09464p6659	09:46	+66:59	1	4m	
83	COMP			↑		
84	UOS 268	09:47	+62:25	1	5m	
85	COMP			↑		
86	09578p5557	09:57	+55:57	1	5m	big blob; em
87	COMP			↑		
88	09586p5530	09:58	+55:30	1	4m	
89	COMP			↑		
90	10045p4624	10:04	+46:24	1	4m	
91	10046p4625	10:04	+46:25	1	5m	
92	COMP			↑		

60 inch Telescope Log			Spectrograph: <u>FAST</u>			
Observer: <u>PB</u>			Grating: <u>3002</u>		Page: <u>4651</u>	
PI: <u>Geller & Grogan</u>			Date: <u>5/8/96</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
93	320.060012	12:27	+30:09	3	7m	
94	COMP			↑		
95	320.071795	12:23	+30:52	3	8m	
96	COMP			↑		
97	320.000070	12:13	+26:10	3	12m	* on slit to W; em N° * to East
98	COMP			↑		
99	320.000184	12:04	+26:08	3	12m	em
100	COMP			↑		
101	320.001368	12:23	+26:14	3	10m	
102	COMP			↑		
103	323.079907	13:40	+32:09	3	10m	
104	COMP			↑		
105	323.081598	13:23	+32:10	3	5m	
106	COMP			↑		
107	323.081066	13:22	+32:14	3	5m	main
108	COMP			↑		
109	323.081418	13:30	+32:17	3	8m	
110	COMP			↑		
111	323.081759	13:38	+32:18	3	8m	em
112	COMP			↑		
113	323.081780	13:32	+32:19	3	6m	
114	COMP			↑		
115	323.082542	13:26	+32:22	3	10m	nice lines
116	COMP			↑		
117	323.082640	13:32	+32:24	3	7m	finishes the plate!
118	COMP			↑		
119	13418 p2655	13:41	+25:54	42	12m	
120	COMP			↑		
121	13484 p5117	13:48	+35:17	42	10m	
122	COMP			↑		

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>4655</u>	
Observer: <u>PB</u>			Grating: <u>700R</u>			
PI: <u>Wilkes/Arroyo/Geller</u>			Date: <u>5/8/96</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
123	H244	13:21	+36:23	0	60s	
124	COMP			↑		a few thin clouds - haze
125	AKS18	14:15	+25:22	6	2m	
126	COMP			↑		
127	MPK27A	13:51	+69:33	6	90s	
128	COMP			↑		
129	I1124	15:27	+23:48	42	12m	
130	COMP			↑		
131	I4553	15:32	+23:40	42	15m	<u>DS</u> = Diffuse
132	COMP			↑		
133	327.089476	15:27	+32:21	3	7m	
134	COMP			↑		
135	327.089400	15:16	+32:14	3	8m	
136	COMP			↑		
137	327.089506	15:18	+32:23	3	7m	
138	COMP			↑		
139	327.089913	15:23	+32:24	3	7m	
140	COMP			↑		
141	327.090329	15:30	+31:24	3	3m	positive id; <u>star</u> K
142	COMP			↑		
143	328.031824	15:28	+27:56	3	7m	
144	COMP			↑		
145	328.034867	15:47	+27:59	3	7m	
146	COMP			↑		
147	328.03607	15:32	+28:02	3	5m	finishes the notebook
148	COMP			↑		
149	329.05777X	16:21	+28:25	3	8m	
150	COMP			↑		
151	329.061518	16:16	+28:34	3	6m	redo from 5/7/96
152	COMP			↑		

Moon: 20:30 -15

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>4656</u>
Observer: <u>PB</u>				Grating: <u>700R</u>		Date: <u>5/8/96</u>
PI: <u>Barmby/Wilkes</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
153	H1	16:12	+14:47	48	1m	Star
154	COMP			↑		seeing worse
155	H2	15:58	+17:52	48	4m	
156	COMP			↑		
157	H3	16:07	+18:38	48	4m	
158	COMP			↑		
159	H4	16:02	+18:07	48	10m	Weak emission
160	COMP			↑		
161	H5	16:13	+14:55	48	7m	
162	COMP			↑		
163	H6	16:05	+16:10	48	7m	
164	COMP			↑		
165	H7	16:08	+18:12	48	6m	Comp to W on slit
166	COMP			↑		
167	H9	15:56	+15:18	48	4m	cm
168	COMP			↑		
169	H21	15:58	+18:06	48	5m	
170	COMP			↑		
171	3C390.3	18:45	-72:43	6	2m	
172	COMP			↑		
173-175	CIC 77	19:50	+35:41	12	6, 20, 2	
176	COMP			↑		
177-179	HD17251	20:10	+10:07	0	5s	3, 4, 5, 6, 7
180	COMP			↑		
181-184	HD165762	18:08	-18	0	2s	
185	COMP			↑		
186-190	HD165763	18:09	-21	0	2s	
191	COMP			↑		
192-195	HD167263	18:15	-20	0	2s	
196	COMP			↑		

60 inch Telescope log

Observer: P. BerlindPI: Huchra/WilkasSpectrograph: FASTGrating: 300L, 3" slit, bmbg 4Page: 4658Date: 5/1/96

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BITS				0s	
11-20	FLAT				6s	cirrus to far W+S
21-25	sky				2s	
26	COMP				5s	
27-29	HD 74915	08:43	-07:14	0	2s	
30	COMP			↑		
31-34	2SSer	10:23	-01:01	0	2s	
35	COMP			↑		
36-39	NS115	10:02	-07:28	0	30s, 45s	
40	COMP			↑		
41	N4151	12:08	+39:41	6	30s	
42	COMP			↑		
43	N4051	12:00	+44	6	2m	
44	COMP			↑		
45-46	Forn 34	10:34	+47:21	0	1m	
47	COMP			↑		
48	MRK 421	11:01	+38:28	6	4m	
49	COMP			↑		
50	10267 p5201	10:26	+52:01	1	4m	
51	COMP			↑		
52	10269 p4857	10:26	+48:37	1	4m	em
53	COMP			↑		
54	10319 p4532	10:31	+45:32	1	3m	
55	COMP			↑		seeing ~ 1.8"
56	NGC 2992	09:45	-11:19	49	10m	
57	COMP			↑		
58	PG 0947 p356	09:50	+39:26	49	20m	
59	COMP			↑		
60	PG 0934 p554	09:34	+35:19	0	2m	
61	COMP			↑		

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>4659</u>	
Observer: <u>PB</u>				Grating: <u>ROR</u>			
PI: <u>Kirshner/Huchra</u>				Date: <u>5/19/96</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments	
62	U05377	09:51	+75:15	1	10m	few secamp ~2"	
63	COMP			↑			
64	09574p7943	09:57	+77:43	1	5m		
65	COMP			↑			
66	U05386	09:58	+70:52	1	4m		
67	COMP			↑			
68,70	SN1996W	11:59	+19:15	2	15m	bin by 2	
69,71	COMP			↑	8s		
72-73	F0434	10:31	+41:21	0	1m		
74	COMP			↑			
75	10321p4500	10:32	+45:00	1	4m		
76	COMP			↑			
77	10322p4452	10:32	+44:52	1	4m		
78	COMP			↑			
79	10445p5208	10:44	+52:08	1	3m		
80	COMP			↑			
81	U05525	10:46	+52:10	1	3m		
82	COMP			↑			
83	10511p5378	10:51	+53:18	1	9m	Hue	
84	COMP			↑			
85	SN1996X	13:18	-26:30	2	15m	bin by 2	
86	COMP			↑			
87	PG1216p065	12:19	+06:38	49	20m		
88	COMP			↑			
89	NGC493	12:39	-05:20	49	8m		
90	COMP			↑			
91	PG1229p201	12:32	+20:09	49	20m		
92	COMP			↑			
93	13349p2438	13:37	+24:23	49	15m		
94				↑			

5848 302

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>4660</u>	
Observer: <u>PB</u>			Grating: <u>300R</u>			
PI: <u>Wilkes & Geller</u>			Date: <u>5/9/86</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
95-96	H244	13:21	+36:22	0	1m	
97	COMP			↑		
98-99	Fere 34	10:34	+13:21	0	1m	
100	COMP			↑		
101,103	1413p1143	14:15	+11:29	49	20m	$Z = 2.55!$
102,104	COMP			↑		
105	H11419p480	14:21	+47:47	49	15m	
106	COMP			↑		
107	PG 1534p580	15:35	+57:54	49	12m	dome run-away cut
108	COMP			↑		exposure short from 15 to 12m
109	PG 1535p547	15:36	+54:33	49	15m	
110	COMP			↑		seeing better
111	N5548	14:15	+25:22	6	2m	
112	COMP			↑		
113-114	H244	13:21	+36:22	0	1m	
115	COMP			↑		
116	MRK 279	13:51	+19:33	6	90s	
117	COMP			↑		
118	328.104060	15:38	+31:14	3	5m	
119	COMP			↑		
120	328.104924	15:56	+31:14	3	6m	
121	COMP			↑		
122	328.107587	15:53	+31:24	3	6m	
123	COMP			↑		
124	328.109032	15:46	+31:30	3	6m	em high z
125	COMP			↑		
126,128	328.115650	15:36	+31:52	3	4m, 12m	superposed *
127,129	COMP			↑		reduce # 128
128	328.119668	15:39	+32:05	3	5m	
129	COMP			↑		

60 inch Telescope Log		Spectrograph: <u>FAST</u>		Page: <u>4663</u>		
Observer: <u>P.berlind</u>		Grating: <u>3002, 3" slit, bimby</u>		Date: <u>5/14/96</u>		
PI: <u>Huchra</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS				05	tilt = 60°
11-20	FLAT				65	clear skies
21-25	sky	zenith			25	
26	COMP				55	
27-30	HD87449			0	6	
31	COMP			↑	↑	
32-34	HD82328	09:32	+51:41	0	0.35	
35	COMP			↑		
36	N4151	12:06	+59:41	6	305	
37	COMP			↑		
38	N4051	12:00	+44:48	6	2m	
39	COMP			↑		
40-41	Feyj66	12:34	+25:20	0	1m	
42	COMP			↑		
43	MRK079	13:51	+69:33	6	905	
44	COMP			↑		
45	N5546	14:15	+25:22	6	2m	
46	COMP			↑		
47	PK221p451	09:47	+13:16	0	4m	
48	COMP			↑		
49	0839 Sp905	08:41	+40:55	1	5m	
50	COMP			↑		
51	08390 p0221	08:40	+02:11	1	10m	em
52	COMP			↑		part seeing ~2-3"
53	08464 p0734	08:49	+07:22	1	10m	
54	COMP			↑		
55	08530 p5207N	08:56	+51:55	1	5m	NE Comp
56	08530 p5207S	08:56	+51:52	1	5m	
57	COMP			↑		
58	08586 p6758	08:58	+67:58	1	6m	em

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>4664</u>
Observer: <u>PB</u>		Grating: <u>200L</u>		Date: <u>5/14/66</u>		
PI: <u>Huchra & Geller</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
59	COMP			↑		poor seeing
60	09557p5812D	09:55	+58:12	↓	4m	W Comp
61	09557p5812E	09:55	+58:12	↓	10m	E Comp (NE) em
62	COMP			↑		same construction from W halo
63	A12244p1056	12:24	+10:56	↓	20m	LSB
64	COMP			↑		
65	10240p1619	10:24	+16:19	↓	7m	em
66	10248p4616	10:24	+16:16	↓	7m	em
67	COMP			↑		
68	10265p5002	10:26	+50:02	↓	6m	sup * em
69	COMP			↑		
70	317.026539	11:12	+28:02	3	10m	em
71	COMP			↑		
72	317.011778	10:54	+26:53	3	7m	em
73	COMP			↑		
74	317.030619	11:08	+28:24	3	10m	em
75	COMP			↑		
76	317.031490	11:08	+28:30	3	6m	
77	COMP			↑		
78	317.031525	10:45	+28:29	3	6m	
79	COMP			↑		
80	317.050027	11:01	+30:06	3	7m	
81	COMP			↑		
82	317.059906	11:05	+30:59	3	6m	
83	COMP			↑		
84	317.063769	11:07	+31:18	3	7m	
85	COMP			↑		
86	317.063743	11:05	+31:21	3	7m	
87	COMP			↑		
88	317.064169	10:59	+31:24	3	5m	star on slit tail

60 inch Telescope Log

Observer: PBSPI: Geller & Brogi & KowalySpectrograph: FASTGrating: 300RPage: 466SDate: 6/14/96

Number	Object	R.A.	Dec.	L/R	Exp	Comments
87	COMP			↑		
90	317.066318	11:11	+26:43	3	7m	H ₂
91	COMP			↑		
92	318.000517	11:13	+26:06	3	4m	poor seeing
93	COMP			↑		
94	318.005664	11:25	+26:41	3	6m	
95	COMP			↑		
96	318.006648	11:17	+26:43	3	5m	
97	COMP			↑		
98	318.606373	11:26	+26:45	3	7m	
99	COMP			↑		
100	318.043912	11:37	+30:42	3	7m	
101	COMP			↑		
102	318.046998	11:37	+31:17	3	7m	
103	COMP			↑		
104	14523p2413	14:52	+24:13	42	20m	
105	COMP			↑		
106	15317p2119	15:11	+21:18	42	15m	
107	COMP			↑		
108	15363p3320	15:36	+33:20	42	15m	
109	COMP			↑		
110	awm4-04	16:04	+23:58	35	4m	
111	COMP			↑		
112	awm4-01	16:04	+23:55	35	2m	
113	COMP			↑		
114	awm4-02	16:05	+23:40	35	7m	
115	COMP			↑		
116	awm4-03	16:05	+23:45	35	3m	
117	COMP			↑		
118H	BDP332642	15:50	+33:05	0	60s	24 H ₂ =+1; z=1.02

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>4666</u>	
Observer: <u>PB</u>			Grating: <u>300R</u>		Date: <u>5/14/96</u>	
PI: <u>Koranyi</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
120	COMP			↑		
121	awm4_05	16:03	+24:05	35	5m	
122	COMP			↑		
123	awm4_06	16:04	+23:59	35	7m	
124	COMP			↑		
125	awm4_08	16:05	+23:55	35	6m	
126	COMP			↑		
127	awm4_07	16:04	+23:59	35	5m	awm4_43 on slit to W v. faint
128	COMP			↑		
129	awm4_09	16:04	+23:56	35	6m	
130	COMP			↑		
131	awm4_10	16:04	+23:50	35	8m	
132	COMP			↑		
133	awm4_11	16:04	+23:57	35	8m	
134	COMP			↑		
135	awm4_12	16:04	+23:49	35	10m	
136	COMP			↑		
137	awm4_13	16:05	+24:10	35	10m	
138	COMP			↑		
139	awm4_14	16:04	+23:38	35	15m	★ wk em?
140	COMP			↑		
141	awm4_15	16:05	+23:51	35	12m	
142	COMP			↑		
143	awm4_16	16:04	+24:15	35	1m	str -F
144	COMP			↑		
145	awm4_17	16:04	+24:11	35	10m	
146	COMP			↑		
147	awm4_18	16:04	+24:05	35	10m	em
148	COMP			↑		
149	awm5_01	16:04	+27:45	35	15m	

60 inch Telescope Log

Observer: PJB

PI: Kerans & Wilcox

Spectrograph: FAST

Grating: 3002

Date: 5/17/56

Page: 4667

Number	Object	R.A.	Dec.	L/R	Exp	Comments
150	COMP			↑		
151	α CM 5.04	16:57	+27:51	35	2m	
152	COMP			↑		
153	α CM 5.05	16:57	+25:50	35	6m	
154	COMP			↑		
155	MRK 509	20:41	-10:54	6	7m	
156	COMP			↑		
157-158	Comet HD	19:37	-16:10	0	30, 1m	nucleus; tail
159	COMP			↑		
160-162	Cy Cyg	19:50	+35:41	12	60, 10, 2	
163	COMP			↑		
164-166	HD 192251	20:10	+40:07	0	5s	
167	COMP			↑		
169-171	HD 192463	20:12	38:21	0	2s	
172	COMP			↑		
173-175	HD 192428	20:21	36:55	0	2s	
176	COMP			↑		
177-180	HD 192377	20:17	38:01	0	2s	
181	COMP			↑		
182-191	BIAS			0	0s	
192-201	FLAT			0	6s	

60 inch Telescope Log

Observer: Pberlind

PI: Huchra & Geller

Spectrograph: FAST

Grating: 302

Date: 5/15/96

Page: 4658

Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-10	BIAS			0	0s	Clear skies!
11-20	FLAT			0	6s	
21-25	sky			0	2s	
26	COMP			↑	5s	
27-29	N3115	10:02	-07:28	0	30s	
30	COMP			↑		
31	N4151	12:08	+37:41	6	20s	
32	COMP			↑		
33	MRK279	13:51	+69:33	6	90s	
34	COMP			↑		
35	N5548	14:15	+25:22	6	2m	
36	COMP			↑		
37-38	Fer366	12:34	+25:20	0	1m	
39	COMP			↑		
40	MRK421	11:01	+38:28	6	4m	
41	COMP			↑		
42	10404 p5602	10:40	+56:02	1	4m	
43	10407 p5600	10:40	+56:00	1	4m	em++
44	COMP			↑		
45	10387 p5612	10:38	+56:12	1	7m	
46	COMP			↑		
47	U05076	09:29	+57:06	1	15m	Very LSB + large no em!
48	COMP			↑		
49	11495 p1410	11:52	+13:54	1	15m	Very LSB weak em
50	COMP			↑		@ pix 2022; also cosmic
51	317.06603	10:43	+31:32	3	6m	
52	COMP			↑		
53	317.06706	10:47	+31:39	3	6m	no on slit HE
54	COMP			↑		
55	317.06752	10:51	+31:44	3	6m	em++

60 inch Telescope Log			Spectrograph: <u>FAST</u>			Page: <u>4669</u>
Observer: <u>PB</u>			Grating: <u>300L</u>			Date: <u>5/15/96</u>
PI: <u>Geller & Kirshner</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
56	COMP			↑		seeing - 2"
57	317.068109	11:04	+31:44	3	7m	
58	COMP			↑		
59	317.073255	10:56	+32:11	3	7m	em
60	COMP			↑		
61	317.004377	10:43	+26:15	3	7m	
62	COMP			↑		
63	317.061629	11:01	+31:10	3	7m	
64	COMP			↑		
65	SN1996X	13:18	-26:50	2	20m	bin by 2
66	COMP			↑		
67-68	H244	13:21	+36:23	0	1m	26
69	COMP			↑		
70	318.006771	11:14	+26:46	3	6m	em
71	COMP			↑		
72	318.007351	11:17	+26:41	3	7m	
73	COMP			↑		
74	318.007492	11:25	+26:52	3	6m	
75	COMP			↑		
76	318.008190	11:28	+26:57	3	6m	
77	COMP			↑		
78	318.008337	11:31	+26:57	3	7m	
79	COMP			↑		
80	318.009188	11:32	+27:02	3	6m	
81	COMP			↑		
82	318.009558	11:37	+27:05	3	6m	em
83	COMP			↑		
84	318.009605	11:23	+27:06	3	7m	
85	COMP			↑		
86	318.010521	11:19	+27:11	3	6m	em

60 inch Telescope Log			Spectrograph: <u>FAST</u>			
Observer: <u>PB</u>			Grating: <u>300R</u>		Page: <u>4670</u>	
PI: <u>Geller & Wilkes</u>			Date: <u>5/15/96</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
87	COMP			↑		
88	318.01294	11:39	+27:20	3	7m	seeing ~2"
89	COMP			↑		
90	318.01442	11:16	+27:34	3	10m	em LSB
91	COMP			↑		
92-93	H244	13:21	+30:23	0	1m	high background
94	COMP			↑		
95-97	14026p4341	14:04	+43:29	49	15m	x2
96-98	COMP			↑		
99, 101	PG1543p489	15:43	+48:44	49	20m	x2
100, 102	COMP			↑		
104, 105	BDp 332042	15:50	+33:05	0	1m	#103 = BIAS
106	COMP			↑		
107, 108	H244	13:21	+30:23	0	1m	
109	COMP			↑		FAST dewar has lost vacuum and has warmed up.
110	DARK			-	5m	???????????
111-115	BIAS			-	0s	
						dewar filled with pump is not sticking anymore
116	328.124317	15:53	+32:18	3	6m	
117	COMP			↑		
118	328.125947	15:39	+32:24	3	10m	
119	COMP			↑		data actually looks ok!!
120	328.126677	15:30	+32:30	3	8m	chip may need to be re-flooded though
121	COMP			↑		
122	328.126167	15:31	+32:23	3	8m	
123	COMP			↑		
124	328.126502	15:28	+32:24	3	6m	

near of 110 - H2
near of dark e end 2

60 inch Telescope Log
 Observer: PB
 FI: Celler
 Spectrograph: FAST
 Grating: 300L
 Date: 5/15/96
 Page: 4671

Number	Object	R.A.	Dec.	L/R	Exp	Comments
125	COMP			↑		
126	328-127308	15:51	+32:27	3	8m	dark count ok seeing < 2"
127	COMP			↑		
128	328-129896	15:46	+32:35	3	7m	
129	COMP			↑		
130	328-130888	15:57	+32:36	3	6m	
131	COMP			↑		
132	328-131259	15:41	+32:39	3	5m	Finishes the plate!
133	COMP			↑		
134	329-026285	16:17	+27:23	3	10m	
135	COMP			↑		
136	329-026440	16:05	+27:24	3	5m	
137	COMP			↑		
138	329-026796	16:04	+27:24	3	5m	
139	COMP			↑		
140	329-026883	16:13	+27:25	3	7m	
141	COMP			↑		
142	329-027199	15:56	+27:25	3	6m	omit
143	COMP			↑		
144	329-027529	16:05	+27:26	3	6m	
145	COMP			↑		
146	329-027900	15:55	+27:27	3	6m	
147	COMP			↑		
148	30390.3	18:45	+79:43	6	3m	
149	COMP			↑		
150-152	CIC Lyg	19:50	+35:41	12	10, 20, 25	
153	COMP			↑		
154-156	HD 92281	20:10	+40:07	0	5	
157	COMP			↑		
158-177	BIAS			0	0s	
178-197	FLAT			0	6s	
198-207	BIAS			2	0s	bin by 2
208-217	FLAT			2	12s	bin by 2
218-222	DARK			0	15m	bin by 4

60 inch Telescope Log

Observer: PberlindPI: Wilkes/HuchraSpectrograph: FASTGrating: 3002, 3'SIA, 6mb, 4Page: 4672Date: 5/16/96


Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIDS			0	0s	
11-20	FLAT			0	6s	
21-25	SKY			0	2s	Very blue; lots of cirrus
26	COMP			↑	5s	in far West
27-29	HD82328	09:32	+51:41	0	1s	
30	COMP			↑		
31-33	HD89449	10:19	+19:26	0	1s	
34	COMP			↑		
35-37	Wilson 6377	09:58	+55:50	0	5s	
38	COMP			↑		
39-40	Feyze 34	10:36	+43:21	0	30s	
41	COMP			↑		
42	NHIS1	12:08	+39:41	6	30s	
43	COMP			↑		
44-46	MRK 279	13:51	+69:33	6	90s 2m	
47	COMP			↑		
48	NSS 86	14:05	+25:22	6	2m	
49	COMP			↑		
49-50	Feyze 66	12:34	+25:20	0	1m	
51	COMP			↑		
52	MRK 421	11:	+X	6	4m	poor seeing 2"
53	COMP			↑		
54	10269 p 5106	10:46	+51:06	1	8m	em
55	COMP			↑		
56	10269 p 5042 S	10:26	+50:42	1	5m	
57	COMP			↑		
58	UO 6109	10:59	+50:52	1	6m	em
59	COMP			↑		
60	UO 5917	10:46	+46:55	1	20m	LSB H-d!!
61	COMP			↑		red 6m 6/5/96

60 inch Telescope Log

Observer: PB
 PI: Huchra & Beller

Spectrograph: FST
 Grating: 202
 Date: 5/16/96

Page: 4673

Number	Object	R.A.	Dec.	L/R	Exp	Comments
62	08462p1125	08:46	+11:25	1	6m	em+
63	COMP			↑		
64	094235p1751	09:42	+17:51	1	10m	em+++
65	COMP			↑		
66	100805p0625	10:10	+06:11	1	7m	em
67	COMP			↑		
68	112224p0256S	11:22	+02:56	1	6m	South em
69	112224p0256N	11:22	+02:56	1	6m	North em
70	COMP			↑		
71	121941p0009EW	12:19	+00:09	1	4m	" close EW pair em
72	121941p0009EW	12:19	+00:09	1	6m	bin by 2 em
73	COMP			↑		He-redshifted off the chip
74	317.006229	10:47	+26:34	3	6m	
75	COMP			↑		
76	317.012585	11:09	+26:55	3	6m	em
77	COMP			↑		
78	317.016398	10:45	+27:14	3	6m	thin clouds
79	COMP			↑		seeing ~2"
80	317.016963	10:50	+27:16	3	6m	
81	COMP			↑		
82	317.018392	10:54	+27:25	3	7m	
83	COMP			↑		
84	317.018864	10:52	+27:28	3	7m	
85	COMP			↑		
86	317.021255	10:55	+27:40	3	7m	em+
87	COMP			↑		
88	317.062103	10:53	+27:13	3	7m	
89	COMP			↑		
90	317.028319	11:11	+28:12	3	7m	
91	COMP			↑		

60 inch Telescope Log

Observer: PBPI: GellerSpectrograph: FASTGrating: 302Page: 4674Date: 5/16/96

Number	Object	R.A.	Dec.	L/R	Exp	Comments
92	317.028356	11:11	+28:12	3	7m	
93	COMP			↑		
94	317.033709	10:55	+28:40	3	7m	
95	COMP			↑		clouds...
96	318.015318	11:24	+27:42	3	6m	
97	COMP			↑		
98	318.015368	11:24	+27:42	3	7m	em
99	COMP			↑		
100	318.015378	11:22	+27:42	3	7m	faint comp to N
101	COMP			↑		
102	318.018668	11:14	+27:42	3	6m	star to E; gal to W
103	COMP			↑		• → 328.015608 ↳ 328.015609
104	318.016497	11:19	+27:47	3	7m	
105	COMP			↑		
106	318.018652	11:22	+28:05	3	7m	em
107	COMP			↑		
108	318.024229	11:14	+28:37	3	7m	
109	COMP			↑		
110	318.035567	11:36	+28:46	3	8m	redo
111	COMP			↑		
112	318.035878	11:32	+29:50	3	8m	
113	COMP			↑		
114	324.002329	13:45	+26:20	3	8m	em
115	COMP			↑		
116	324.014089	13:49	+27:03	3	8m	
117	COMP			↑		
118	324.016446	14:02	+27:11	3	8m	weak em
119	COMP			↑		
120	324.019414	13:50	+27:21	3	10m	
121	COMP			↑		

60 inch Telescope Log

Observer: PB

PI: Geller & Koranyi

Spectrograph: FAST

Grating: WOR

Date: 5/16/96

Page: 4275

Number	Object	R.A.	Dec.	L/R	Exp	Comments
122	324.072813	15:58	+28:07	3	8m	clouds ...
123	COMP			↑		
124	324.035580	14:41	+28:10	3	10m	
125	COMP			↑		
126	awm4-21	16:04	+27:57	35	10m	
127	COMP			↑		
128	awm4-22	16:06	+28:04	35	12m	close pair
129	COMP			↑		
130	awm4-23	16:04	+27:45	35	10m	
131	COMP			↑		
132	awm4-24	16:07	+23:37	35	15m	
133	COMP			↑		
134	awm4-25	16:03	+23:56	35	15m	
135	COMP			↑		
136	329.030073	15:57	+27:28	3	10m	increasing clouds
137	COMP			↑		burner
138	329.050144	16:07	+27:31	3	6m	
139	COMP			↑		
140	329.030913	16:03	+27:33	3	8m	
141	COMP			↑		
142	329.032514	15:58	+27:34	3	10m	
143	COMP			↑		
144	329.053660	16:07	+27:38	3	10m	
145	COMP			↑		
146	329.040865	16:05	+27:53	3	12m	
147	COMP			↑		
148	329.067348	16:13	+28:46	3	15m	weak Ha; bright sky
149	COMP			↑		
150-152	CFCyg	19:50	+35:41	12	60, 20, 20	
153	COMP			↑		

60 inch Telescope Log		Spectrograph: <u>FAST</u>				
Observer: <u>E. Bowden</u>		Grating: <u>300, 3" slit / binary 4</u>			Page: <u>4677</u>	
PI: <u>Wilkes/Geller</u>		Date: <u>5/7/96</u>				
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS			0	0s	light cirrus around at Sunset
11-20	FLAT			0	6s	
21-25	slcy			0	2s	
26	COMP			↑		
27-30	AGK2p43928	09:52	43:28	0	5s	slcy kinda bright...
30	COMP			↑		
31-32	Feige 66	12:34	25:20	0	1m	
33	COMP			↑		
34	NY151	12:08	+39:41	6	30s	
35	COMP			↑		
36	MRK279	13:51	69:33	6	10s	
37	COMP			↑		
38	MRK279	13:51	69:33	6	2m	↑
39	COMP			↑		
40	NSS88	14:15	25:22	6	2m	
41	COMP			↑		
42	MRK421	11:01	38:28	6	4m	dome moving... telescope may have been pointing to it? ↑ used. had dome position
43	COMP			↑		
44	NY051	12:00	44:48	6	2m	← dome OK now double size
45	COMP			↑		
46	SN NGC2935	09:36	-21:08	2	15m	binned by 2
47	COMP			↑		" " "
48	317.046676	11:00	29:49	3	7m	" " 4 again
49	COMP			↑		
50	317.046751	10:54	29:50	3	7m	
51	COMP			↑		
52	317.047090	10:59	29:52	3	7m	
53	COMP			↑		
54	317.047343	11:00	29:53	3	6m	
55	COMP			↑		

60 inch Telescope Log		Spectrograph: <u>FAST</u>				
Observer: <u>E. Barton</u>		Grating: <u>300L, 3" slit, bin by 4</u>			Page: <u>4678</u>	
PI: <u>Geller/Barton</u>		Date: <u>5/17/96</u>				
Number	Object	R.A.	Dec.	L/R	Exp	Comments
56	317.048018	10:59	29:56	3	6m	
57	COMP			↑		
58	317.048305	10:53	29:58	3	5m	
59	COMP			↑		
60	317.049076	11:04	30:01	3	7m	enough time? yes
61	COMP			↑		
62	317.050969	10:53	30:12	3	7m	
63	COMP			↑		
64	317.051079	11:10	30:09	3	5m	
65	COMP			↑		
66	317.051945	11:02	30:17	3	6m	
67	COMP			↑		
68	317.052051	10:49	30:17	3	6m	enough time? yes
69	COMP			↑		
70	317.055773	11:12	30:34	3	8m	
71	COMP			↑		
72	gn73-gal01	14:04	08:48	33	15m	diffuse galaxy! enough
73	COMP			↑		emission lines?
74	gn73-gal02	14:01	09:52	33	5m	
75	COMP			↑		
76	gn73-gal04	14:01	08:35	33	5m	
77	COMP			↑		
78	gn73-gal05	14:01	09:32	33	6m	
79				↑		
80	gn73-gal06	14:02	09:46	33	5m	
81	COMP			↑		
82	gn73-gal07	14:02	09:33	33	15m	
83	COMP			↑		
84	gn73-gal08	14:02	09:29	33	7m	big star off slit but
85	COMP			↑		nearby

60 inch Telescope Log			Spectrograph: FAST			
Observer: E. Barton			Grating: 3002, 3" slit, binby 4		Page: 4679	
PI: Barton / Koranyi / Keller			Date: 5/17/96			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
86	gr 73-gal09	14:02	09:03	33	17m	faint! no good star!
87				↑		- may not be good enough, but I don't know
88	gr 73-gal10	14:00	09:54	33	10m	
89				↑		
90	gr 73-gal11	14:01	09:30	33	20m	star on slit
91	COMP			↑		
92	awm4-19	16:05	24:07	35	15m	
93	COMP			↑		
94	awm4-26	16:04	23:52	35	8m	
95	COMP			↑		
96	awm4-27	16:04	23:56	35	8m	little star on slit
97	COMP			↑		
98	awm4-28	16:04	24:06	35	12m	little star on slit
99	COMP			↑		
100	awm4-30	16:04	24:02	35	8m	star? no
101	COMP			↑		
102	awm4-31	16:03	23:53	35	10m	TV dimmer? done OK.
103	COMP			↑		
104	awm4-33	16:04	23:48	35	15m	TV definitely dimmer...
105	COMP			↑		
106	329.028715	16:15	27:28	3	20m	faint!
107	COMP			↑		
108	329.031036	16:08	27:33	3	10m	I don't know why it looks like 2 objects - I think we want the brightest!
109	COMP			↑		
110	329.031046	15:51	27:30	3	9m	
111	COMP			↑		
112	329.031842	16:13	27:35	3	8m	
113	COMP			↑		
114	329.032735	16:00	27:35	3	9m	
115	COMP			↑		

60 inch Telescope Log

Observer: Barton
 PI: Geller/Wikes

Spectrograph: FAST

Grating: 300L, 3" slit, binby 4 Page: 4680
 Date: 5/17/96

Number	Object	R.A.	Dec.	L/R	Exp	Comments
116	329.033625	16:00	27:37	3	7m	poor guiding! ?
117	COMP			↑		
118	329.035268	15:59	27:40	3	6m	sky barely beginning to lighten...
119	COMP			↑		
120	329.040684	15:54	27:49	3	8m	
121	COMP			↑		
122	MKK 509	20:41	-10:54	6	1m	poor guiding?
123	COMP			↑		
124-126	CTC 19	19:50	35:41	12	2s, 2s, 1m	
127	COMP			↑		
128-130	HD 192281	20:10	40:07	0	5s	defocused & trailed (should I do this?)
131	COMP			↑		
132-134	HD 192281	20:10	40:07	0	5s	in focus, not trailed
135	COMP			↑		
136-138	C40B2 no 9	20:31	41:04	0	10s	in focus, not trailed
139	COMP			↑		sky getting brighter!
140-149	BIAS			0	0s	
150-159	FLAT			0	6s	
160-169	FLAT			0	12s	binned by 2
170-179	BIAS			0	0s	" " "

60 inch Telescope Log			Spectrograph: <u>FAST</u>			
Observer: <u>E. Barton</u>			Grating: <u>300D, 3" slit, binov, 4</u> Page: <u>4681</u>			
PI: <u>Wilkes/Geller</u>			Date: <u>5/18/96</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS			0	0s	just a few light clouds around, heavier to north
11-20	FLAT			0	6s	
21-25	sky			0	2s	
26	COMP			↑		
27-29	Wilson 6377	09:58	55:50	0	5s	defoc. trailed
30	COMP			↑		
31-32	N 3115	10:02	-07:28	0	90s	spiral galaxy!
33	COMP			↑		
34-35	Feigl 66	12:34	25:20	0	1m	
36	COMP			↑		
37	PG 0934554	09:34	55:19	0	2m	
38	COMP			↑		
39	MRK 421	11:01	38:28	6	4m	
40	COMP			↑		
41	NY 151	12:08	39:41	6	30s	
42				↑		
43-44	MRK 279	13:51	69:33	6	90s, 2m	
45	COMP			↑		
46	N 5588	14:15	25:22	6	2m	
47	COMP			↑		
48	317.056834	11:12	30:40	3	8m	
49	COMP			↑		
50	317.057931	11:05	30:48	3	7m	
51	COMP			↑		
52	317.058121	11:05	30:49	3	8m	star on slit (far away)
53	COMP			↑		poor guiding
54	318.037975	11:12	30:03	3	6m	star on slit
55	COMP			↑		
56	318.035995	11:24	29:51	3	6m	no guide star, poor
57	COMP			↑		guiding

60 inch Telescope Log				Spectrograph: <u>FAST</u>		
Observer: <u>E. Barton</u>				Grating: <u>300P, 3" slit, bin by 4, 1</u> Page: <u>4682</u>		
PI: <u>Geller/Kirkner/Barton/Kenyon</u>				Date: <u>5/18/96</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
58	318.0410732	11:19	30:23	3	9m	again, poor guiding
59	COMP			↑		
60	318.051462	11:11	31:33	3	7m	
61	COMP			↑		
62	318.053448	11:15	31:47	3	6m	
63	COMP			↑		
64	318.055208	11:18	31:59	3	8m	
65	COMP			↑		
66	318.055430	11:19	32:00	3	5m	
67	COMP			↑		
68	318.055431	11:17	32:00	3	8m	looks like only obj. on TV - spectrum OK?
69	COMP			↑		
70	319.057698	11:11	32:12	3	8m	clouded over during exposure - should redo!
71	COMP			↑		
72	SN-NGC5557	14:18	36:30	2	20m	binned by 1, may be cloudy.
73	COMP			↑		" " "
74	Feig 98	14:36	27:42	0	1m	" " " again!
75	COMP			↑		
76	gal 73 gal 12	14:06	09:21	33	10m	cloudy everywhere!
77	COMP			↑		
78	gal 76 gal 01	15:06	12:40	33	17m	still cloudy, LSB gal?
79	COMP			↑		probably need to redo on a better night
80	gal 77 gal 01	15:58	19:58	33	7m	still cloudy
81	COMP			↑		can't see much on TV
82	BDp284211	21:48	28:37	0	1m	clouded out!!
83	COMP			↑		wanted... clouded out 3m may have cleared a tiny bit - reopened to try
84-86	CIC 44	19:50	35:40	12	7s, 20s, 1m	cloudy standards
87	COMP			↑		
88-90	HD 192281	20:10	40:07	0	5s	too cloudy for other objects
91-100	BIAS			0	0s	forgot COMP!!!

25+ hrs
no not
used!

no crops for files 88, 89, 90 → NO reductions

60 inch Telescope Log				Spectrograph: <u>FAST</u>		
Observer: <u>E. Barton</u>				Grating: <u>300l; 3" slit, bin by 4, 2</u> Page: <u>4684</u>		
PI: <u>Wilkes/Gallea</u>				Date: <u>5/19/96</u>		
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS			0	0s	
11-20	FLAT			0	6s	sky pretty clear!
21-25	sky			0	2s	
26	COMP			↑		
27-29	AGK2p43928	09:52	43:28	0	5s	sky still bright! defocused
30	COMP			↑		a little windy...
31	N 3377	10:45	14:14	0	90s	
32	COMP			↑		
33-34	Feige 34	10:36	43:21	0	1m	still a bit bright
35	COMP					
36-37	Feige 66	12:34	25:20	0	1m	
38	COMP					
39	MRK 421	11:01	38:28	6	4m	
40	COMP			↑		
41	N 4151	12:08	39:41	6	90s	
42	COMP			↑		
43-44	MRK 279	13:51	69:33	6	90s, 2m	
45	COMP			↑		
46	N 5548	14:15	25:22	6	2m	
47	COMP			↑		
48	SN-NGC 2935	09:36	-21:08	2	10m	binned by 2, poor guiding
49	COMP			↑		some obs. streaked through during exposure
50	318.03587	11:36	29:46	3	11m	binned by 4 again
51	COMP			↑		redo from 5116
52	318.057698	11:11	32:12	3	10m	poor guiding
53	COMP			↑		plate 318 finished!
54	RG-H20-AH	13:17	33:07	3	5m	
55	COMP			↑		
56	RG-H20-AJ	13:17	33:45	3	5m	
57	COMP			↑		

RGH- Massimo

60 inch Telescope Log

Observer: E. Barton

PI: Geller/Barton/Gugin/Barton

Spectrograph: FAST

Grating: 300l, 3" slit, binny 4 - Page: 4685

Date: 5/19/96

Number	Object	R.A.	Dec.	L/R	Exp	Comments
58	RG180_AM	13:17	33:33	3	6m	
59	COMP			↑		
60	RG180_AS	13:18	33:20	3	10m	LSB galaxy
61	COMP			↑		
62	gn73-gal13	14:03	09:33	33	6m	
63	COMP			↑		
64	gn73-gal14	14:06	09:09	33	7m	poor guiding
65	COMP			↑		
66	gn73-gal15	14:02	09:38	33	10m	
67	COMP			↑		
68	gn73-gal16	14:02	09:57	33	7m	poor guiding
69	COMP			↑		
70	gn73-gal17	14:01	09:57	33	6m	
71	COMP			↑		
72	gn73-gal18	14:00	09:55	33	7m	
73	COMP			↑		
74	gn73-gal19	14:06	09:34	33	20m	really LSB; star on slit
75	COMP			↑		
76	gn73-gal20	14:01	09:09	33	7m	
77	COMP			↑		
78	gn73-gal A	14:02	09:20	33	10m	
79	COMP			↑		
80	IS04Sp2042	15:04	20:40	42	10m	want bright guy, but faint guy useful also (see 76 (both are gals))
81	COMP			↑		
82	gn73-gal B	14:02	09:20	33	12m	
83	COMP			↑		
84	gn73-gal C	14:02	09:20	33	15m	
85	COMP			↑		
86	gn73-gal Z1	14:0	08:59	33	6m	
87	COMP			↑		

Call Norm about file 80 (2 objects)
 ↑
 57415

60 inch Telescope Log

Observer: E. BartonPI: Barton/KoranyiSpectrograph: FASTGrating: 3001, 3" slit, b mby 4 Page: 4686Date: 5/19/96

Number	Object	R.A.	Dec.	L/R	Exp	Comments
88	gr73-gal22	14:03	09:06	33	7m	
89	COMP			↑		
90	gr76-gal01	15:06	12:40	33	8m	vedo from 5/18
91	COMP			↑		
92	gr76-gal02	15:06	12:33	33	8m	
93	COMP			↑		
94	gr76-gal03	15:08	13:23	33	10m	
95	COMP			↑		
96	gr76-gal04	15:05	12:14	33	7m	
97	COMP			↑		
98	gr76-gal05	15:05	13:17	33	6m	
99	COMP			↑		
100	gr76-gal07	15:05	12:47	33	7m	
101	COMP			↑		
102	gr76-gal08	15:08	12:27	33	8m	
103	COMP			↑		
104	gr76-gal09	15:06	12:12	33	8m	LSB, no guide star
105	COMP			↑		
106	gr76-gal11	15:06	12:31	33	10m	
107	COMP			↑		
108	gr76-gal12	15:07	13:01	33	17m	LSB
109	COMP			↑		
110	gr76-gal13	15:03	12:49	33	15m	
111	COMP			↑		
112	awm4-34	16:04	24:05	35	12m	
113	COMP			↑		
114	awm4-35	16:04	23:58	35	8m	bright galaxy on slit (far away)
115	COMP			↑		
116	awm4-36	16:04	23:54	35	9m	
117	COMP			↑		

60 inch Telescope Log

Observer: P. Berlind

PI: Wikes, Huchra, Geller

Spectrograph: FAST

Grating: 300L; 3" slit; bumpy

Page: 4688

Date: 5/20/96

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS			0	0s	hazy sky
11-20	FLAT			0	6s	no clouds
21-25	sky	zenith		0	2s	30:40
26	COMP			↑	5s	
27-29	HD01501	11:40	+74	0	2s	
30	COMP			↑		
31-33	HD13139	13:40	+86	0	2s	
34	COMP			↑		
35-37	HD101011	12:31	+55	0	4s	
38	COMP			↑		
39-41	HD110463	12:41	+85	0	4s	
42	COMP			↑		
43-45	AGK213928	09:52	+1328	0	5s	
46	COMP			↑		
47	N4151	12:46	+344	6	30s	
48	COMP			↑		
49	MRK279	13:51	+69:33	6	90s	
50	COMP			↑		
51-52	HZ44	13:23	+76:40	0	1m	8:10
53	COMP			↑		
54	N5548	14:5	+22:	6	2m	
55	COMP			↑		
56	11234p5225	11:23	+52:25	1	4m	
57	COMP			↑		
58	11045p5447	11:04	+54:47	1	6m	→ bin by 2
59	COMP			↑	5m	superficial * 2" E of gal on slit galaxy has H α -em
60	32003509	12:08	+26:25	3	6m	
61	COMP			↑		
62	320.004004	12:06	+26:25	3	6m	em +
63	COMP			↑		

COMOS 30 & 38 both have objects on them.

COULD NOT get a good wavelength solution
for file 59. + I worked on it
a long time.

60 inch Telescope Log

Observer: PlentelSpectrograph: FASTPI: Falko Geller / Wilkes / KirshnerGrating: 300LPage: 4689Date: 5/20/96

Number	Object	R.A.	Dec.	L/R	Exp	Comments
64	HS 8704 p363	07:49	+36:20	31	20m	bin by 2; slit PA = 50 (115)
65	COMP			↑	8s	A = MK @ row 80; B = QSO @ row 89
66	HS 1216 p 5032	12:18	+50:15	31	20m	bin by 2 slit PA = 55 (115)
67	COMP			↑		A = QSO @ row 79; B = ? @ row 71
68	SN 1986K	13:18	-26:50	2	15m	bin by 2
69	COMP			↑		
70-71	H244	13:21	+36:23	0	1m	bin by 4 L 1.00
72	COMP			↑		
73	MRK 421	11:01	+38:28	6	4m	special request
74	COMP			↑		seeing ~2"; clear
75	320.005286	12:06	+26:30	3	8m	
76	COMP			↑		
77	320.006107	12:09	+26:42	3	8m	
78	COMP			↑		
79	14026 p 4341	14:01	+43:27	49	20m	also observed 5/15/96
80	COMP			↑		
81,82	Feige 92	14:09	+50:21	0	90s	
83	COMP			↑		
84	PG 1476 p 015	14:29	+01:17	49	15m	
85	COMP			↑		
86	PG 1440 p 3526	14:42	+35:25	49	17m	
87	COMP			↑		
88-89	H244	13:21	+36:23	0	1m	
90	COMP			↑		
91,93	PG 1543 p 489	15:45	+48:46	49	20m	x2 also obs 5/15/96
92,94	COMP			↑		
95-96	BD p 332642	15:50	+33:05	0	60s	
97	COMP			↑		
98-99	H244	13:21	+36:23	0	60s	
100	COMP			↑		

60 inch Telescope Log

Observer: PBSpectrograph: FASTPI: Geller Wilkes HuchraGrating: 300RPage: 4690Date: 5/20/96

Number	Object	R.A.	Dec.	L/R	Exp	Comments
101	324.068578	13:49	+29:46	3	8m	
102	COMP			↑		
103	324.071704	13:51	+29:59	3	8m	em
104	COMP			↑		
105	324.074166	13:56	+30:00	3	8m	
106	COMP			↑		
107	PG1700 p518	17:00	+51:48	49	20m	
108	COMP			↑		
109	PG1708 p602	17:08	+60:13	0	5m	star
110	COMP			↑		
111-112	H244	13:21	+36:23	0	1m	
113	COMP			↑		
114	PG1704 p608	17:04	+60:49	49	20m	
115	COMP			↑		
116	PG1718 p481	17:18	+48:04	49	20m	seeing ~2"
117	COMP			↑		
118	Q1721 p343	17:23	+24:17	49	22m	
119	COMP			↑		
120	PG1708 p602	17:08	+60:13	0	5m	
121	COMP			↑		
122	160317 p17408	16:03	+17:44	25	4m	
123	COMP			↑		
124	160318 p174340	16:03	+17:43	25	6m	* on slit
125	COMP			↑		
126	160317 p15049	16:01	+15:02	25	4m	
127	COMP			↑		
128	160115 p202544	16:01	+20:25	25	4m	seeing <2"
129	COMP			↑		
130	160034 p195578	16:00	+19:55	25	4m	
131	COMP			↑		

60 inch Telescope Log

Observer: PB
 PI: Falco/Koranyi

Spectrograph: FAST
 Grating: 302R
 Date: 5/20/96

Page: 4691

Number	Object	R.A.	Dec.	L/R	Exp	Comments
132	MGB 1728p1931	17:28	+19:31	41	22m	nice sky
133	COMP			↑		faint galaxy! -got it
134	acm S_07	16:56	+21:40	35	12m	bin by 2; sup * to E; H _α
135	COMP			↑		
136	acm S_09	16:56	+21:37	35	10m	bin by 2 H _α
137	COMP			↑		
138	MRK509	20:41	-10:54	6	2m	
139	COMP			↑		
140-142	CICyg	19:50	+35:41	12	60s, 20s, 2s	⇒ 4:17
143	COMP			↑		
144-146	HD192281	20:10	+10:07	0	5s	
147	COMP			↑		
148-151	HD166802	18:12	+06	0	4s	
152	COMP			↑		
153-156	HD166774	18:12	-10	0	4s	
157	COMP			↑		
158-163	HD166815 N+S	18:22	-15	0	2s	
164	COMP			↑		clear & dawn
165-167	HD176123	18:55	-18	0	2s	photometerz night
168	COMP			↑		
169-171	HD178849	19:34	+34	0	2s	
172	COMP			↑		
173-182	BIAS			0	0s	
183-192	FLAT			0	6s	
193-212	BIAS			0	0s	bin by 2
213-232	FLAT			0	12s	bin by 2

60 inch Telescope Log

Observer: P. BerlinPI: Wilkes, Huchra, KirshnerSpectrograph: FASTGrating: 300R, 3" slitPage: 4692Date: 5/21/96

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS			0	0s	bin by 4
11-20	FLAT			0	6s	bin by 4
21-30	BIAS			0	0s	bin by 2
31-40	FLAT			0	12s	bin by 2
41-45	sky			0	2s	bin by 4
46	COMP			↑	5s	
47-49	HD 115043	12:10	+56:41		4s	
50	COMP					clear skies!!
51-53	HD 128165	14:33	+52:54	0	4s	
54	COMP			↑		
55-57	HD 128167	14:34	+29:44	0	2s	
58	COMP			↑		
60	N 4151	12:08	+91:41	6	30s	
61	COMP			↑		
62-63	Feyzels	12:34	+25:20	0	1m	
64	COMP			↑		
65	MRK 279	13:51	+69:33	6	2m	
66	COMP			↑		
67	N 5508	14:15	+25:22	6	2m	
68	COMP			↑		
69	N 4051	12:00	+44:48	6	2m	
70	COMP			↑		
71	MRK 421	11:01	+36:25	6	4m	
72	COMP			↑		
73	CGCG 01-03-47	09:03:44	+55:35:48	1	8m	H _α
74	COMP			↑		
75	SN 1967Z	09:36	-21:08	2	12m	bin by 2
76	COMP			↑	8s	
77	1H1032 m 142	10:31	-14:16	49	12m	see 2-1.7
78	COMP			↑		

60 inch Telescope Log

Observer: PBPI: Wilkes/Hachem/GellerSpectrograph: FASTGrating: 300RDate: 5/21/96Page: 4693

Number	Object	R.A.	Dec.	L/R	Exp	Comments
79,81	PG1008 p133	10:11	+13:04	49	15m	x2
80,82	COMP			↑		
83,84	Feyr 34	10:36	+13:21	0	90s	1.2 13
85	COMP			↑		
86	A12244/p1056	12:24.21	+10:56	1	20m	also observed 5/17/96 LSB
87	COMP			↑		4664/63 1x20 comp
88	PG1351/p640	13:53	+63:45	49	12m	
89	COMP			↑		seeing $\leq 2''$
90,92	PG1352 p183	13:54	+18:05	49	15m	x2
91,93	COMP			↑		
94,95	H244	13:21	+36:23	0	1m	20
96	COMP			↑		
97,98	Feyr 34	10:36	+13:21	0	90s	1.5
99	COMP			↑		
100/01	Feyr 66	12:34	+25:20	0	1m	1.0
102	COMP			↑		
103	320.018555	12:25	+27:22	3	6m	em
104	COMP			↑		bin by 2
105	320.019210 EW	12:24	+27:25	3	7m	E is the real target; W comp
106	COMP			↑		along for the ride
107	320.020301	12:21	+27:29	3	6m	
108	COMP			↑		
109	320.021756	12:24	+27:37	3	10m	LSB em
110	COMP			↑		
111	320.030258	12:25	+28:06	3	7m	
112	COMP			↑		
113	320.031100	12:19	+28:10	3	7m	
114	COMP			↑		
115	320.031825	12:04	+28:11	3	7m	
116	COMP			↑		

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>4694</u>	
Observer: <u>PB</u>				Grating: <u>3002</u>			
PI: <u>Geller & Krishner & Huchra</u>				Date: <u>5/21/96</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments	
117	320.031958	12:07	+28:12	3	7m	clear; seeing ~2"	
118	COMP			↑			
119	320.036201	12:22	+28:29	3	10m	em	
120	COMP			↑			
121-122	Feyge66	12:34	+28:20	0	1m	18 1.4	
123	COMP			↑			
124	324.065829	13:44	+30:42	3	7m	em	
125	COMP			↑			
126	324.087794	14:12	+30:48	3	7m	* on slit to W	
127	COMP			↑			
128	324.100526	14:01	+31:38	3	7m	em +	
129	COMP			↑			
130	324.109566	14:11	+32:13	3	7m		
131	COMP			↑			
132-133	Feyge66	12:34	+28:20	3	1m	1.65	
134	COMP			↑			
135,137	Abell SN	15:19	+28:06	2	20m	V=19+ supernova v2	
136,138	COMP			↑		bin by 2	
139	PG 1708 p602	17:08	+60:13	0	5m		
140	COMP			↑			
141	1745 p6227	17:46	+62:26	49	20m	z=3.9 QSO - wrong - K star *	
142	COMP			↑		chart was wrong!	
143	160133 p60455	16:01	+16:04	25	5m		
144	COMP			↑			
145	160231 p602732	16:02	+20:07	25	5m		
146	COMP			↑			
147	16:0258 p160398	16:02	+16:03	25	5m		
148	COMP			↑			
149	160134 p150457	16:01	+15:04	25	5m		
150	COMP			↑			

OBJECT ON FILE 140 (ON TOP OF HENBAR LINES)
DID NOT extract 139

60 inch Telescope Log			Spectrograph: <u>FAST</u>			
Observer: <u>PB</u>			Grating: <u>3002</u>		Page: <u>4695</u>	
PI: <u>Huchra</u>			Date: <u>5/21/96</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
151	160336p162002	16:03	+16:20	25	6m	K Band LF
152	COMP			↑		
153	160114 p154219	16:01	+15:42	25	6m	em
154	COMP			↑		
155	160311 p160239	16:03	+18:02	25	6m	
156	COMP			↑		
157	160319 p163938	16:03	+16:39	25	6m	sup + * em pec
158	COMP			↑		
159	160013 p163226	16:00	+16:32	25	5m	
160	COMP			↑		
161	160336 p155053	16:03	+15:50	25	5m	is really * 17
162	COMP			↑		
163	160251 p164219	16:02	+16:42	25	5m	next to brighte
164	COMP			↑		
165	160314 p160346	16:03	+18:03	25	6m	em
166	COMP			↑		
167	160332 p150555	16:03	+15:09	25	8m	= em
168	COMP			↑		
169	160028 p162008	16:00	+16:23	25	6m	
170	COMP			↑		
171	160248 p164019	16:02	+16:40	25	5m	
172	COMP			↑		
173	160031 p165138	16:00	+16:51	25	5m	
174	COMP			↑		
175	160125 p163643	16:01	+16:36	25	5m	
176	COMP			↑		
177	160340 p155136	16:03	+15:51	25	5m	
178	COMP			↑		
179-181	CFCity	19:50	+25:41	12	1m, 20s, 2s	
182	COMP			↑		

60 inch Telescope Log		Spectrograph: <u>FAST</u>				Page: <u>4697</u>
Observer: <u>P. Serina</u>		Grating: <u>3000, 3" slit</u>				
PI: <u>Wilkes & Huchra</u>		Date: <u>5/22/96</u>				
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS			0	0s	bin by 2
11-20	FLAT			0	6s	bin by 2
21-30	BIAS			0	0s	bin by 4
31-40	FLAT			0	12s	bin by 4
41	COMP			test	5s	
42-46	sky			0	2s	7:32
47	COMP			↑		scattered cumulus
48-50	HD82328	09:32	+51:41	0	2s	cirrus to west
51	COMP			↑		very windy
52-54	HD87696	10:07	+75:14	0	2s	
55	COMP			↑		
56-58	HD89055	10:16	+25:51	0	4s	
59	COMP			↑		
60-62	HD89449	10:19	+15:28	0	2s	
63	COMP			↑		
64-67	HD09358	12:33	+11:21	0	1s	
68	COMP			↑		
69	MRK51	12:06	+39:41	6	30s	8:14
70	COMP			↑		
71-72	Ferje 66	12:34	+25:20	0	45s	
73	COMP			↑		
74	MRK279	13:51	+69:33	6	2m	
75	COMP			↑		
76	N5548	14:15	+25:12	6	2m	
77	COMP			↑		
78	MRK421	11:01	+38:12	6	4m	
79	COMP			↑		
80	U 4790	09:06	+51:36	1	5m	
81	COMP			↑		
82	N2739	04:05	+51:42	1	4m	

60 inch Telescope Log

Observer: PB

FI: Huchra

Spectrograph: FAST

Grating: 7002

Date: 5/22/96

Page: 4698

Number	Object	R.A.	Dec.	L/R	Exp	Comments
83	COMP			↑		
84	09065p5207	09:10:16	+51:5453	↑	4m	
85	COMP			↑		
86	09050p5327	09:08:37	+53:1576	↑	5m	em
87	COMP			↑		
88	09054p5406	09:09:02	+53:5339	↑	7m	em
89	COMP			↑		
90	09065p5553	09:12:16	+55:4133	↑	4m	
91	COMP			↑		
92	09166p5330	09:16:40	+53:3027	↑	4m	em name format J2000
93	COMP			↑		
94	09140p5257	09:14:00	+52:3735	↑	4m	
95	COMP			↑		
96	09180p5243	09:18:00	+52:43	↑	10m	LSB weak em
97	COMP			↑		
98	09192p5450	09:19:10	+54:50:20	↑	4m	
99	COMP			↑		
100	09190p5119	09:19:00	+54:5:21	↑	10m	em+
101	COMP			↑		
102	09225p5025W	09:22:30	+50:25:58	↑	4m	SW Comp = A
103	09225p5025E	09:22:30	+50:25	↑	8m	NE Comp = B
104	COMP			↑		
105	09213p5451	09:21:20	+54:54:44	↑	4m	
106	COMP			↑		
107	09233p5336	09:23:40	+53:36:08	↑	4m	
108	COMP			↑		
109	09230p5051	09:23:02	50:51:09	↑	8m	em!
110	COMP			↑		
111	09243p5132	09:24:15	+51:32	↑	7m	A only; B is very LSB too faint
112	COMP			↑		

<p>60 inch Telescope Log</p> <p>Observer: <u>PB</u></p> <p>PI: <u>Huchra & Geller & Kirshner</u></p>	<p>Spectrograph: <u>FAST</u></p> <p>Grating: <u>300L</u></p> <p>Date: <u>5/22/96</u></p> <p style="text-align: right;">Page: <u>4699</u></p>
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
113	09242 p6201	09:24:10	+62:0408	1	10m	weak em
114	COMP			↑		
115	09263 p6122	09:26:20	+61:2200	1	6m	
116	COMP			↑		
117	320.057160	12:19	+28:36	3	8m	
118	COMP			↑		
119	320.058169	12:13	+28:37	3	8m	em
120	COMP			↑		
121	320.042104	12:01	+28:53	3	12m	poor seeing
122	COMP			↑		windy
123	320.053880	12:25	+29:39	3	8m	
124	COMP			↑		
125	320.069367	12:01	+30:41	3	8m	em
126	COMP			↑		
127	320.073636	12:18	+31:01	3	8m	em
128	COMP			↑		
129	320.073753	12:19	+31:01	3	8m	
130	COMP			↑		
131	320.74118	12:27	+31:01	3	8m	
132	COMP			↑		
133	324.105768	13:57	+37:00	3	7m	
134	COMP			↑		
135	324.106557	13:53	+37:03	3	7m	"high" z
136	COMP			↑		
137	SN96ab, hostgal	15:19:02	+28:0609	2	12m	
138	COMP			↑		
139	galaxy 29	16:06	+23:47	35	3m	straggler star
140	COMP			↑		
141	329.034852	15:59	+21:39	3	12m	+
142	COMP			↑		

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>4700</u>	
Observer: <u>PB</u>			Grating: <u>300</u>			
PI: <u>Geller & Barmby</u>			Date: <u>5/22/96</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
143	329.039074	16:20	+27:40	3	6m	
144	COMP			↑		poor seeing ≥ 2"
145	329.037006	15:59	+27:44	3	7m	
146	COMP			↑		
147	329.042800	15:54	+27:54	3	8m	faint comp on slit low
148	COMP			↑		
149	329.041739	16:21	+27:53	3	7m	
150	COMP			↑		
151	329.045421	16:07	+28:02	3	7m	em
152	COMP			↑		
153	329.047007	16:12	+28:06	3	7m	
154	COMP			↑		thin clouds
155	329.047299	16:15	+28:06	3	8m	
156	COMP			↑		
157	329.047470	15:59	+28:04	3	9m	
158	COMP			↑		
159	329.058546	15:56	+28:26	3	12m	
160	COMP			↑		thicker clouds...
161	329.058966	16:21	+28:28	3	10m	
162	COMP			↑		
163	329.059399	16:00	+28:29	3	10m	em seeing has improved
164	COMP			↑		
165	329.061612	16:01	+28:43	3	6m	
166	COMP			↑		
167	329.062143	16:07	+28:26	3	8m	
168	COMP			↑		
169	H8	16:10	+19:05	48	10m	em
170	COMP			↑		
171	H10	16:00	+18:22	48	10m	extended EW object
172	COMP			↑		E "comp" has em

60 inch Telescope Log

Observer: PBPI: BarnbySpectrograph: FASTGrating: 300RDate: 5/22/96Page: 4701

Number	Object	R.A.	Dec.	L/R	Exp	Comments
173	H11	15:57	+16:09	48	7m	em
174	COMP			↑		
175	H12	16:02	+16:33	48	5m	
176	COMP			↑		
177	H13	16:09	+16:45	48	10m	em
178	COMP			↑		
179	H14	16:14	+16:18	48	8m	wakem
180	COMP			↑		
181	H15	16:00	+16:26	48	8m	em
182	COMP			↑		
183	H16	15:59	+16:42	48	10m	wk.
184	COMP			↑		
185	H17	16:05	+16:45	48	8m	
186	COMP			↑		
187	H20	16:01	+16:55	48	5m	
188	COMP			↑		
189-191	CIC _{off}	19:50	+35:41	12	1m, 20s, 2s	
192	COMP			↑		
193-195	HD 192081	20:10	+40:07	0	5s	
196	COMP			↑		
197-199	HD 185144	19:32	+69:41	0	2s	
200	COMP			↑		
201-203	HD 186408	19:41	+50:31	0	2s	NW
204-206	HD 186427	19:41	+50:31	0	2s	SE
207	COMP			↑		
208-211	HD 19746	20:10	+28:26	0	4s	
212	COMP			↑		
213-222	BIAS			0	0s	
223-232	FLAT			0	6s	
233-234	DARK			0	15m	

TOTAL P.06

60 inch Telescope Log

Observer: PB
 PI: Barmby

Spectrograph: FAST

Grating: 300R

Date: 5/22/96

Page: 4701

Number	Object	R.A.	Dec.	L/R	Exp	Comments
173	H11	15:57	+16:09	48	7m	em
174	COMP			↑		
175	H12	16:02	+14:33	48	5m	
176	COMP			↑		
177	H13	16:09	+18:45	48	10m	em
178	COMP			↑		
179	H14	16:14	+19:18	48	8m	weak em
180	COMP			↑		
181	H15	16:00	+19:26	48	8m	em
182	COMP			↑		
183	H16	15:59	+18:42	48	10m	wk.
184	COMP			↑		
185	H17	16:05	+15:45	48	8m	
186	COMP			↑		
187	H20	16:01	+16:55	48	5m	
188	COMP			↑		
189-191	CIC _{off}	19:50	+35:41	12	1m, 20s, 2s	
192	COMP			↑		
193-195	HD 192281	20:10	+40:07	0	5s	
196	COMP			↑		
197-199	HD 185144	19:32	+69:41	0	2s	
200	COMP			↑		
201-203	HD 186408	19:41	+50:31	0	2s	NW
204-206	HD 186427	19:41	+50:31	0	2s	SE
207	COMP			↑		clear overhead w/dawn
208-211	HD 19746	20:10	+78:26	0	4s	clouds in east
212	COMP			↑		
213-222	BIAS			0	0s	
223-232	FLAT			0	6s	
233-236	DARK			0	15m	

60 inch Telescope Log

Observer: PBPI: Kirshner & GellerSpectrograph: FASTGrating: 300R, 3" slitDate: 5/23/96Page: 4702

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0s	bmbg 4
11-20	FLAT				6s	bmbg 4
21-30	BIAS				0s	bmbg 2
31-40	FLAT				12s	bmbg 2
41-45	sky	zenith		0		windy; very hazy
46	COMP			↑	5s	lots of clouds too
47-51	Wilson 6377	09:58	+55:50	0	10s	Mountain cumulus + cirrus
52	COMP			↑		
53	NG151	12:08	+39:41	6	2m	
54	COMP			↑		heavy clouds
55-56	Ferje 66	12:34	+25:20	0	1m	solid
57	COMP			↑		
58	NG5546	14:45	+25:22	6	3m	
59	COMP			↑		breaking up
60	MRK 421	11:07	+38:28	6	5m	
61	COMP			↑		
62	SNR 962	09:35	-21:08	2	20m	bmbg 2
63	COMP			↑		
64	SNR 96ac	12:24:11	+01:21:14	2	15m	bmbg 2
65	COMP			↑		
66-67	HZ 44	13:21	+36:23	0	90s	20
68	COMP			↑		aborted attempt to get
69	320.080070	12:25	+71:29	3	10m	a galaxy at +89°
70	COMP			↑		clearing nicely
71	320.082012	12:14	+71:39	3	10m	
72	COMP			↑		
73	320.085330	12:18	+31:54	3	10m	
74	COMP			↑		
75	320.086194	12:24	+34:56	3	9m	* on slit to E
76	COMP			↑		

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>4703</u>	
Observer: <u>PIB</u>			Grating: <u>3002</u>			
PI: <u>Geller & Huchra</u>			Date: <u>5/23/96</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
77	320.087454	12:24	+32:02	3	7m	
78	COMP			↑		
79	320.088815	12:09	+32:08	3	10m	Wham!
80	COMP			↑		stopped by clouds
						solid fast moving low
						clouds coming up from South
						temp dropped too
81	160031p165138	16:00	+16:51	25	6m	
82	COMP			↑		
83	160327p162337	16:03	+16:27	25	6m	
84	COMP			↑		
85	160137p150534	16:01	+15:05	25	6m	
86	COMP			↑		
87	16003p153609	16:00	+15:36	25	7m	pretty clear!
88	COMP			↑		seeing < 2"
89	160359p161022	16:03	+16:10	25	6m	
90	COMP			↑		
91	160034p154003	16:00	+15:40	25	6m	
92	COMP			↑		
93	160043p161523	16:00	+16:15	25	5m	
94	COMP			↑		
95	160044p161400	16:00	+16:11	25	6m	
96	COMP			↑		
97	160246p175758	16:02	+17:57	25	5m	
98	COMP			↑		
99	160327p170337	16:03	+17:07	25	6m	
100	COMP			↑		
101	160341p155343	16:03	+15:53	25	6m	
102	COMP			↑		
103	160204p201619	16:03	+20:16	25	7m	

60 inch Telescope Log

Observer: PB
 PI: Hucher

Spectrograph: FAST
 Grating: 3002
 Date: 5/27/96

Page: 4704

Number	Object	R.A.	Dec.	L/R	Exp	Comments
104	COMP			↑		
105	160121p154655	16:01	+15:46	ZS	7m	weak em
106	COMP			↑		
107	160222p175817	16:02	+17:58	ZS	7m	
108	COMP			↑		
109	160304p161420	16:03	+16:14	ZS	5m	
110	COMP			↑		
111	MRK509	20:41	+10:54	6	90s	poor seeing
112	COMP			↑		
113-116	CIC _{off}	19:50	+35:41	12	1m, 20s, 2m	
117	COMP			↑		
118-120	HD192281	20:10	+40:07	0	5s	clouds all over
121	COMP			↑		a dawn
122-131	BIAS			0	0s	
132-141	FLAT			0	6s	
						see ya!

60 inch Telescope Log		Spectrograph: <u>FAST</u>		Page: <u>4705</u>		
Observer: <u>D. KORANYI</u>		Grating: <u>300L</u>		Date: <u>5/24/96</u>		
PI: <u>D. KORANYI</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0s	BIAS
11-20	FLAT				6s	BIAS
21-30	BIAS				0s	BIAS
31-40	FLAT				12s	BIAS
41-45	SKY			0	2s	BIAS
46	COMP			↑	5s	CLOSE DOME, CLOUDS.
47-48	EDGE 66			0	60s	REOPEN at ~ 11:30 PM.
49	COMP			↑	5s	BREAK IN CLOUDS.
50	MRK 421	11:01:40.6	+38:23:48	6	4m	
51	COMP			↑	5s	
52	NY 151	12:06:01.1	+39:41:01	6	30s	
53	COMP			↑	5s	
54	MRK 279	13:51:53.6	+69:33:13	6	90s	
55	COMP			↑	5s	
56	N5548	14:15:43.5	+22:22:01	6	2m	
57	COMP			↑	5s	
58	MRK 39	16:04:43	+24:17:19	35	20m	LOW SURF. BRIGHTNESS.
59	COMP			↑	5s	
60	MRK 5-02	16:57:06.5	+28:08:05.3	35	20m	" " "
61	COMP			↑	5s	
62	MRK 5-03	16:57:35.3	+28:25:22.0	35	15m	*
63	COMP			↑	5s	
64	MRK 5-30	16:59:03	+27:54:56	35	18m	
65	COMP			↑	5s	
66	MRK 5-29	16:57:42	+28:20:44.6	35	20m	CLOUDS... HIGH-EXPOSURE...
67	COMP			↑	5s	SO CLOSE IN! HIGH.
68	MRK 5-27	16:57:18	+28:11:13	35	20m	STRAWING.
69	COMP			↑	5s	REOPEN - ONLY 7 MINUTE
70-72	C5623	19:50:12	+35:41:04	12	2:20s, 1m	SMALL CLOUDS! COVERS OPEN!
73	COMP			↑	5s	

60 inch Telescope Log

Observer: DKS/AMM

PI: _____

Spectrograph: FAST

Grating: 3002

Date: 5/24/96

Page: 4706

Number	Object	R.A.	Dec.	L/R	Exp	Comments
74	3C390.3	18:45:37	079:43:07	6	3m	
75	COMP			↑	5s	
76	QW5-26	16:58:07	029:57:53	35	20m	
77	COMP			↑	5s	
78	QW5-24	16:58:58	027:55:51	35	20m	GETTING LIGHT...
79	COMP			↑	5s	
80, 81, 82	AG Peg	21:51:01.9	12:77:25	12	23, 20, 1m	
83	COMP			↑	5s	
84, 85	BSP 294111	21:48:57.1	08:37:48	0	2m	STD.
86	COMP			↑	5s	
87-96	BIAS				0s	BIW4
97-106	FAST				6s	BIW4
						DID NOT DO SW OBS,
						SO NO BIN #2.

60 Inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>4707</u>
Observer: <u>D. KOPELNY</u>				Grating: <u>300L</u>		Date: <u>5/25/76.</u>
PI: <u>UNRES/KEW/20</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	SIAS				0s	BLIND ↓
17-20	FMT				6s	LOTS of CUMULUS ↑
21-25	SUT			0	2s	SOCKER HOLES
26	COMP			↑	5s	
27,28	Feige 34	10:36:41.2	43:21:50	0	2m	
29	COMP			↑	5s	
30,31	Feige 66	12:34:55	25:20:31	0	45s	
32	COMP			↑	5s	
33	M42	11:01:40.6	38:28:43	6	4m	CLOUDS
34	COMP			↑	5s	
35	N4051	12:00:36	44:48:35	6	2m	
36	COMP			↑	5s	
37	N4051	12:00:36	44:48:35	6	30s	
38	COMP			↑	5s	
39	M4279	13:51:53	49:33:13	6	90s	
40	COMP			↑	5s	
41	M54	14:15:43.5	25:22:01	6	2m	
42	COMP			↑	5s	
43,44	Feige 34	10:36:41.2	43:21:50	0	60s, 90s	
45	COMP			↑	5s	
46,47	4744	13:21:19	43:23:39	0	1m	
48	COMP			↑	5s	
49,50	TICV1	12:44:47.3	36:45:48	12	5s, 30s	
51	COMP			↑	5s	
52,53,54	RNH2	13:34:17.8	25:22:52	12	2s, 10s, 30s	
55	COMP			↑	5s	
56,57	BD-21 3873	14:16:31.2	21:45:49	12	10s, 45s	
58	COMP			↑	5s	
59,60	TIC-B	15:49:30.3	25:55:10	12	2s, 30s	
61	COMP			↑	5s	

60 inch Telescope Log

Observer: D. KORANYI

PI: USNY/CSUGA/WORANTY

Spectrograph: FAST

Grating: 300L

Page: 4708

Date: 5/25/96

Number	Object	R.A.	Dec.	L/R	Exp	Comments
67,63	AG-Dra	16:01:40.5	66:49:09	12	5s, 30s	
64	COMP			↑	5s	
65	329.062842	16:08:00.62	28:37:44.9	3	15m	HEAD IS STILL BRIGHT.
66	COMP			↑	5s	
67	329.063049	15:55:47.7	28:31:43.7	3	20m	CLOUDS DURING EXPOSURE.
68	COMP			↑	5s	
69	329.065161	15:56:38	28:37:35	3	15m	MORE CLOUDS!
70	COMP			↑	5s	
71	329.067072	15:57:58.78	28:47:42.7	3	15m	STILL CLOUDS.
72	COMP			↑	5s	
73	329.070217	16:16:45.6	28:51:47	3	15m	
74	COMP			↑	5s	ORIGINAL CLOUDS.
75,76	Hen 1341	17:08:36.5	47:26:36	12	10s, 45s	SWITCHING TO BRIGHT-53.
77	COMP			↑	5s	
78-80	AS210	16:51:20.3	26:00:33	12	20s, 1m/1m	
81	COMP			↑	5s	
82,83	Draco C-1	17:11:57.4	67:50:03	12	1m/7m	CLEAR AGAIN! WINDY.
84	COMP			↑	5s	
85	avn S-11	16:56:33	28:01:37.8	35	20m	VERY LOW SURF. BRIGHTNESS.
86	COMP			↑	5s	
87	avn S-18	16:56:43.2	27:49:17.4	35	7m	
88	COMP			↑	5s	
89	avn S-19	16:57:52.9	28:07:41.7	35	12m	
90	COMP			↑	5s	
91	avn S-20	16:56:30.5	27:58:37	35	15m	
92	COMP			↑	5s	
93	avn S-21	16:57:27.0	27:57:31.6	35	15m	STAR 007
94	COMP			↑	5s	
95	avn S-22	16:58:44	27:51:31.8	35	20m	CLOUDS.
96	COMP					

60 inch Telescope Log			Spectrograph: <u>FAST</u>			
Observer: <u>D. Koryak</u>			Grating: <u>300L</u>		Page: <u>4709</u>	
PI: <u>KANYON</u>			Date: <u>5/25/96.</u>			
Number	Object	R. A.	Dec.	L/R	Exp	Comments
97,98	H1 m21	17:34:17.1	-49:09:27	12	30,64	POOR! ATMOSPHERE! NO COMPS
99,100	RT Ser	17:39:57.8	-11:06:43	12	30,30	
101	COMP			↑	5s	
102,103	RS 0 ph	17:50:13.1	-04:42:33	12	25,60s	
104	COMP			↑	5s	
105,106	AS287	18:12:22.2	-1:40:13	12	53,60s	
107	COMP			↑	5s	
108,109	AS296	18:16:07	-0:16:53	12	53,45s	
110	COMP			↑	5s	
111,112	YY Her	18:14:34.0	+20:59:14	12	30,30m	
113	COMP			↑	5s	
114-116	CIC 79	19:50:12.1	35:41:00	12	25,20,14	
117	COMP			↑	5s	
118,119	V443 Her	18:22:07.6	23:23:15	12	53,60s	
120	COMP			↑	5s	
121,122	HWC 960	18:43:55.8	-20:05:57	12	30,30m	INTERLUPE TO OBS. 15710
123	COMP			↑	5s	
124,125	AS338	19:03:46.8	16:26:14	12	30,30m	
126	COMP			↑	5s	
127,128	BFC 79	17:23:53.4	29:40:24	12	30,30m	
129	COMP			↑	5s	
130-139	BIAS				0s	
140-149	FLAT				6s	

used comp file 101 for 97 + 98

60 inch Telescope Log		Spectrograph: <u>FAST</u>		Page: <u>4710</u>		
Observer: <u>D. KORANYI</u>		Grating: <u>300-LWE</u>		Date: <u>5/26/96</u>		
PI: <u>WILKES/KIRSCHNER/SARSON/SAGAN/GEISER</u>						
Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0s	BINNY
11-20	FLAT				6s	"
21-30	BIAS				0s	BINNY
31-40	FLAT				12s	"
41-45	SKY	ZENITH		0	2s	BINNY
46	COMP			↑	5s	[RAINY VALLEY, CLOUDLESS] SKIPS; CLEAR & CALM !!
47, 48	CRUC 66	12:34:54.7	25:20:31	0	453.15s	
49	COMP			↑	5s	
50	MRK 421	11:01:40.6	38:29:43	6	4h	WIND IS PICKING UP! 10-20 mph
51	COMP			↑	5s	
52	N 4151	12:08:01	39:41:01	6	30s	
53	COMP			↑	5s	
54	MRK 279	13:51:53	69:33:13	6	90s	
55	COMP			↑	5s	
56	N 5548	14:15:43.5	25:22:01	6	2m	
57	COMP			↑	5s	
58	SN 1996Z	9:36:43	-22:08:00	2	15h	BINNY AM I ON IT?
59	COMP			↑	5s	V. BRIGHT SKY; MOON IS NEAR.
60	J09167p0715	9:16:40	+2:15:57	1	7h	BINNY; IMPOSSIBLE TO SEE -
61	COMP			↑	5s	CLOSE TO MOON, SEE 7:18 AM I ON IT???
62	320.009279	12:19:35.7	+2:12:23	3	15h	VERY LOW S.F.
63	COMP			↑	5s	FINISH PLATE.
64	g-76-gal14	15:05:13.6	13:07:38	33	18m	VERY FAINT.
65	COMP			↑	5s	
66	g-76-gal15	15:07:04	13:13:29.6	33	15m	
67	COMP			↑	5s	
68	I 4553	15:34:56	23:30:37	42	10m	"NORTH" CORE; NOT OBVIOUS THAT
69	I 4553	15:34:56	23:30:37	42	15m	"SOUTH": <u> </u> THERE ARE 2.
70	COMP			↑	5s	JUST REALIZED FOCUS IS OFF.
71	329.100097	16:17:22	29:52:47	3	8m	QUICKER LIVES QUESTIONABLE CT.

60 inch Telescope Log

Spectrograph: FAST

Observer: D. KORANYI

Grating: 300-line

Page: 4711

PI: 62232/G. BOGIN/KORANYI

Date: 5/26/96

Number	Object	R.A.	Dec.	L/R	Exp	Comments
72	COMP			↑	5s	
73	329.102332	16:12:02	29:53:21	3	12m	
74	COMP			↑	5s	
75	329.101510	16:15:15	29:55:23	3	8m	
76	COMP			↑	5s	
77	329.102193	16:10:42	29:57:29	3	10m	
78	COMP			↑	5s	
79	329.102394	15:54:17	29:53:29	3	10m	
80	COMP			↑	5s	
81	329.102411	16:13:04.49	29:57:11.6	3	18m	
82	COMP			↑	5s	
83	329.103166	15:54:04	29:54:59	3	20m	
84	COMP			↑	5s	
85	329.103343	16:05:07	29:58:55	3	20m	BARELY VISIBLE.
86	COMP			↑	5s	
87	15373p2508	15:51:28	25:06:32	42	15m	QUICKREQ → R=9.79.
88	COMP			↑	5s	
89	15385p2044	15:38:24.1	20:43:21	42	18m	QUICKREQ → R=8.2
90	COMP			↑	5s	
91	avn5-23	16:58:33	27:34:58	35	10m	SWITCHING TO MY OLD STUFF...
92	COMP			↑	5s	
93	avn5-25	16:59:25	28:05:59	35	8m	
94	COMP			↑	5s	
95	avn5-31	16:58:46	27:41:22	35	20m	
96	COMP			↑	5s	
97	avn5-32	16:57:43	27:39:30	35	18m	
98	COMP			↑	5s	
99	avn5-33	16:57:26	27:57:19	35	18m	NOT MUCH SIGNAL...
100	COMP			↑	5s	
101	avn5-34	16:58:41	27:53:16	35	15m	

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>4712</u>
Observer: <u>D. KORANYI</u>				Grating: <u>300-L</u>		Date: <u>5/26/96</u>
PI: <u>KORANYI/KENYAN</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
102	COMP			↑	5s	
103	OHV5-35	16:57:31	28:01:22	35	18m	STAR ON SLIT, TO ^{THE} FAST
104	COMP			↑	5s	
105	OHV5-36	16:58:29	27:57:34.5	35	12m	
106	COMP			↑	5s	
107	OHV5-38	16:57:25	29:43:47	35	11m	
108	COMP			↑	5s	
109, 110	HD192281	20:10:46.8	40:57:01	0	2s, 2s	
111	COMP			↑	5s	
112, 113	BDP284211	21:48:57.1	28:57:48	0	10s, 20s	
114	COMP			↑	5s	
115, 116, 117	CH Cyg	19:24:33	50:14:27	12	1s, 5s, 20s	
118	COMP			↑	5s	
119, 120	HN Sge	19:41:57	16:44:35	12	5s, 45s	
121	COMP			↑	5s	
122, 123	AS 360	19:16:49.3	18:36:40	12	20s, 2m	
124	COMP			↑	5s	
125, 126, 127	CIC 79	19:50:12.1	35:41:00	12	2s, 20s, 1m	
128	COMP			↑	5s	
129, 130	VI016079	19:57:04.9	39:49:23	12	5s, 60s	
131	COMP			↑	5s	
132, 133	PVV 1	20:21:13.3	21:31:21	12	5s, 60s	
134	COMP			↑	5s	
135, 136	He 2m 467	20:35:57.2	20:11:29	12	30s, 5m	
137	COMP			↑	5s	
138, 139	CH Ag1	19:03:35.1	-03:05:06	12	30s, 5m	
140	COMP			↑	5s	
141, 142	AS 316	18:12:32.8	-21:17:53	12	30s, 5m	HIGH MASS: SRC 7 = 1.86
143	COMP			↑	5s	STAR ON SLIT TO FAST.
144	MRK 509	20:41:26.0	-10:54:18	6	3m	

60 inch Telescope Log

Observer: D. KOBAYASHI

PI: WILKES/SILVER/KOBAYASHI

Spectrograph: FAST

Grating: 3000

Page: 4314

Date: 5/27/96

Number	Object	R.A.	Dec.	L/R	Exp	Comments
LAD	SNMS				0s	WISPY CIRRUS ABOUT..
16-20	FAT			0	6s	
21-30	SNMS				0s	} BIN X 2
31-40	FAT			0	12s	
41-45	SNMS	23:17:14		0	5s	WINDY ↓
46	COMP			↑	5s	
47,48	FOXE 66	12:39:57.7	25:20:31	0	45s, 45s	WINDY..
49	COMP			↑	5s	
50	MRK 421	11:01:40.6	38:28:43	6	4m	
51	COMP			↑	5s	
52	MRK 451	17:08:01	33:41:01	6	30s	
53	COMP			↑	5s	
54	MRK 479	13:51:57	69:31:13	6	30s	
55	COMP			↑	5s	
56	NS548	14:15:43.5	25:22:01	6	2m	
57	COMP			↑	5s	
58	SN1996E	9:36:43	-71:08:00	2	15m	} SECTE=7.6s; LAST MCHT'S OBS WAS OF SOMETHING ELSE!
59	COMP			↑	5s	
60	SN1996AE	14:53:57	3:31:46.3	2	15m	} IS THIS IT? HARD TO SEE THE CMT. V. BRIGHT SMT.
61	COMP			↑	5s	
62	SN1996X	13:18:00	-26:50:45	2	12m	} V. BRIGHT SMT. ACQUIRED AFTER 15M - INCREASING CIRRUS TO SOUTH. HARE.
63	COMP			↑	5s	
64,65	H744			0	90s, 90s	} BIN X 2
66,67	H244			0	90s, 90s	WINDY
68	COMP			↑	5s	
69	12588p 7028	15:00:22.4	70:13:27	1	10m	INCREASING CIRRUS EWINGS.
70	COMP			↑	5s	IN MAINLY NORTH; S.E.P. CLOUDS
71	MRK 5-39	16:57:53	+27:56:18	35	15m	3 HOURS LATER... A BYE BYE.
72	COMP			↑	5s	
73	MRK 5-40	16:59:07	+27:57:50	35	15m	

60 inch Telescope Log
 Observer: D. KORANYI
 PI: KORANYI
 Spectrograph: FAST
 Grating: 300A
 Date: 5/27/96
 Page: 4715

Number	Object	R.A.	Dec.	I/R	Exp	Comments
74	COMP			f	5s	
75	AVMS-37	16:57:19	27:50:08	35	20m	
76	COMP			f	5s	
77	AVMS-41	16:57:38	27:07:57	35	18m	MOON WAS SET. MUCH BETTER.
78	COMP			f	5s	
79	AVMS-42	16:58:18	27:46:30	35	12m	
80	COMP			f	5s	
81	AVMS-44	16:57:33	27:55:50	35	14m	
82	COMP			f	5s	
83	AVMS-43	16:58:52.8	27:54:22.0	35	15m	
84	COMP			f	5s	
85	AVMS-45	16:57:43	27:25:02	35	15m	STAR OK
86	COMP			f	5s	
87	AVMS-47	16:58:42	27:49:58	35	12m	
88	COMP			f	5s	
89	3C390.3	18:45:37	77:43:07	6	3m	
90	COMP			f	5s	
91,92	BDP 264211	21:48:52.1	28:37:48	0	30s, 30s	
93	COMP			f	5s	
94,95	H0192267	20:10:46.8	40:07:01	0	5s, 5s	
96	COMP			f	5s	
97,98	He2 m468	20:41:58.8	34:44:48	12	20s, 3m	
99	COMP			f	5s	
100,101	V1329 Cyg	20:51:01.1	35:34:50	12	15s, 3m	
102	COMP			f	5s	
103,104	V407 Cyg	21:02:09.8	45:46:52	12	20s, 5m	INTERFERED
105	COMP			f	5s	
106,107,108	C1 Cyg	19:50:12.1	35:41:00	12	2s, 20s, 1m	IT'S GETTING WORSE...
109	COMP			f	5s	
110-119	BIAS				0s	BIAS 4
120-129	FLAT				6s	BIAS 4
130-139	BIAS				0s	BIAS 2
140-149	FLAT				12s	BIAS 2

END OF FAST RUN.