★Start of FAST Run★

60 inch Telescope Log
Observer: PBerlind
PI:

Spectrograph: FAST
Grating: 300l
Date: 2/5/99

Page: 6942

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0s	clouds,
11-20	FLAT				6s	[FAST ccd electronics have
21-30	BIAS				0s	been adjusted; and then
31-40	FLAT				12s	tweaked back to normal]
41-45	sky	zenith		57	2s	mtn. cloud forming
46	COMP			↑	5s	MAT in cloud
47-48	M32	00:39	+40:40	57	1m	
49	COMP			↑	5s	
50-59	DARK				15m	fog.
60-61	DARK				20m	
						clearing
62-63	Hilton600	06:42	+02:11	56	90s	open @ 11pm
64	COMP			↑		poor seeing
65	a576.254	07:25	+52:10	64	6m	k + w
66	COMP			↑		
67	SNcyl8022	0834	+36:30	2	15m	
68	COMP			↑		
69	a576.257	07:32	+57:30	64	6m	
70	COMP			↑		
71	.258	07:45	+56:17	64	6m	+ to E
72	COMP			↑		
73	.259	07:12	+56:35	64	8m	
74	COMP			↑		
75	.260	07:00	+57:43	64	6m	
76	COMP			↑		
77	.261	06:59	+57:49	64	7m	clouds! -fog- close
78	COMP			↑		open again
79	.264	07:33	+58:19	64	8m	
80	COMP			↑		

chip gain + noise calc. a little low
noise ~ 7.9 ; chip gain ~ 1.15

60 Inch Telescope Log
Observer: PB
PI: Kenyhdi

Spectrograph: FAST
Grating: 300l
Date: 2/5/99

Page: 6943

Number	Object	R.A.	Dec.	L/R	Exp	Comments
81	4576.262	07:11	+57:21	64	8m	
82	Comp			T		
83	.263	07:18	+57:49	64	11m	
84	Comp			T		
85	.265	07:19	+58:11	64	6m	
86	Comp			T		
87	.267	07:22	+53:59	64	7m	
88	Comp			T		
89	.271	07:30	+52:11	64	9m	
90	Comp			T		
91	.272	07:29	+51:00	64	5m	
92	Comp			T		
93	.274	07:06	+56:04	64	9m	+ to W
94	Comp			T		
95	.278	07:08	+53:47	64	8m	+'s to E-W
96	Comp			T		
97	.277	07:30	+53	56	10m	really really
98	Comp			T		
99	Feige 34	10:76	+43	56	2m	
100	Comp			T		
101	nrgs 038.172	09:22	+21:57	59	10m	
102	Comp			T		
103	.171	09:22	+21:51	59	6m	
104	Comp			T		
105	.174	09:22	+22:16	59	10m	
106	Comp			T		
107	.175	09:22	+21:59	59	15m	
108	Comp			T		
109	.176	09:22	+21:58	59	8m	
110	Comp			T		

60 inch Telescope Log
Observer: PB
PI: Andy Dan

Spectrograph: FAST
Grating: 300
Date: 2/5/99

Page: 6944

Number	Object	R.A.	Dec.	L/R	Exp	Comments
111	nrgs038.177	09:22	+22:41	59	6m	bright moon
112	COMP			T		Seeing ~2"
113	.178	09:23	+22:37	59	6m	
114	COMP			T		
115	.179	09:23	+22:19	59	10m	
116	COMP			T		
117	.180	09:23	+22:41	59	6m	
118	COMP			T		
119	.183	09:23	+22:12	59	15m	
120	COMP			T		
121	2613	09:24	+22:25	59	6m	
122	COMP			T		
123	.215	09:24	+22:29	59	7m	* to W
124	COMP			T		
125	.216	09:24	+22:19	59	10m	
126	COMP			T		
127	MRK421	11:01	+38:28	6	4m	
128	COMP			T		
129-130	HZ44	13:21	+36:22	56	2m	
131	COMP			T		
132	N4051	12:00	+44:48	6	2m	
133	COMP			T		
134-5	N4151	12:08	+39.41	6	30s	
136	COMP			T		
137	N5548	14:15	+25:22	6	3m	
138	COMP			T		
139	qso 2:1.037	14:33	+26:12	35	12m	
140	COMP			T		
141	006	14:31	+25:29	35	10m	
142	comp			T		

60 inch Telescope Log
Observer: PB
PI: Dan

Spectrograph: FAST
Grating: 300 2
Date: 2/5/99

Page: 6945

Number	Object	R.A.	Dec.	L/R	Exp	Comments
143	arm3_i.005	14:24	+2637	35	6m	
144	comp			"		
145	.001	14:24	+2541	35	12m	
146	comp			"		
147	.002	14:30	+2731	35	12m	
148	comp			"		
149	.003	14:27	+2630	35	4m	
150	comp			"		
151	.004	14:31	+2537	35	6m	
152	comp			"		
153	MRK 279	13:50	+69	6	3m	
154	comp			"		
155	NS86	15:05	+55:57	57	4m	
156	comp			"		clear & dawn
157-166	BIAS				0s	
167-176	FLAT				6s	
177-186	BIAS				0s	
187-196	FLAT				12s	
197-206	DARK				20m	

60 Inch Telescope Log
Observer: PBerlind
PI: Ardis Kirshner

Spectrograph: FAST
Grating: 300R
Date: 2/6/99

Page: 6946

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-17	DARK				20m	
18-30	BIAS				0s	
31-40	FLAT					
41-50	BIAS					
51-60	FLAT					
61-65	Sky			S7	2s	
66	Comp			↑	5s	
67-68	M32	00:39	+40:35	S7	30s	
69	Comp			↑		
70	225m230	00:41	+41:03	S9	4m	
71	Comp			↑		
72	MRK335	00:03	+19:55	↓	3m	
73	Comp			↑		
74	Srg6149.073	02:34	+01:20	S9	6m	
75	Comp			↑		
76	.071	02:31	+02:26	S9	5m	
77	Comp			↑		
78	Srg6145.065	02:36	+01:47	S9	7m	
79	Comp			↑		
80	.066	02:36	+01:42	S9	7m	
81	Comp			↑		
82	.068	02:36	+01:06	S9	6m	
83	Comp			↑		thin clouds
84	.069	02:37	+01:19	S9	8m	
85	Comp			↑		
86	.072	02:33	+01:40	S9	7m	
87	Comp			↑		
88	SNPP85es	01:37	+06:52	2	20m	
89	Comp			↑		

60 inch Telescope Log
Observer: PB
PI: Andi & Mike & Scott & Muzerolle

Spectrograph: FAST
Grating: 300l; 3"slit
Date: 2/6/99

Page: 6947

Number	Object	R.A.	Dec.	L/R	Exp	Comments
90	Srab149.075	02:34	+01:15	59	6m	
91	Comp			"		
92	.076	02:35	+02:27	59	6m	
93	Comp			"		
94	.077	02:35	+01:58	59	5'm	
95	Comp			"		
96	.081	02:35	+01:01	59	8m	
97	Comp			"		
98	.083	02:35	+02:29	59	8m	
99	Comp			"		
100	.084	02:35	+02:34	59	6m	
101	Comp			"		
102	.086	02:36	+01:33	59	10m	
103	Comp			"		
104	.087	02:36	+01:47	59	7m	
105	Comp			"		
106,107	GICam	04:19	+55:59	107	2,20,99	
108	Comp			"		a few clouds
110	BGCam	06:03	+27:41	110	6m	
111	Comp			"		
112	Akn120	0573	-07:12	6	3m	
113	Comp			T		
114	COORE	05:24	+11:23	82	1m	
115	Comp			T		
116-7	GWOR	05:26	+11:49	82	30s,5s	
118	Comp			T		
119,121	GKOR	05:27	+17:11	82	5'm,30s	
120	Comp			T		
122,3	V1044Or	05:31	-05:44	82	90,15s	
124	Comp			T		

60 inch Telescope Log
Observer: PB
PI: Muzerolle

Spectrograph: FAST
Grating: 300 l
Date: 2/6/99

Page: 6948

Number	Object	R.A.	Dec.	L/R	Exp	Comments
125-126	EZOri	05:31	-05:06	82	2m,30s	
127	comp			1		
128-129	PZ441	05:34	-04:27	82	30s,1m	faint comp to S
130	comp			1		
131-2	V466Ori	05:30	-05:28	82	6m,30s	
133	comp			1		
134-135	PZ270	05:31	-05:59	82	5m,30s	faint to to W bin by 2
136				1		
137,138	Hiltner600	06:42	+02:11	56	50s	
139	comp			1		
140,142	ML3097, MS2304	06:38	+09:37	82	12m	PA=97 ML3097 - rough 2 stars. extended Ha emission MS2304 row-15
141,143	comp			1		
144	MS0465	06:57	+09:53	82	20m	
145	comp			1		
146	MS2645	06:37	+05:33	82	15m	
147	comp			1		
148	MS1815	06:37	+09:44	82	12m	bin by 2 close pair ?
149	comp			1		
150	Pra334	08:37	+19:54	82	30s	1
151	comp			1		
152	Pra322	08:37	+19:29	82	40s	2
153	comp			1		
154	Pra435	08:36	+19:55	82	90s	4
155	comp			1		
156	Pra173	08:34	+19:52	82	2m	5
157	comp			1		
158	Pra342	08:37	+19:47	82	3m	8
159	comp			1		
160	Pra196	08:34	+19:46	82	4m	11
161	comp			1		

60 Inch Telescope Log
Observer: PTS
PI: Ken

Spectrograph: FAST
Grating: 300@
Date: 2/6/99

Page: 6949

Number	Object	R.A.	Dec.	L/R	Exp	Comments
162	Pg 306	08:36	+19:57	BL	7m	
163	COMP			r		
164	g576.279	07:38	+58:16	64	6m	* to W
165	COMP			↑		
166	.280	07:28	+56:48	64	6m	gal to E
167	COMP			r		
168	.281	07:41	+55:25	64	6m	* to W
169	COMP			↑		
170	.282	07:45	+56:16	64	6m	
171	COMP			r		
172	.283	07:27	+56:06	64	6m	
173	COMP			↑		seeing worse
174	.285	07:29	+56:58	64	5m	
175	COMP			r		
176	.287	07:02	+54:36	64	7m	
177	COMP			r		
178	.299	06:57	+54:18	64	6m	
179	COMP			r		
180	.292	07:08	+55:02	64	6m	
181	COMP			r		
182	.294	07:16	+54:15	64	8m	
183	COMP			r		
184	.295	07:22	+54:27	64	6m	
185	COMP			r		
186	.293	07:38	+55:38	64	6m	
187	COMP			r		
188	.223	07:49	+55:25	64	11m	redo from 1/20/99 (#107)
189	COMP			r		
190	.286	07:41	+55:39	64	6m	
191	COMP			T		

60 inch Telescope Log

Observer: PB

PI: Ken Dan Kirshner

Spectrograph: FAST

Grating: 300@

Date: 2/6/99

Page: 6950

Number	Object	R.A.	Dec.	L/R	Exp	Comments
192	a576.288	07:40	+56:44	64	7m	⊥ to W
193	comp			↑		
194	.259	07:38	+57:46	64	6m	
195	comp			↑		
196	.290	07:34	+57:27	64	6m	
197	comp			↑		
198	.298	07:30	+57:30	64	7m	
199	comp			↑		
200	.300	07:34	+57:43	64	6m	
201	comp			↑		
202	SN1999X	06:59	+36:30	2	20m	
203	comp			↑		
204	Feige 34	10:36	+43	56	90s	
205	comp			↑		
206	MRK421	11:01	+38	6	4m	
207	comp			↑		
208	mKW2.057	10:27	-03:56	35	8m	
209	comp			↑		
210	.094	10:30	-03:05	35	8m	
211	comp			↑		
212	.084	10:29	-03:00	35	7m	
213	comp			↑		
214	.088	10:29	-03:13	35	7m	
215	comp			↑		
216	.081	10:29	-03:16	35	12m	
217	comp			↑		
218,220,222	SN1998S	11:46	+47:28	2	20m	x3
219,221,223	comp			↑		
224	H244	13:21	+32	56	2m	
225	comp			↑		

60 inch Telescope Log
Observer: PB
PI: Bates

Spectrograph: FAST
Grating: 300l
Date: 2/6/99

Page: 6951

Number	Object	R.A.	Dec.	L/R	Exp	Comments
226-8	HTVir	13:46	+05:06	101	3s	
229				r		
230	SN1998E	13:17	+18:33	2	20m	bright sky
231	COMP			t		
232	nogal_443	15:35	+43:29	73	5m	
233	COMP			t		
234	444	15:36	+43:50	73	12m.	
235	COMP			t		
236	447	15:36	+26:13	73	12m	
237	COMP			t		
238	449	15:40	+24:26	73	9m	
239	COMP			t		
240	MRK501	16:53	+39:45	6	5m	
241	COMP			t		
242	NGC548	14:13	+25:22	6	3m	
243	COMP			t		
244	MRK279	13:51	+69:33	6	3m	
245	COMP			t		clear & dark!
246	M65?	12:58	+23:28	57	4m	
247	COMP			t		
248-257	BIAS				0s	
258-267	FLAT				6s	
268-277	BIAS				0s	
278-287	FLAT				12s	

60 inch Telescope Log
Observer: PBerlind
PI: Ardi

Spectrograph: FAST
Grating: 300@
Date: 2/7/99

Pat 6952

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BIAS				0s	big band of clouds over
21-30	FLAT				6s	S. Arizona
31-40	BIAS				0s	
41-50	FLAT				12s	
51-55	sky			59	2s	
56	comp			T	5s	
57	010688 p010	01:08	+01:00	73	20m	
58	comp			T		
59	sirgb149.088	02:36	+01:00	59	6m	
60	comp			T		
61	.90	02:36	+02:08	59	2m	
62	comp			T		
63	.91	02:36	+03:12	59	8m	
64	comp			T		
65	.92	02:36	+01:54	59	4m	bin by 2; a to w
66	comp			T		
67	.94	02:37	+01:43	59	8m	
68	comp			T		
69	.96	02:37	+02:22	59	15m	stopped by clouds
70	comp			T		
71-73	CiCam	04:19	+55:59	107	10s-4m	
74	comp			T		cloudy, M wind ~~poor~~
75	nrgs 0536-218	05-24	+22:32	59	15m	poor quality
76	comp			T		
77	.249	09-24	+22:08	59	15m	
78	comp			T		
79	.225	09:25	+22:19	59	8m	
80	comp			T		

once again noise + gain level slightly low
(1e4e 8 & 1.2)

60 inch Telescope Log
Observer: PB
PI: Axel

Spectrograph: FAST
Grating: 300l
Date: 2/7/99

Page: 6953

Number	Object	R.A.	Dec.	L/R	Exp	Comments
81	nrqs038.226	09:25	+22:19	SG	4m	
82	COMP			"		
83	.228	09:25	+22:22	SG	5m	
84	COMP			"		
85	.229	09:25	+22:27	SG	10m	gal to W
86	COMP			"		
87	.231	09:26	+22:05	SG	11m	
88	COMP			"		
89	.232	09:26	+22:07	SG	5m	
90	COMP			"		
91	.233	09:26	+22:05	SG	5m	
92	COMP			"		
93	.234	09:26	+22:23	SG	5m	
94	COMP			"		
95	SN1999B	12:11	+74:58	2	20m	stopped short: more clouds.
96	COMP			"		
97	Feige34	10:36	+43:21	SG	2m	
98	COMP			"		
99	MRK421	11:01	+38:21	6	5m	Stopped by clouds
100	COMP			"		
101-110	BIAS				0s	
111-120	FLAT				6s	
121-130	BIAS				0s	
131-140	FLAT				12s	
141-150	DARK				2m	

60 inch Telescope Log
Observer: CALKINS
PI: Ali, Mahdavi

Spectrograph: FAST
Grating: 300L
Date: 2/8/99

Page: 6954

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-14	DARK				15m	
15-24	BIAS				0s	
25-34	FLAT				6s	
35-44	KINS				0s	
45-54	FLAT				12s	
55-59	sky			#5-7 ↑	2s	
60	comp					
61	Akn564	22 42	29 43	#6 ↑	7m	
62	comp					
63	N7469	23 03	08 52	#6 ↑	3.5m	
64	comp					
65	MRK335	00 06	20 12	#6 ↑	3m	
66	comp					
67	sdssb149.098	2 37	1 38	#59 ↑	4m	
68	comp					
69	sdssb149.099	2 37	1 36	#59 ↑	5m	
70	comp					
71	149.100	2 37	1 58	#59 ↑	4m	
72	comp					
73	149.101	2 37	1 48	#59 ↑	8m	
74	comp					
75	149.102	2 37	2 09	#59 ↑	3m	
76	comp					
77	149.103	2 37	2 20	#59 ↑	2.5m	
78	comp					
79	149.104	2 37	2 04	#59 ↑	2m	
80	comp					
81	149.105	2 37	1 58	#59 ↑	5m	
82	comp					
83	149.106	2 37	1 54	#59	20m	

60 inch Telescope Log

Observer: Colins, Kirshner

PI: Mahdavi, Kenyon, Garcia, Kenyon

Spectrograph: FAST

Grating: 300 l

Date: 2/8/99

Page: 6955

Number	Object	R.A.	Dec.	L/R	Exp	Comments
84	comp			↑		
85	149.107	2 38	2 00	E 59	20m	
86	comp			↑		
87	149.108	2 38	2 09	E 59	20m	star west
88	comp			↑		
89	149.109	2 38	1 41	E 59	17m	
90	comp			↑		
91-93	CICam	4 19	55 59	E 101	2,20,90	
94	comp			↑		
95	BGGem	6 03	27 41	E 100	6m	object west
96	comp			↑		
97	awml-065	9 17	20 52	E 35	17m	
98	comp			↑		
99	awml-066	9 16	19 38	E 35	20m	
100	comp			↑		
101	awml-067	9 15	20 57	E 35	20m	
102	comp			↑		
103	awml-068	9 18	19 33	E 35	20m	(weak!) em + corr are 163 km/s off
104	comp			↑		
105	awml-070	9 17	20 10	E 35	20m	
106	comp			↑		
107	awml-071	9 16	20 01	E 35	20m	(redo) yes, redo
108	comp			↑		
109	awml-072	9 19	20 58	E 35	15m	
110	comp			↑		
111	sn1999a	8 54	36 29	E 2	20m	PA = 0°
112	comp			↑		
113	Feige 34	10 39	43 05	E 56	90s	PA = 54°
114	comp			↑		
115	SNHGC 56	10 22	27 20	E 2	15m	PA = 68° (not on SN)

103 emiss + correlation templates are 150 km/sec different. Best typing in emtemp

60 inch Telescope Log

Observer: CALKINS

PI: Koranyi, Huchra

Spectrograph: FAST

Grating: 300L

Date: 2/8/99

Page. 6956

Number	Object	R A.	Dec.	L/R	Exp	Comments
116	comp			↑		
117	mkw2-086	10 25	-2 59	π35	12m	
118	comp			↑		
119	mkw2-088	10 24	-3 03	π35	16m	
120	comp			↑		
121	mkw2-091	10 24	-3 41	π35	12m	
122	comp			↑		
123	mkw2-092	10 29	-2 33	π35	12m	(redo) OK - emission
124	comp			↑		
125	mkw2-093	10 25	-08 40	π35	20m	2M110055
126	comp			↑		
127	2M110055.9p 2M110059.6	11 00	12 13	π68	6m	⊙ ⊙ →West 2M110059
128	comp			↑		
129	2M110114.1	11 01	15 50	π68	4m	
130	comp			↑		
131	2M110555.7	11 05	17 20	π68	5m	
132	comp			↑		
133	2M110602.6	11 06	13 43	π68	5m	
134	comp			↑		
135	2M110712.0	11 07	13 24	π68	5m	
136	comp			↑		
137	2M110755.5	11 07	16 05	π68	3m	
138	comp			↑		
139	2M110819.7	11 08	12 02	π68	1m	
140	comp			↑		
141	2M110929.8p	11 09	14 40	π68	7m	
142	comp			↑		
143	2M110956.1p	11 09	14 27	π68	8m	
144	comp			↑		
145	2M111218.3p	11 12	16 36	π68	4m	

file 127 { 2M110055 in W
2M110059 in E

128 2M110059.6p 121349

60 inch Telescope Log
Observer: CALKINS
PI: Huchra, Kirshner, All

Spectrograph: FAST
Grating: 5006
Date: 2/8/99

Page: 6957

Number	Object	R.A.	Dec.	L/R	Exp	Comments
146	comp			↑		
147	ZwII31608.0p	11 31	63 08	R 68	5m	
148	comp			↑		
149	ZwII40262.0p	11 40	15 37	R 68	9m	
150	comp			↑		
151	ZwII40118.5p	11 41	15 36	R 68	6m	
152	comp			↑		
153	ZwII40205.5p	11 42	17 59	R 68	4m	
154	comp			↑		
155	ZwII40248.1p	11 42	13 12	R 68	6m	
156	comp			↑		
157	ZwII40252.0p	11 42	19 26	R 68	6m	
158	comp			↑		
159	ZwII40434.5p	11 44	63 06	R 68	4.5m	
160	comp			↑		
161	SN1999E	13 17	18 33	R 2	20m	PA = 0°
162	comp			↑		
163	MRK 421	11 01	38 28	R 6	4m	← PA = 90°!!
164	comp			↑		
165	N4051	12 03	44 31	R 6	2m	
166	comp			↑		
167	N4151	12 10	39 24	R 6	20s	
168	comp			↑		
169	N4258	12 18	47 18	R 6	2m	
170	comp			↑		
171	MRK279	13 52	69 18	R 6	3m	
172	comp			↑		
173	SBS1425+606	14 26	60 25	R 6	10m	
174	comp			↑		
175	N5548	14 17	25 08	R 6	3m	

60 inch Telescope Log
Observer: CALKINS
PI: Huchra, All
Spectrograph: FAST
Grating: 300c
Date: 2/8/99
Page: 6958

Number	Object	R.A.	Dec.	L/R	Exp	Comments
176	comp			↑		
177	2M1400005.3p	14 00	17 37	ff68 ↑	8 m	
178	comp					
179	2M1444400.1p	14 44	23 38	ff68 ↑	3m	
180	comp					
181	2M1457135.4p	14 57	12 48	ff68 ↑	4m	star east
182	comp					
183	2M1439940.1p	14 39	12 17	ff68 ↑	4m	
184	comp					
185	2M1454447.5p	14 54	20 49	ff68 ↑	4m	
186	comp					
187	2M1459184.4p	14 59	23 59	ff68 ↑	3m	
188	comp					
189	2M1457927.2p	14 57	16 24	ff68 ↑	4m	
190	comp					
191	2M1447220.0p	14 42	19 11	ff68 ↑	5m	star west
192	comp					
193	2M1446640.1p	14 46	12 06	ff68 ↑	4.5m	
194	comp					
195	2M1443318.7p	14 43	20 46	ff68 ↑	5m	star west
196	comp					
197	N3379	10 47	12 34	ff57 ↑	90s	
198	comp					
199	Feige 66	12 37	25 04	ff56 ↑	90s	
200	comp					
201-210	BIAS				0s	
211-220	FLAT				60s	
221-230	BIAS				0s	
231-240	FLAT				120s	
241-250	DARK				15m	

60 inch Telescope Log

Observer: CALKINS

PI: Ali, Koranyi

Spectrograph: FAST

Grating: 300L

Date: 2/9/99

Page: 6959

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-8	DARK				15m	
9-18	BIAS				0s	
19-28	FLAT				60s	
29-38	BIAS				0s	
39-48	FLAT				12.5s	
49-53	sky			#57 ↑	2s	
54	comp					
55	PG0205+134	2 08	13 36	#56 ↑	5m	
56	comp					
57	M31	00 42	41 16	#57 ↑	1m	
58	comp					
59	Akn564	22 42	29 44	#6 ↑	6m	
60	comp					
61	N7469	23 03	8 52	#6 ↑	2.5m	object east
62	comp					
63	MRK335	00 06	20 12	#6 ↑	3m	
64	comp					
65	sdb149.111	2 58	2 01	#35 ↑	15m	
66	comp					
67	149.112	2 36	1 22	#35 ↑	12m	
68	comp					
69	149.114	2 36	2 08	#35 ↑	15m	
70	comp					
71	149.115	2 38	2 18	#35 ↑	5m	
72	comp					
73	149.116	2 38	2 06	#35 ↑	45s	
74	comp					
75	149.117	2 36	1 57	#35 ↑	5m	
76	comp					
77	149.118	2 36	1 53	#35 ↑	90s	Agn!

read noise + gain low again

60 inch Telescope Log

Observer: Calkins

PI: Kosarayi, Mahdavi, Garcia

Spectrograph: FAST

Grating: 300l

Page: 6960

Date: 2/9/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
78	comp			↑		
79	149.119	2 58	2 08	#35	8m	
80	comp			↑		
81	149.120	2 38	2 13	#35	90s	
82	comp			↑		
83	149.121	2 38	2 12	#35	12m	
84	comp			↑		
85	149.122	2 38	2 02	#35	1m	
86	comp			↑		
87	149.123	2 38	1 54	#35	10m	
88	comp			↑		
89	149.124	2 39	1 08	#35	12m	
90	comp			↑		
91	149.125	2 39	2 39	#35	12m	
92	comp			↑		
93	149.126	2 39	1 05	#35	1m	
94	comp			↑		
95	149.127	2 39	1 57	#35	20m	
96	comp			↑		
97	149.128	2 39	3 43	#35	12m	
98	comp			↑		
99	nsm1.085	9 17	20 09	#35	20m	(weak!)
100	comp			↑		
101	ngc076.236	10 03	14 56	#59	12m	
102	comp			↑		
103-105	CI Cam	4 19	55 59	#107	3,20,90	
106	comp			↑		
107	ngc076.237	10 03	14 13	#59	8m	cosmic on top of lot S ~~dark~~ line.
108	comp			↑		
109	076.238	10 04	14 25	#59	1m	

60 inch Telescope Log

Observer: CALKINS

PI: Makkadi, Kirshner, Koranyi

Spectrograph: FAST

Grating: 300l

Date: 2/9/99

Page: 6961

Number	Object	R.A.	Dec.	L/R	Exp	Comments
110	comp			↑		
111	076.239	10 04	14 12	⇈59	10m	
112	comp			↑		
113	076.241	10 04	14 46	⇈59	10m	
114	comp			↑		
115	076.242	10 04	14 46	⇈59	3m	Agn!
116	comp			↑		
117	076.243	10 05	14 05	⇈59	7m	
118	comp			↑		
119	076.244	10 05	14 47	⇈59	12m	
120	comp			↑		
121	076.245	10 05	13 58	⇈59	5m	
122	comp			↑		
123	076.246	10 05	13 48	⇈59	5m	
124	comp			↑		
125	076.247	10 05	15 17	⇈59	8m	
126	comp			↑		
127	076.248	10 05	14 33	⇈59	8m	
128	comp			↑		
129	sn1999x	8 54	36 30	⇈2	20m	galaxy immediately
130	comp			↑		west PA = 50°
131	PG0939+262	9 42	26 00	⇈56	2m	PA = 15°
132	comp			↑		
133	sn1999z	10 22	27 22	⇈2	20m	PA = 48°
134	comp			↑		
135	mkw9_i.001	12 08	2 52	⇈35	1m	
136	comp			↑		
137	4_i.002	12 07	2 41	⇈35	4m	
138	comp			↑		
139	4_i.003	12 03	2 28	⇈35	4m	

60 Inch Telescope Log
Observer: Calkins
PI: Koranyi, Huchra

Spectrograph: FAST
Grating: 300l.
Date: 2/9/99

Page: 69662

Number	Object	R.A.	Dec.	L/R	Exp	Comments
140	comp			↑		
141	4-i.004	11 59	1 26	⇈35	20m	
142	comp			↑		
143	4-i.005	12 07	1 23	⇈35	20m	
144	comp			↑		
145	4-i.006	12 07	1 34	⇈35	2.5m	
146	comp			↑		
147	4-i.007	12 08	1 54	⇈35	15m	
148	comp			↑		
149	4-i.008	12 01	1 55	⇈35	20m	
150	comp			↑		
151	4-i.011	12 01	1 44	⇈35	10m	
152	comp			↑		
153	2M1200557.2p	12 00	20 16	⇈68	2.5m	
154	comp			↑		
155	2M1202047.7p	12 02	17 55	⇈68	3 m	
156	comp			↑		
157	2M1202088.3p	12 02	17 41	⇈68	9m	
158	comp			↑		
159	2M1202088.8p	12 02	22 92	⇈68	2m	(-cdo?) m, to ch
160	comp			↑		
161	2M1202239.9p	12 02	20 49	⇈68	8m	
162	comp			↑		
163	2M1204088.8p	12 04	13 21	⇈68	9m	
164	comp			↑		
165	2M1205068.2p	12 05	14 93	⇈68	5m	
166	comp			↑		
167	2M1205229.9p	12 05	14 12	⇈68	5m	
168	comp			↑		
169	2M1206147.1p	12 06	13 00	⇈68	2.5m	

60 inch Telescope Log
Observer: CALKINS
PI: Hughes, Kirshner, Ali, Tucklin

Spectrograph: FAST
Grating: 300L
Date: 2/9/99

Page: 6963

Number	Object	R.A.	Dec.	L/R	Exp	Comments
170	comp			↑		
171	2111207121.5p	12 07	16 58	#68	5m	
172	comp			↑		
173	2111207121.9p	12 07	12 35	#68	4m	
174	comp			↑		
175	SN1999E	13 17	-18 33	#2	15m	PA=0°
176	comp			↑		
177	MRK 421	11 04	38 12	#6	4m	
178	comp			↑		
179	MRK 279	13 52	69 17	#6	3m	
180	comp			↑		
181	N5548	14 13	25 07	#6	3m	
182	comp			↑		
183	A1644D5045	12 54	-17 34	#81	20m	
184	comp			↑		
185	A1644D3048	12 58	-17 32	#81	17m	
186	comp			↑		
187	A1644D5049	12 58	-1731	#81	15m	
188	comp			↑		
189	A1644D5050	12 57	-17 32	#81	7m	
190	comp			↑		
191	A1644D5063	12 58	-17 27	#81	8m	
192	comp			↑		
193	MRK501	16 53	39 45	#6	5m	
194	comp			↑		
195	BD+332642	15 52	32 56	#56	1m	
196	comp			↑		
197	N5866	15 06	55 45	#57	90s	
198	comp			↑		
199-208	BIAS				0s	

60 inch Telescope Log

Observer: COLKINS

PI: Ajil

Spectrograph: FAST

Grating: 300c

Page: 69964

Date: 2/9/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
209-218	FLAT				60s	
219-228	BIAS				0s	
229-238	FLAT				12s	
239-248	DARK				15m	

60 inch Telescope Log
Observer: CALKINS
PI: Ali, Mahdavi

Spectrograph: FAST
Grating: 300L
Date: 2/10/99
Page: 6965

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DIP.IC				15m	
11-20	BIAS				0s	
21-30	FLAT				6s	
31-40	BIAS				0s	
41-50	FLAT				12s	
51-55	sky			#57 ↑	2s	
56	comp					windy, seeing terrible
57	PG0205+134	2 08	13 36	#56 ↑	4m	
58	comp					closed due to wind (wind rotated dome 30°! yikes!! Indicated wind speed was only 25 MPH at the time)
59	nrg+076.252	10 05	14 20	#59 ↑	12m	seeing terrible
60	comp					
61	076.249	10 05	14 52	#59 ↑	15m	
62	comp					
63	076.253	10 06	13 45	#59 ↑	15m	
64	comp					
65	076.254	10 06	14 29	#59 ↑	20m	
66	comp					
67	076.255	10 06	14 42	#59 ↑	12m	
68	comp					
69	076.256	10 06	13 58	#59 ↑	8m	
70	comp					
71	076.257	10 06	13 42	#59 ↑	10m	
72	comp					
73	076.258	10 06	14 05	#59 ↑	15m	
74	comp					

60 inch Telescope Log
Observer: CALKINS
PI: Mobasher

Spectrograph: FAST
Grating: 300C
Date: 2/10/99

Page 6966

Number	Object	R.A.	Dec.	L/R	Exp	Comments
75	076.259	10 06	13 59	#59 ↑	20m	
76	comp					
77	076.260	10 06	13 10	#59 ↑	15m	
78	comp					
79	076.261	10 06	13 36	#59 ↑	20m	object west
80	comp					
81	076.262	10 06	14 26	#59 ↑	12m	
82	comp					
83	076.264	10 06	14 26	#59 ↑	20m	object east
84	comp					
85	2M1434238.3p	14 34	23 18	F68 ↑	3m	
86	comp					
87	2M1444113.9p	14 44	15 34	F68 ↑	2m	
88	comp					
89	2M1443142.2p	14 43	16 29	#68 ↑	12m	
90	comp					seeing still
91	2M1446261.1p	14 46	23 51	F68 ↑	10m	terrible
92	comp					
93	2M1442450.0p	14 42	14 54	F68 ↑	7m	
94	comp					
95	2M1446266.6p	14 46	13 34	F68 ↑	15m	
96	comp					
97	2M1439529.9p	14 39	12 21	F68 ↑	2.5m	
98	comp					
99	2M1445536.7p	14 55	18 03	#68 ↑	2m	
100	comp					
101	2M1426134.9p	14 26	19 07	F68 ↑	1m	
102	comp					
103	2M1446014.5p	14 46	16 39	F68 ↑	4m	bad cosmic in slit
104	comp					

60 inch Telescope Log
Observer: CALKINS
PI: All

Spectrograph: FAST
Grating: 300L
Date: 2/10/99

Page: 6967

Number	Object	R.A.	Dec.	L/R	Exp	Comments
105	BDp332642	15 51	32 56	P 52 ↑	1m	
106	comp.					
107-116	BIAS				0s	
117-126	FLAT				6s	
127-136	BIAS				0s	
137-146	FLAT				12s	
147-156	DARK				15m	

FAX To Susan Tokarz

60 inch Telescope Log
Observer: PBerlind
PI: -

Spectrograph: FAST
Grating: 300@
Date: 2/11/99

Page 6968

Number	Object	R.A.	Dec.	L/X	Exp	Comments
1-10	BIAS				0s	
11-20	FLAT				6s	
21-30	BIAS				0s	windy! clouds.
31-40	FLAT				12s	
41-45	sky	zenith		57	2s	
46	COMP			↑	5s	
47-48	M32	00:39	40:35	57	30s	poor seeing.
49	COMP			↑		
50-59	DARK				15m	close due to high wind
60-69	DARK				20m	?? to 40-50 mph all night

60 inch Telescope Log
Observer: ABerlind
PI: Huchra

Spectrograph: FAST
Grating: 300l; 3" slit
Date: 2/12/99

Page: 6969

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BIAS				0s	
21-30	FLAT				6s	clear skies
31-40	BIAS				0s	windy
41-50	FLAT				12s	
51-55	Sky	Zenith		57	1s	
56	Comp			↑	5s	
57-59	HD2023	0202	+62:56	57	4s	
60	Comp			↑		
61-62	M32	00:39	+40:35	57	30s	Seeing 2"+
63	Comp			↑		
64	225m280	00.41	+41:05	57	5m	
65	Comp			↑		
66	2M0354380	03:54	+34:50	68	5'm	
67	Comp			↑		
68	2M0344.3	0340	+35:15	68	6m	
69	Comp			↑		
70	2M0348501	03:48	+18:03	68	5m	
71	Comp			↑		
72	2M0349525	03:49	+17:39	68	5'm	
73	Comp			↑		
74	2M0353.9	03:03	+21:30	68	6m	
75	Comp			↑		
76	2M0358510	03:58	+21:49	68	6m	
77	Comp			↑		
78	2M0356416.9	03:56	+35:55	68	6m	
79	Comp			↑		poor seeing
80	GS390.001	0146	+03:21	64	3m	
81	Comp			↑		

60 inch Telescope Log
Observer: PB
PI: Rines

Spectrograph: FAST
Grating: 300l
Date: 2/12/99

Page: 6970

Number	Object	R.A.	Dec.	L/R	Exp	Comments
82	q5390_002	04:49	+03:19	64	4m	SW
83	COMP			↑		
84	.003	04:49	+03:20	64	4m	NE
85	COMP			↑		
86	.004	04:58	+06:58	64	10m	
87	COMP			↑		
88	.005	05:03	+06:39	64	7m	
89	COMP			↑		seeing better
90	.006	05:01	+09:27	64	6m	
91	COMP			↑		
92	.008	05:12	+17:52	64	6m	bin by 2; + to W of gal
93	COMP			↑		
94	.007	05:10	+13:43	64	4m	bright gal in slit to W
95	COMP			↑		
96	.010	05:16	+10:55	64	4m	
97	COMP			↑		
98	.012S	05:17	+10:13	64	5m	S gal
99	.012N	05:17	+10:13	64	6m	N gal
100	COMP			↑		
101	.009	05:16	+06:37	64	5m	
102	COMP			↑		
103	.011	05:17	+06:47	64	10m	sup + to N
104	COMP			↑		
105	.013	05:34	+06:47	64	15m	
106	COMP			↑		
107	.016	05:34	+06:47	64	10m	+ to W
108	COMP			↑		
109	c .015	05:26	+08:57	64	15m	+'s to E
110	COMP			↑		

60 inch Telescope Log
Observer: PB
PI: Muzerolle

Spectrograph: FAST
Grating: 300@
Date: 2/12/99

Page: 6971

Number	Object	R.A.	Dec.	L/R	Exp	Comments
111	95390_014	05:21	+15:14	64	15m	
112	COMP			↑		
113-114	Hilt600	06:42	+08:11	56	10s	
115	COMP			↑		
116	MS382	06:38	+09:49	82	15m	
117	COMP			↑		
118	MS269	06:37	+09:39	82	10m	
119	COMP			↑		
120	MS1089	06:38	+08:52	82	15m	
121	COMP			↑		
122	MS1880	06:37	+09:47	82	15m	
123	COMP			↑		
124,126	ML2276	06:39	+09:46	82	17m	x2 *toE
125,127	COMP			↑		
128,130	ML0241	06:37	+10:02	82	17m	
129,131	COMP			↑		
132	SN1999aa	08:27	+21:29	2	20m	tilt pos = 590.0
133	COMP			↑		PA= 56°
134	Feige34	10:36	+43:21	56	2m	
135	COMP			↑		
136-140	FLAT			–	15s	
141	Feige34	"	"	56	90s	tilt= 610.0 ↓ PA=90
142	COMP			↑		
143	SN1999ac	10:22	+27:21	2	20m	
144	COMP			↑		
145	MRK421	11:01	+38:28	6	4m	
146	COMP			↑		
147	N4051	12:00	+44.48	6	2m	
148	COMP			↑		

60 inch Telescope Log
Observer: PB
PI: Dan & Tustin

Spectrograph: FAST
Grating: 300Ω
Date: 2/12/99

Page: 6972

Number	Object	R.A.	Dec.	L/R	Exp	Comments
149	N4151	12:08	+39:4	6	30s	
150	COMP			↑		
151	mKw4_1.016	12:01	+02:31	35	5m	
152	COMP			↑		
153	.013	12:00	+01:41	35	6m	
154	COMP			↑		
155	.014	12:06	+01:11	35	5m	
156	COMP			↑		
157	.012	12:01	+00:56	35	6m	
158	COMP			↑		
159	.017	12:01	+02:18	35	6m	
160	COMP			↑		
161	.021	12:07	+01:22	35	10m	
162	COMP			↑		
163	A1644DSC67	12:59	-17:12	81	7m	
164	COMP			↑		
165	68	12:59	-17:12	81	10m	
166	COMP			↑		
167	62	12:56	-17:10	81	8m	57
168	COMP			↑		
169	60	12:52	-17:15	81	4m	
170	COMP			↑		
171	61	12:57	-17:11	81	10m	
172	COMP			↑		
173	51	12:55	-17:11	81	10m	
174	COMP			↑		
175	52.53	12:54	-17:16	81	12m	52 @ row 42; 53 @ row 20
176	COMP			↑		2 gals
177	.54	12:54	-17:17	81	1m	
178	COMP			↑		

60 inch Telescope Log
Observer: AB
PI: Tustin Glen

Spectrograph: FAST
Grating: 300
Date: 2/12/99

Page: 6973

Number	Object	R.A.	Dec.	L/R	Exp	Comments
179	A1644DS055	12:54	-17:13	81	7m	
180	COMP			↑		
181	056	12:54	-17:14	81	5m	
182	COMP			↑		
183	057	12:53	-17:14	81	8m	
184	COMP			↑		
186	070	12:52	-17:13	81	8m	
186	COMP			↑		
187	074	12:54	-17:08	81	4½m	
188	COMP			↑		
89	075	12:54	-17:06	81	6m	
190	COMP			↑		
191	078	12:55	-17:03	81	5½m	
192	COMP			↑		
193	079	12:54	-17:01	81	5m	
194	COMP			↑		
195	082	12:53	-17:06	61	8m	
196	COMP			↑		
197	SN1999E	13:17	-18:33	2	20m	
198	COMP			↑		
199	HZ44	13:21	+26	56	2m	
200	COMP			↑		
201	N5548	14:15	+25:22	6	3m	
202	COMP			↑		
203	Gwm3_i.010	14:20	+25:57	35	8m	
204	COMP			↑		
205	.008	14:20	+25:20	35	5m	
206	COMP			↑		
207	.009	14:32	+24:16	35	3m	
208	COMP			↑		

60 inch Telescope Log

Observer: PB

PI: Dan

Spectrograph: FAST

Grating: 300

Date: 2/12/99

Page: 6971

Number	Object	R.A.	Dec.	L/R	Exp	Comments
209	awm3-1.011	14:32	+26:19	35	6m	Ha emission
210	Comp			↑		
211	.012	14:29	+27:11	35	4½m	
212	Comp			↑		clear and dawn!
213	MRK279	13:51	+69:33	6	3m	
214	Comp			↑		
215-224	BIAS				0s	
225-234	FLAT				6s	
235-244	BIAS				0s	
245-254	FLAT				12s	
255-264	DARK				20m	

60 inch Telescope Log
Observer: PBerlind
PI: All

Spectrograph: FAST
Grating: 300l, 3"51.7
Date: 2/13/99

Page: 6975

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0s	
11-20	FLAT				6s	Clear skies!
21-30	BIAS				0s	
31-40	FLAT				12s	
41-45	Sky	Zenith		57	2s	
46	Comp			↑	5s	
47-49	HD4841	00:51	+67.46	57	4s	
50	Comp			↑		
51-53	HD4768	00:50	+59.40	57	4s	
54	Comp			↑		
55-57	HD5235	00:54	+58.33	57	4s	
58	Comp			↑		
59-61	HD6343	01:03	+65.58	57	4s	
62	Comp			↑		
63-65	HD6417	01:06	+57.45	57	4s	
66	Comp			↑		
67-69	HD6744	01:09	+65.01	57	10s	
70	Comp			↑		
71-73	HD12623	02:02	+62.56	57	4s	
74	Comp			↑		
75-77	CTCan	04:19	+55.59	107	2s, 20s, 90s	
78	Comp			↑		
79	G191B2B	05:01	+52.45	54	2m	seeing gud.
80	Comp			↑		
81	BGGem	06:03	+27.41	100	6m	
82	Comp			↑		
83	ZM0149322.1	01:49	+32.31	68	6m	
84	Comp			↑		
85	ZM0149328.3	01:49	+33.09	68	7m	
86				↑		

35.76 s.

60 inch Telescope Log
Observer: PB
PI: Huchra & Mazzarella

Spectrograph: FAST
Grating: 300l
Date: 2/13/99

Page: 6976

Number	Object	R.A.	Dec.	L/R	Exp	Comments
87	SN1998es	01:39	+05:52	2	20m	
88	COMP			↑		
89	2M0149042	01:49	+33:36	68	8m	
90	COMP			↑		
91	2M0151487	01:51	+33:12	68	7m	* to L
92	COMP			↑		
93	2M0151387	01:51	+40:08	68	7m	
94	COMP			↑		
95	2M0154350	01:54	+33:14	68	9m	
96	COMP			↑		
97	2M0150175	01:50	+36:13	68	9m	
98	COMP			↑		
99	MS2293	06:38	+09:38	82	15m	1886 + 1914 Strong Li
100	COMP			↑		
101	MS1886-1914	06:38	+09:43	82	15m	PA=69; 2 stars: MS1914 row 17
102	COMP			↑		MS1886 @ row 45
103,105	ML0244	06:37	+09:49	82	15m	x2
104,106	COMP			↑		
107-8	Hiltner600	06:42	+02	56	50s	
109	COMP			↑		
110	Pra197	06:34	+19:32	82	90s	
111	COMP			↑		
112	Pra361	08:37	+19:29	82	90s	
113	COMP			↑		
114	Pra463	06:39	+19:26	82	2m	
115	COMP			↑		
116	Pra332	06:37	+19:57	82	4m	
117	COMP			↑		
118	Pra129	06:33	+19:21	82	4½m	
119	COMP			↑		

60 inch Telescope Log

Observer: PB
PI: Andi

Spectrograph: FAST
Grating: 300l
Date: 2/13/99

Page: 6977

Number	Object	R.A.	Dec.	L/R	Exp	Comments
120	AD1108279	08:31	+52:45	L	11m	
121	COMP			R		
122	nrgs 038.169	09:22	+23:05	L	8m	
123	COMP			R		
124	.209	09:24	+22:36	L	11m	
125	COMP			R		
126	.210	09:24	+22:31	L	11m	
127	COMP			R		
128	.214	09:24	+22:36	L	9m	
129	COMP			R		
130	.220	09:24	+21:34	L	8m	6m by 2; close E-W pair on both
131	COMP			R		
132	.221	09:24	+21:34	L	8m	
133	COMP			R		
134	nrgs 076.265	10:06	+13:36	L	8m	Guidem! shutter prob redo
135	COMP			R		
136	.266	10:06	+15:09	L	8m	
137	COMP			R		
138	.265	10:06	+13:32	L	4m	redo of #134
139	COMP			R		
140	.267	10:06	+13:43	L	4m	
141	COMP			R		
142	.268	10:06	+14:17	L	5m	
143	COMP			R		
144	.269	10:06	+14:38	L	6m	
145	COMP			R		
146	.270	10:06	+14:18	L	3m	
147	COMP			R		
148	.271	10:06	+14:23	L	4m	
149	COMP			R		

60 inch Telescope Log

Observer: PB

PI: Dan

Spectrograph: FAST

Grating: 300l

Date: 2/13/99

Page: 6978

Number	Object	R.A.	Dec.	L/R	Exp	Comments
150	Arp 076.272N	10:06	+14:22	59	5m	
151	.272S	10:06	+14:22	59	2m	
152	Comp			↑		
153	.273	10:06	+14:21	59	7m	
154	Comp			↑		
155	SN1999aa	06:29	+21:29	L	20m	tilt=590.0↓, PA=54
156	Comp			↑		
157	Feige34	10:36	+43	56	2m	PA=40
158	Comp			↑		
159-163	FLAT				15s	
164	Feige34	10:36	+43:21	56	90s	tilt= 610.0 ↓
165	Comp			↑		
166	MRK421	11:01	+38:28	6	4m	
167	Comp			↑		
168	mkw2-090	10:30	-02:58	35	12m	
169	Comp			↑		
170	.095	10:29	-02:46	35	12m	
171	Comp			↑		
172	mkw4-1.024	12:07	+02:40	35	12m	
173	Comp			↑		
174	.023	12:03	+01:38	35	12m	
175	Comp			↑		
176	.028	12:07	+01:25	35	12m	
177	Comp			↑		
178	.029	12:04	+01:49	35	12m	
179	Comp			↑		
180	.032	12:05	+01:10	35	12m	
181	Comp			↑		

60 inch Telescope Log

Observer: PB

PI: Tustin

Spectrograph: FAST

Grating: 300l

Date: 2/13/99

Page: 6979

Number	Object	R.A.	Dec.	L/R	Exp	Comments
182	A1644D5085	12:55	-17:02	81	5m	
183	COMP			↑		
184	.087	12:55	-17:00	81	5m	
185	COMP			↓		
186	.088	12:54	-17:01	81	6m	
187	COMP			↑		
188	.089	12:54	-17:01	81	6m	
189	COMP			↓		
190	.091	12:54	-17:00	81	6m	
191	COMP			↑		
192	.092	12:54	-17:02	81	5m	
193	COMP			↓		
194	.098	12:54	-16:58	81	5m	
195	COMP			↑		
196	.099	12:54	-16:56	81	7m	
197	COMP			↓		
198	.104	12:55	-16:51	81	8m	
199	COMP			↑		
200	.105	12:54	-16:55	81	10m	
201	COMP			↑		
202	.114	12:54	-16:51	81	7m	
203	COMP			↓		
204	.115	12:54	-16:51	81	10m	
205	COMP			↓		
206	.116	12:53	-16:51	81	6m	
207	COMP			↑		
208	.122	12:56	-16:47	81	8m	
209	COMP			↓		
210	.123	12:55	-16:47	81	5m	
211	COMP			↓		

60 inch Telescope Log

Observer: PB

PI: Tustin & Dan

Spectrograph: FAST

Grating: 300R

Date: 2/13/99

Page: 6980

Number	Object	R.A.	Dec.	L/R	Exp	Comments
212	A1644+D5124	12:55	-16:45	81	6m	
213	Comp			↑		
214	.125	12:54	-16:45	81	6m	
215	Comp			↑		
216	.126	12:53	-16:42	81	10m	
217	Comp			↑		
218	.129	12:53	-16:41	81	4m	
219	Comp			↑		
220	.130	12:56	-16:39	81	7m	
221	Comp			↑		
222	.131	12:53	-16:40	81	5m	
223	Comp			↑		
224	.134	12:52	-16:38	81	5m	
225	Comp			↑		
226	.136	12:55	-16:36	81	6m	
227	Comp			↑		
228	H244	13:21	+36:23	56	2m	
229	Comp			↑		
230	N5548	14:25	+25:22	6	3m	
231	Comp			↑		
232	MRK279	13:51	+69:33	6	3m	
233	Comp			↑		
234	SBS1425	14:15	+60:39	6	11m	
235	Comp			↑		
236	gum3_i-013	14:28	+24:32	35	5m	
237	Comp			↑		
238	.014	14:29	+26:41	35	5½m	
239	Comp			↑		
240	.015	14:32	+24:25	35	4½m	
241	Comp			↑		

60 inch Telescope Log

Observer: PB

PI: —

Spectrograph: FAST

Grating: 300.l

Date: 2/13/99

Page: 6981

Number	Object	R.A.	Dec.	L/R	Exp	Comments
242	Gwm3_1.016	14:35	+26:32	35	4m	
243	COMP			↑		clear & dawn
244	017	14:23	+25:33	35	4m	
245	COMP			↑		
246-255	BIAS				0s	
256-265	FLAT				6s	
266-275	BIAS				0s	
276-285	FLAT				12s	
286-295	DARK				15m	

60 inch Telescope Log
Observer: Rines
PI: Ali, Huchra, Kenyon, Mobasher

Spectrograph: FAST
Grating: 300l
Date: 2/14/99

Page: 6982

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				900s	
11-15	DARK				900s	bin by 2
16-25	BIAS				0s	scattered cirrus
26-35	FLAT				12s	
36-45	BIAS				0s	bin by 4
46-55	FLAT				6s	
56-60	sky				15s	6:33
61	COMP					in focus
62	NGC 1700	4 54	-4 56	57	4m	6:53, clearing
63	COMP			↑		
64	HZ 14	4 41	+10 59	56	5m	
65	COMP			↑		
66	PG 0310p149	3 13	+15 17	56	30s	
67	COMP			↑		
66,69,70	CI Com	4 19	+55 59	167	2,20,30s	
71	COMP			↑		
72	2m0146[illegible].6p41	1 46	+41 50	68	6m	STAR
73	COMP			↑		
74	2m0153593p33	1 54	+33 31	68	12m	
75	COMP			↑		
76	2m0149486p33	1 49	+33 15	68	10m	
77	COMP			↑		
78	PG6cm	6 04	+27 41	100	6m	bin by 2
79	COMP			↑		cirrus mostly N
80	srgb145.130	2 39	+1 33	59	4m	
81	COMP			↑		
82	srgb145.131	2 40	+1 30	59	3m	
83	COMP			↑		
84	COMP			↑		12s
85	srgb145.132	2 40	+1 30	59	5m	bin by 4, X to W

60 inch Telescope Log
Observer: K Rines
PI: Mohdavi, Huchra

Spectrograph: FAST
Grating: 300l
Date: 2/14/99

Page: 6983

Number	Object	R.A.	Dec.	L/R	Exp	Comments
86	COMP			↑		
87	sdssJ149.133	2 40	+1 02	59	7m	
88	COMP			↑		
89	135	2 40	+2 28	59	4m	
90	COMP			↑		
91	136	2 40	+1 20	59	5m	
92	COMP			↑		
93	139	2 41	+3 02	59	8m	
94	COMP			↑		
95	140	2 41	+1 06	59	5m	
96	COMP			↑		
97	142	2 41	+1 05	59	5m	
98	COMP			↑		
99	obj-1001	2 57	+41 56	35	10m	bin by 2 (other gal to W)
100	COMP			↑		
101	2m061854.3p28	6 18	+28 53	68	7m	bin by 4
102	COMP			↑		
103	2m061602.1p24	6 16	24 39	68	10m	✱?
104	COMP			↑		
105	2m061130.2p26	6 11	26 04	68	90s	✱? ✱ to W STAR
106	COMP			↑		
107	2m061609.3p28	6 16	28 14	68	10m	NOT ENOUGH
108	COMP			↑		
109	2m062216.1p28	6 22	28 14	68	10m	
110	COMP			↑		
111	2m061748.3p28	6 17	28 52	68	8m	✱ to E
112	COMP			↑		
113	2m060616.1p29	6 06	29 41	68	12m	
114	COMP			↑		
115	2m062244.6p28	6 22	28 21	68	12m	✱ to W

99 - comments for misleading - no other galaxy in field
Superposed star

60 inch Telescope Log

Observer: Rines

PI: Kirshner, Matheucci, Rines

Spectrograph: FAST

Grating: 300l

Date: 2/14/99

Page: 6184

Number	Object	R.A.	Dec.	L/R	Exp	Comments
116	COMP			68		
117	SN1999aa	8 27	+21 29	2	20m	till = 590.0, Δ = -14° -9°
118	COMP			↑		bin by 2
119	Feige 34	10 36	43 21	56	2m	Δ = 73°
120	COMP			↑		
121	SN1999X	8 54	36 30	2	15m	tilt = 610 Δ = +24° → -1
122	COMP			↑		
123	nrgs038_168	9 22	21 49	59	12m	bin by 4, Δ = 90
124	COMP			↑		
125	170	9 22	21 34	59	12m	
126	COMP			↑		
127	173	9 22	21 50	59	12m	
128	COMP			↑		
129	181	9 23	22 18	59	12m	bright star to W
130	COMP			↑		nice em
131	a1213_005	11 10	28 46	64	4m	
132	COMP			↑		
133	-006	11 11	26 57	64	3m	X to W
134	COMP			↑		
135	007	11 15	31 02	64	150s	
136	COMP			↑		
137	008	11 11	28 41	64	150s	
138	COMP			↑		
139	009	11 12	27 35	64	2m	
140	COMP			↑		
141	010	11 13	27 49	64	2m	
142	COMP			↑		
143	011	11 18	28 15	64	150s	
144	COMP			↑		
145	012	11 07	28 31	64	150s	

60 inch Telescope Log

Observer: Rines

PI: Rines

Spectrograph: FAST

Grating: 300l

Date: 2/14/99

Page: 6985

Number	Object	R.A.	Dec.	L/R	Exp	Comments
146	COMP			64		
147	a123_013	11 06	29 55	64	4m	
148	COMP			↑		
149	014	11 10	28 32	64	3m	
150	COMP			↑		
151	015	11 10	28 19	64	2m	
152	COMP			↑		
153	016	11 08	28 28	64	2m	
154	COMP			↑		
155	017	11 18	27 54	64	150s	
156	COMP			↑		
157	018	11 29	28 32	64	2m	
158	COMP			↑		
159	019	11 09	29 34	64	2m	
160	COMP			↑		
161	020	11 28	27 23	64	6m	should have been longer
162	COMP			↑		
163	021	11 20	30 29	64	2m	
164	COMP			↑		
165	022	11 14	30 18	64	2m	
166	COMP			↑		
167	023	11 15	29 31	64	2m	
168	COMP			↑		
169	024	11 05	29 57	64	4m	
170	COMP			↑		
171	025	11 16	29 15	64	4m	
172	COMP			↑		
173	027	11 16	29 15	64	4m	
174	COMP			↑		
175	027S	11 16	29 15	64	4m	

60 inch Telescope Log

Observer: Rines

PI: Rines

Spectrograph: FAST

Grating: 300l

Date: 2/14/99

Page: 6986

Number	Object	R.A.	Dec.	L/R	Exp	Comments
176	COMP			64		clear
177	a1213_248	11 16	29 13	64	4m	
178	COMP			4		
179	146	11 16	29 16	64	4m	
180	COMP			↑		
181	068	11 16	29 17	64	4m	
182	COMP			↑		
183	068SW	11 16	29 16	64	4m	title. uncommented
184	COMP			↑		
185	026	11 14	28 33	64	2m	N to E
186	COMP			↑		
187	028	11 24	27 00	64	3m	
188	COMP			↑		
189	029	11 14	31 30	64	3m	
190	COMP			↑		
191	030	11 16	29 19	64	6m	em
192	COMP			↑		
193	197	11 16	29 18	64	7m	N to E
194	COMP			↑		
195	031	11 10	28 41	64	3m	gal to E
196	COMP			↑		
197	325	11 10	28 41	64	8m	gal to W
198	COMP			↑		
199	078	11 10	28 41	64	5m	
200	COMP			↑		
201	053	11 10	28 39	64	3m	
202	COMP			↑		
203	153	11 10	28 42	64	3m	
204	COMP			↑		
205	075	11 10	28 43	64	3m	UNDEREXPOSED

60 inch Telescope Log
Observer: Rines
PI: Rines, Tustin, Kennyi

Spectrograph: FAST
Grating: 300l
Date: 2/14/99

Page 6987

Number	Object	R.A.	Dec.	L/R	Exp	Comments
206	COMP			64		
207	a1213_03INW	11 10	28 41	64	8m	
208	COMP			↑		
209	03INW2	11 10	28 41	64	10m	
210	COMP			↑		
211	032	11 12	27 26	64	3m	
212	COMP			↑		
213	A1644 05137	12 53	-16 36	81	4m	* to W see note below
214	COMP			↑		
215	A1644 05139	12 55	-16 29	81	12m	why 12 minutes per S/N (faint?) ~~if faint??~~ X
216	COMP			↑		
217	A1644 05143	12 54	-17 30	81	8m	
218	COMP			↑		
219	mkw12-i.001	14 06	+9 21	35	2m	
220	COMP			↑		
221	002	13 57	9 52	35	4m	big gal
222	COMP			↑		
223	003	14 05	10 25	35	4m	
224	COMP			↑		
225	004	14 00	8 58	35	6m	
226	COMP			↑		
227	005	14 05	9 01	35	6m	
228	COMP			↑		
229	006	14 02	10 24	35	6m	
230	COMP			↑		
231	007	13 59	10 08	35	5m	
232	COMP			↑		
233	008	14 01	10 28	35	8m	
234	COMP			↑		
235	N4051	12 03	44 32	6	4m	~~δ = -84°~~ not it WRONG OBJECT — see 237

213 is a star; DSS shows galaxy
either this is a superposed star OR the wrong object

60 inch Telescope Log
Observer: Rines
PI: Wilkes

Spectrograph: FAST
Grating: 300l
Date: 2/14/99

Page: 6988

Number	Object	R.A.	Dec.	L/R	Exp	Comments
236	COMP			6		
237	N4051	12 03	44 31	6	4m	Δ = -84°
238	COMP			T		CORRECT OBJECT
239	N4151	12 10	39 24	6	30s	
240	COMP			T		
241	HZ44	13 23	36 08	56	2m	
242	COMP			↑		
243	HZ44	13 23	36 08	56	2m	bin by 2
244	COMP			↑		
245	awm3_1.018	14 21	25 36	35	8m	bin by 4 ✗ wrong obj ???
246	COMP			↑		
247	MRK421	11 01	38 28	6	4m	WRONG OBJECT!
248	COMP			↑		
249	N5548	14 15	25 22	6	3m	CORRECT
250	COMP			↑		
251	N5846	15 05	55 57	57	3m	pointing is correct
252	COMP			↑		
253-262	BIAS				0s	mostly clear @ dawn
263-272	FLAT				6s	
273-282	BIAS				0s	bin by 2
283-292	FLAT				12s	
293-302	FLAT				12s	tilt = 590
303-312	DARK				15m	bin by 4

60 inch Telescope Log

Observer: K Rines
PI: Ail. Huchra

Spectrograph: FAST
Grating: 300/
Date: 2/16/99

Page: 6989

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	bin by 2
11-20	BIAS				0s	
21-30	FLAT				12s	
31-40	FLAT				12s	tilt = 590 ~~not reached~~
41-50	BIAS				0s	bin by 4 (tilt = 610)
51-60	FLAT				6s	
61-65	sky				5s	6:17
66	COMP				6s	cirrus to N, E
67	M32	00 39	+40 35	57	90s	6:19
68	COMP			↑		
69	HZ44	4 40	11 02	56	4m	dome acting up - reset,
70	COMP			↑		$\Delta = 0°$
71	2m0146450.p30	1 46	30 21	68	12m	$\Delta = 90$
72	COMP			↑		nice cm
73	2m0150[illegible]9.p40	1 50	40 13	68	8m	
74	COMP			↑		
75	2m 0150272.p33	1 50	33 09	68	8m	
76	COMP			↑		
77	2m0147069.p41	1 47	41 26	68	8m	
78	COMP			↑		
79	2m0146349.p41	1 46	41 44	68	8m	
80	COMP			↑		
81	2m0147504.p32	1 47	32 29	68	12m	* to W
82	COMP			↑		
83	2m0153533.p32	1 53	32 16	68	10m	
84	COMP			↑		
85	2m0148164.p32	1 48	32 52	68	8m	
86	COMP			↑		
87	2m0150231.p32	1 50	32 29	68	10m	
88	COMP			↑		

60 inch Telescope Log
Observer: Rines
PI: Koranyi, Garcia, Kirshner, Mahdavi

Spectrograph: FAST
Grating: 300l
Date: 2/15/99

Page: 6990

Number	Object	R.A.	Dec.	L/R	Exp	Comments
89	obj-1009	2 57	41 37	35	15m	
90	COMP			↑		
91	1014	2 57	41 56	35	15m	A to W
92	COMP			↑		
93	1020	2 57	42 11	35	15m	obj to W
94	COMP			↑		em
95	1038	2 51	42 12	35	20m	A to W, obj to E?
96	COMP			↑		
97-99	CICam	4 19	55 59	107	2,20m's	
100	COMP			↑		
101	SN1999aa	8 27	21 30	2	20m	tilt = 590 A = -48-9-
102	COMP			↑		bin by 2
103	Feige 34	10 36	41 20	56	2m	A = 83
104	COMP			↑		
105	nrgs 038.182	9 23	22 31	59	15m	tilt = 610, bin by 4,2 = 90
106	COMP			↑		A to E
107	184	9 23	22 17	59	15m	obj to E
108	COMP			↑		
109	203	9 23	22 43	59	15m	
110	COMP			↑		
111	204	9 23	22 32	59	12m	
112	COMP			↑		
113	mkv2-096	10 27	-3 55	35	15m	
114	COMP			↑		
115	-099	10 26	-2 49	35	12m	A to E
116	COMP			↑		
117	-100	10 28	-3 13	35	10m	
118	COMP			↑		
119	-097	10 26	-3 24	35	20m	
120	COMP			↑		

60 inch Telescope Log
Observer: Rines
PI: Rines

Spectrograph: EAST
Grating: 300 1
Date: 2/15/99

Page: 6991

Number	Object	R.A.	Dec.	L/R	Exp	Comments
121	a1213_033	11 28	27 23	64	4m	
122	COMP			↑		
123	034	11 19	29 10	64	4m	
124	COMP			↑		
125	234	11 19	29 09	64	7m	
126	COMP			↑		
127	035	11 21	31 15	64	3m	
128	COMP			↑		
129	036	11 16	29 23	64	3m	
130	COMP			↑		
131	037	11 15	29 31	64	2m	
132	COMP			↑		
133	038	11 23	29 35	64	4m	
134	COMP			↑		
135	039	11 18	28 13	64	4m	
136	COMP			↑		
137	266	11 18	28 12	64	6m	
138	COMP			↑		
139	040	11 01	29 47	64	4m	
140	COMP			↑		
141	041	11 16	29 13	64	4m	obj to E
142	COMP			↑		
143	042	11 11	28 42	64	4m	em!!
144	COMP			↑		
145	043	11 22	27 35	64	4m	
146	COMP			↑		
147	044	11 10	30 09	64	3m	
148	044 NW	11 10	30 09	64	7m	-044 to E
149	COMP			↑		

60 inch Telescope Log
Observer: Rines
PI: Rines

Spectrograph: FAST
Grating: 300l
Date: 2/15/99

Page: 6992

Number	Object	R.A.	Dec.	L/R	Exp	Comments
150	a1213_045	11 24	27 38	64	3m	
151	COMP			↑		
152	046	11 10	28 16	64	3m	
153	COMP			↑		
154	047	11 28	27 27	64	3m	✱ to W
155	COMP			↑		
156	048	11 05	28 47	64	3m	em 11
157	COMP			↑		
158	049	11 07	28 35	64	4m	
159	COMP			↑		
160	052	11 05	30 09	64	4m	
161	COMP			↑		
162	054	11 09	31 32	64	4m	
163	COMP			↑		
164	050	11 14	31 26	64	4m	
165	COMP			↑		
166	051, 051W	11 14	27 42	64	6m	✱ to E, 51, 51W to W
167	COMP			↑		
168	055	11 11	28 43	64	4m	
169	COMP			↑		
170	056	11 29	28 15	64	3m	
171	COMP			↑		
172	057	11 24	28 19	64	4m	
173	COMP			↑		
174	060	11 31	29 18	64	3m	
175	COMP			↑		
176	058	11 05	29 51	64	4m	
177	COMP			↑		
178	059	11 08	29 13	64	6m	
179	COMP			↑		

60 inch Telescope Log
Observer: Rines
PI: Tustin

Spectrograph: FAST
Grating: 300/1
Date: 2/15/99

Page: 6993

Number	Object	R.A.	Dec.	L/R	Exp	Comments
180	A1644 05037	12 56	-17 19	81	8m	
181	COMP			↑		
182	038	12 55	-17 20	81	8m	
183	COMP			↑		
184	039	12 55	-17 19	81	8m	gal to W
185	COMP			↑		
186	040	12 55	-17 19	81	8m	gal to E
187	COMP			↑		em
188	041	12 54	-17 18	81	8m	
189	COMP			↑		
190	042	12 53	-17 18	81	8m	
191	COMP			↑		
192	107	12 54	-16 54	81	12m	
193	COMP			↑		
194	108, 109	12 54	-16 53	81	12m	108 E, 109 W bin by
195	COMP			↑		χ = 80°
196	~~MRK 421~~	11 04	+30 12	6	6m	χ = 90
197	COMP			↑		wind ~ 15, cirrus
198	N 5548	14 17	+25 11	6	3m	
199	COMP			↑		
200	47 44	13 23	36 07	56	2m	
201	COMP			↑		
202	47 44	13 23	36 07	56	2m	bin by 2
203	MRK 279	13 52	69 17	6	6m	
204	COMP			↑		too cloudy 5:24
205-214	BIAS				0s	
215-224	FLAT				12s	
225-234	BIAS				0s	bin by 4
235-244	FLAT				6s	
245-254	DARK				15m	

WRONG OBJECT

oops! forgot COMP

51-60 FLAT 15s 4x4 = 590

60 inch Telescope Log
Observer: K Rines
PI: All

Spectrograph: FAST
Grating: 300l
Date: 2/16/99

Page: 6994

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BIAS				0s	
21-30	FLAT				6s	
31-40	BIAS				0s	bin by 2
41-50	FLAT				12s	
[redacted]						not marked in header
61	sky				5s	
62-65	sky				15s	6:26
67-71	sky				15s	
72	COMP					cirrus!
73	HZ14	4 41	10 59	56	390s	
74	COMP			↑		
75	HZ14	4 41	10 59	56	5m	take two.... 7.05
76	COMP			↑		
77	Zm0152 48.2 p40	1 52	40 20	68	10m	bin by 4 underexposed
78	COMP			↑		
79	Zm0147 25.4 p30	1 47	30 01	68	15m	
80	COMP			↑		
81	Zm0148 33.1 p32	1 48	32 12	68	12m	
82	COMP			↑		
83	Zm0148 39.7 p33	1 48	33 03	68	12m	
84	COMP			↑		
85	sky b149.152	2 43	+1 45	59	8m	em
86	COMP			↑		
87	143	2 41	+2 15	59	12m	em
88	COMP			↑		
89	145	2 41	+1 14	59	8m	
90	COMP			↑		
91	144	2 41	+1 38	59	6m	* to E
92	COMP			↑		

60 inch Telescope Log
Observer: Rines
PI: Mahdavi, Koranyi, Kirshner
Spectrograph: FAST
Grating: 300l
Date: 2/16/99
Page: 6995

Number	Object	R.A.	Dec.	L/R	Exp	Comments
93	srgb149.147	2 42	+2 25	59	8m	
94	COMP			↑		
95	obj-1047	2 51	42 69	35	20m	
96	COMP			↑		
97	obj-1055	2 52	41 01	35	20m	obj. to W em lines don't line up
98	COMP			↑		
99	obj-1070	2 51	42 11	35	20m	2 objs to W
100	COMP			↑		
101-103	CI Cam	4 19	55 59	100	2,20,2½	
104	COMP			↑		
105	a539.05142+04	5 14	+4 47	64	15m	obj to E, star to SW
106	COMP			↑		
107	BG Gem	6 03	+27 41	107	5m	bin by 2
108	COMP			↑		
109	SN1999aa	8 27	21 29	2	20m	tilt = 590, ∡ = -32 → -1[illegible]
110	COMP			↑		
111	MFeige 34	10 39	43 06	56	2m	∡ = 82
112	COMP			↑		
113	nrgs038.189	9 23	22 07	59	15m	bin by 4, tilt = 610, bin by 4
114	COMP			↑		obj to W
115	211	9 24	22 08	59	12m	
116	COMP			↑		
117	222	9 24	22 17	59	9m	
118	COMP			↑		
119	nrgs076.276	10 06	14 04	59	9m	
120	COMP			↑		
121	287	10 07	14 58	59	12m	
122	COMP			↑		
123	299	10 09	15 00	59	5m	
124	COMP			↑		

105 superposed star?? ~~[illegible]~~ - ~~[illegible]~~ cont not there; ~~may have~~ has emission

97 - emission lines don't match up well - each other

113 VERY POOR MEASUREMENT; but it has Hα

60 inch Telescope Log
Observer: Rines
PI: Rines

Spectrograph: EAST
Grating: 300l
Date: 2/16/99

Page: 6996

Number	Object	R.A.	Dec.	L/R	Exp	Comments
125	a1213_061	11 17	27 40	64	10m	X Throw out
126	COMP			↑		cloudy all sky
127	IGNORE					ignore - test
128	a1213_061	11 17	27 40	64	8m	take two ; clearer
129	COMP			↑		
130	064	11 15	27 24	64	6m	
131	COMP			↑		
132	063	11 11	28 16	64	3m	
133	COMP			↑		
134	067	11 10	28 17	64	6m	
135	COMP			↑		
136	066	11 11	27 11	64	4m	
137	COMP			↑		
138	065	11 12	27 37	64	8m	E obj is 063, W is 065W
139	COMP			↑		
140	184	11 12	27 37	64	5m	
141	COMP			↑		
142	185	11 12	27 40	64	7m	
143	COMP			↑		
144	062	11 05	31 23	64	4m	
145	COMP			↑		
146	070	11 09	28 37	64	5m	
147	COMP			↑		may need to combine these
148	070			↑	7m	Summed
149	071	11 18	28 31	64	5m	power switched to generator
150	COMP			↑		
151	074	11 13	27 52	64	7m	
152	COMP			↑		
153	077	11 10	27 05	64	6m	all one object - drifted during
154	COMP			↑		exposure.

(↳ 065, 065W)

60 inch Telescope Log
Observer: Rines
PI: Rines, Tueller, Koratkar

Spectrograph: FAST
Grating: 300l
Date: 2/16/99

Page: 6997

Number	Object	R.A.	Dec.	L/R	Exp	Comments
155	079	11 13	29 48	64	6m	
156	COMP			↑		
157	080	11 10	29 20	64	8m	
158	COMP			↑		
159	082	11 29	27 33	64	5m	
160	COMP			↑		
161	085	11 08	28 31	64	3m	
162	COMP			↑		
163	086	11 11	28 15	64	5m	
164	COMP			↑		
165	087	11 15	28 33	64	3m	
166	COMP			↑		
167	088	11 12	28 01	64	3m	
168	COMP			↑		
169	289	11 12	28 02	64	8m	
170	COMP			↑		
171	MRK421	11 01	38 28	6	4m	I think this is correct, but it doesn't look like an AGN
172	COMP			↑		
173	A1644D5017	12 55	-17 35	81	12m	
174	COMP			↑		
175	020	12 55	-17 31	81	12m	
176	COMP			↑		
177	023	12 54	-17 25	81	12m	
178	COMP			↑		
179	mkw12-1.027	14 07	+9 38	35	10m	
180	COMP			↑		
181	awm3_1.019	14 27	26 29	35	6m	
182	COMP			↑		
183	020	14 32	26 00	35	7m	
184	COMP			↑		

60 inch Telescope Log
Observer: Rines
PI: Kowalski, Rines, Wilkes

Spectrograph: FAST
Grating: 300l
Date: 2/16/99

Page: 6998

Number	Object	R.A.	Dec.	L/R	Exp	Comments
185	awm3_i.021	14 32	26 03	35	6m	
186	COMP			↑		
187	022	14 33	24 47	35	6m	obj. in E
188	COMP			↑		
189	a2199b49	16 25	35 58	64	8m	
190	COMP			↑		
191	a2199b52	16 27	42 40	64	8m	
192	COMP			↑		
193	a2199b.51	16 27	43 28	64	9m	
194	COMP			↑		
195	53	16 27	42 38	64	5m	
196	COMP			↑		
197	54	16 28	42 16	64	5m	
198	COMP			↑		
199	55	16 30	36 13	64	8m	
200	COMP			↑		
201	N5548	14 17	25 08	6	3m	
202	COMP			↑		
203	MRK279	13 52	69 18	6	3m	
204	COMP			↑		
205	N4151	12 08	39 41	6	30s	
206	COMP			↑		
207	HZ44	13 23	36 08	56	2m	
208	COMP			↑		
209	HZ44	13 23	36 08	56	2m	bin by 2
210	COMP			↑		
211-220	BIAS				0s	
221-230	FLAT				12s	
231-240	BIAS				0s	bin by 4
241-250	FLAT				6s	
251-260	DARK				15m	bin by 2

60 inch Telescope Log
Observer: K Rines
PI: Ali, Huchra

Spectrograph: FAST
Grating: 300l
Date: 2/17/99

Page: 6999

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	bin by 4
11-20	BIAS				0s	mostly clear, hazy
21-30	FLAT				6s	
31-40	BIAS				0s	bin by 2
41-50	FLAT				12s	
51-60	FLAT				15s	tilt = 590
61-65	sky				2s	6:25
66	COMP				6s	
67	Feige 25	2 38	+5 28	56	2m	bin by 4
68	COMP			↑		
69	Feige 25	2 38	+5 28	56	2m	bin by 2
70	COMP			↑		
71	M31	0 42	41 16	57	60s	
72	COMP			↑		
73-75	CI Com	4 19	55 59	107	2, 20, 90	
76	COMP			↑		
77	2m0149559.9+41	1 49	41 40	68	8m	obj to E
78	COMP			↑		
79	2m0152407+33	1 52	33 10	68	6m	
80	COMP			↑		
81	2m0151059+37	1 51	37 43	68	8m	
82	COMP			↑		
83	2m0150443+29	1 50	29 55	68	10m	
84	COMP			↑		
85	2m0149579+32	1 49	32 06	68	8m	cm
86	COMP			↑		
87	2m0145559+32	1 45	32 38	68	6m	obj to E
88	COMP			↑		
89	2m0147085+33	1 47	33 06	68	10m	
90	COMP			↑		

60 inch Telescope Log
Observer: Rines
PI: Huchra, Kurany', Kirshner, Rines

Spectrograph: FAST
Grating: 300l
Date: 2/17/99
Page: 7000

Number	Object	R.A.	Dec.	L/R	Exp	Comments
91	2m0148 11.8, 41	1 48	41 41	68	10m	
92	COMP			↑		
93	2m014940.4, 41	1 49	41 55	68	8m	
94	COMP			↑		
95	2m015005.8, 41	1 50	41 55	68	10m	
96	COMP			↑		
97	obj-1062	2 51	42 13	35	20m	* to W
98	COMP			↑		
99	obj-1063	2 57	41 53	35	20m	em
100	COMP			↑		
101	obj-1065	2 57	42 10	35	20m	obj to W, obj to E
102	COMP			↑		
105	SN1999aa	8 27	21 29	2	20m	till=590, bin by 2, X=-10
106	COMP			↑		
107	Feige 34	10 39	43 06	56	2m	X=82
108	COMP			↑		
109	p 448	8 41	19 16	82	10m	cirrus
110	COMP			↑		obj to W
111	2m074919.5, 21	7 49	21 49	68	6m	* to W
112	COMP			↑		clearing
113	2m070428.7, 18	7 04	18 35	68	4m	obj to E
114	COMP			↑		
115	2m071435.7, 05	7 14	5 33	68	8m	
116	COMP			↑		
117	2m074551.4, 18	7 45	18 05	68	8m	stars? M*
118	COMP			↑		
119	a1213-092	11 09	28 54	64	6m	
120	COMP			↑		
121	-081	11 14	27 14	64	6m	
122	COMP			↑		

103 obj-1068 2 57 41 55 35 20m
104 COMP ↑

101 - only 2 objs on slit; obj to E is a star (this is object nearest center of slit)

60 inch Telescope Log

Observer: Rines

PI: Rines

Spectrograph: FAST

Grating: 300l

Date: 2/17/99

Page: 7001

Number	Object	R.A.	Dec.	L/R	Exp	Comments
123	a1213_083	11 19	31 14	64	4m	
124	COMP			↑		
125	084	11 02	29 34	64	5m	
126	COMP			↑		
127	069	11 12	31 22	64	6m	Ha @ 6835 Å
128	COMP			↑		
129	072	11 24	28 45	64	7m	Underexposed
130	COMP			↑		
131	073	11 31	28 34	64	10m	Underexposed Em at pixel 2032.
132	COMP			↑		
133	076	11 05	30 04	64	4m	
134	COMP			↑		
135	076NW	11 05	30 04	64	5m	
136	COMP			↑		
137	089	11 16	27 34	64	10m	obj to W em
138	COMP			↑		
139	090	11 04	29 49	64	4m	
140	COMP			↑		
141	091	11 05	29 08	64	4m	
142	COMP			↑		
143	095	11 01	29 56	64	6m	
144	COMP			↑		
145	096	11 14	28 09	64	3m	
146	COMP			↑		
147	097	11 14	29 32	64	3m	
148	COMP			↑		
149	093	11 17	29 08	64	3m	
150	COMP			↑		
151	098	11 15	27 46	64	3m	
152	COMP			↑		

60 inch Telescope Log
Observer: Rines
PI: Rines

Spectrograph: FAST
Grating: 300l
Date: 2/17/99
Page: 7002

Number	Object	R.A.	Dec.	L/R	Exp	Comments
153	a1213_100	11 11	27 39	64	3m	
154	COMP			↑		
155	099	11 20	27 17	64	3m	
156	COMP			↑		
157	103	11 17	27 21	64	3m	obj to E
158	COMP			↑		
159	105	11 17	27 05	64	5m	big gal
160	COMP			↑		
161	101	11 17	29 18	64	3m	Sy1
162	COMP			↑		
163	102	11 12	27 28	64	3m	
164	COMP			↑		
165	104	11 08	31 10	64	4m	
166	COMP			↑		
167	106	11 08	29 48	64	10m	
168	COMP			↑		
169	107	11 09	30 59	64	3m	
170	COMP			↑		
171	108	11 10	28 28	64	4m	
172	COMP			↑		
173	109	11 11	28 40	64	3m	
174	COMP			↑		
175	110	11 26	28 20	64	3m	
176	COMP			↑		
177	094	11 31	29 40	64	3m	
178	COMP			↑		
179	111	11 02	29 15	64	3m	
180	COMP			↑		
181	111SW	11 02	29 15	64	6m	
182	COMP			↑		

60 inch Telescope Log
Observer: Rines
PI: Rines

Spectrograph: EAST
Grating: 300l
Date: 2/17/99

Page: 7003

Number	Object	R.A.	Dec.	L/R	Exp	Comments
183	a1213_112	11 05	30 31	64	6m	
184	COMP			↑		
185	113E, 113W	11 17	28 05	64	8m	2 gals, bin by 2
186	COMP			↑		$\Delta = 95°$
187	114E, 114W	11 19	27 51	64	8m	2 gals $\Delta = 71°$
188	COMP			↑		
189	115E, 115W	11 27	27 37	64	8m	2 gals $\Delta = 90°$, bin by 4
190	COMP			↑		3rd obj to W
191	116	11 31	27 14	64	3m	
192	COMP			↑		
193	118	11 17	27 57	64	3m	
194	COMP			↑		
195	119	11 18	27 12	64	10m	
196	COMP			↑		
197	117	11 02	28 14	64	6m	
198	COMP			↑		
199	120	11 02	31 23	64	6m	
200	COMP			↑		
201	121	11 15	29 09	64	3m	
202	COMP			↑		
203	122	11 08	28 32	64	6m	star?
204	COMP			↑		
205	123	11 10	29 34	64	3m	
206	COMP			↑		
207	124	11 25	27 31	64	4m	
208	COMP			↑		
209	125	11 10	30 42	64	3m	
210	COMP			↑		
211	126	11 19	30 23	64	5m	
212	COMP			↑		

60 inch Telescope Log
Observer: Rines
PI: Rines, Kovanyi

Spectrograph: FAST
Grating: 300l
Date: 2/17/99
Page: 7004

Number	Object	R.A.	Dec.	L/R	Exp	Comments
213	a1213_127	11 07	28 30	64	4m	
214	COMP			↑		
215	128	11 10	28 37	64	3m	
216	COMP			↑		
217	mkw12-1.009	14 01	10 07	35	6m	
218	COMP			↑		
219	010	14 07	9 40	35	5m	
220	COMP			↑		
221	011	14 05	8 54	35	15m	obj to E 4m
222	COMP			↑		
223	012	14 02	9 46	35	3m	
224	COMP			↑		
225	013	14 04	8 20	35	12m	6m
226	COMP			↑		
227	015	14 00	9 17	35	8m	
228	COMP			↑		
229	017	14 06	9 21	35	3m	
230	COMP			↑		
231	020	14 05	8 59	35	3m	
232	COMP			↑		
233	021	14 06	10 20	35	4m	
234	COMP			↑		
235	022	14 07	10 13	35	6m	
236	COMP			↑		
237	N5548	14 17	25 08	6	3m	
238	COMP			↑		
239	N4051	12 03	44 31	6	2m	
240	COMP			↑		
241	MRK421	11 04	38 12	6	4m	
242	COMP			↑		

60 inch Telescope Log
Observer: Rines
PI: All

Spectrograph: EAST
Grating: 300l
Date: 2/17/99

Page: 7005

Number	Object	R.A.	Dec.	L/R	Exp	Comments
243	HZ44	13 23	38 12	56	2m	
244	COMP			↑		
245	HZ44	13 23	38 12	56	2m	bin by 2
246	COMP			↑		
247-256	BIAS				0s	
257-266	FLAT				12s	
267-276	BIAS				0s	bin by 4
277-286	FLAT				6s	
287-296	DARK				15m	bin by 2

60 inch Telescope Log
Observer: K Rines
PI: Ali, Hinshaw

Spectrograph: FAST
Grating: 300 l
Date: 2/18/99

Page: 700c

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	bin by 4
11-20	BIAS				0	partly cloudy
21-30	FLAT				6s	
31-40	BIAS				0	bin by 2
41-50	FLAT				12s	
51-60	FLAT				15s	Hilt = 540
61-65	sky				2s	
66	COMP				6s	
67	Fe/Ne 25	2 38	5 27	56	3m	
68	COMP			↑		
69	PG0310+149	3 13	15 06	56	4m	
70				↑		
71	NI700	4 56	-4 52	57	5m	
72	COMP			↑		cloudy!
73	BGGem	6 03	27 41	100	6m	
74	COMP			↑		
75-77	CI Cam	4 19	55 59	107	2, 20, 90s	
78	COMP			↑		
79	CI Cam	4 19	55 59	107	2s	retake
80	2m 040050.8+14	4 00	14 32	68	4m	a hole in the clouds
81	COMP			↑		
82	2m 041249.1+13	4 12	13 2.9	69	7m	UNDEREXPOSED. POOR
83	COMP			↑		
84	2m 062534.1+16	6 25	16 47	68	10m	thin clouds - maybe X
85	COMP			↑		possible em at 2423??
86	2m 031913.6+35	3 19	35 29	68	5m	
87	COMP			↑		
88	2m 032207.7+33	3 22	33 34	68	5m	
89	COMP			↑		

60 inch Telescope Log
Observer: Rines
PI: Huchra, Kirshner, Mahdavi

Spectrograph: FAST
Grating: 300l
Date: 2/18/99

Page: 7007

Number	Object	R.A.	Dec.	L/R	Exp	Comments
90	2m0339173.15	3 39	15 51	68	7m	
91	COMP			↑		
92	2m0545344.14	5 45	14 53	68	4m	objects to E
93	COMP			↑		
94	2m0544444.1p16	5 44	16 48	68	3m	★ to W
95	COMP			↑		
96	2m0520304.4p14	5 20	14 26	68	3m	
97	COMP			↑		
98	2m0519387.p22	5 19	22 57	68	8m	
99	COMP			↑		
100	2m0547030.3p18	5 40	18 06	68	10m	obj to W
101	COMP			↑		
102	2m0535555.3p22	5 35	22 42	68	5m	clouds X
103	COMP			↑		
104	2m0647351.1p12	6 47	12 03	68	8m	tilt=590, Δ=-38
105	COMP			↑		(prepared for SN)
106	SN1999aa	8 27	21 29	2	20m	Δ=-22→+1
107	COMP			↑		WRONG!
108	Feige 34	10 39	43 21	56	2m	
109	COMP			↑		
110	SN1999aa	8 27	21 29	2	20m	RIGHT! Δ=9→30
111	COMP			↑		
112	nrgs076.274	10 06	14 00	59	10m	
113	COMP			↑		
114	275	10 06	13 32	59	7m	
115	COMP			↑		
116	277	10 06	13 32	59	20m	
117	COMP			↑		
118	279	10 07	13 58	59	12m	
119	COMP			↑		

104 - tilt 590 - WHY???
↳ NO FLATS (big 4)
NOT REDUCED

60 inch Telescope Log
Observer: Rines
PI: Rines

Spectrograph: FAST
Grating: 300l
Date: 2/18/99

Page: 7008

Number	Object	R.A.	Dec.	L/R	Exp	Comments
120	a1213_130	11 07	28 25	64	6m	
121	COMP			T		
122	131	11 10	28 42	64	6m	
123	COMP			T		
124	134W	11 21	27 06	64	6m	
125	COMP			T		
126	134E	11 21	27 06	64	8m	
127	COMP			T		
128	135	11 29	28 49	64	6m	
129	COMP			T		
130	137	11 13	27 52	64	12m	
131	COMP			T		
132	139	11 02	31 32.	64	10m	$\Delta = 81°$, 139E is E obj.
133	COMP			T		
134	140	11 11	28 44	64	8m	
135	COMP			T		
136	140N	11 11	28 45	64	4m	$\Delta = 90$
137	COMP			T		
138	143	11 12	28 16	64	5m	
139	COMP			T		
140	144	11 02	29 39	64	4m	
141	COMP			T		
142	145	11 10	28 36	64	8m	em
143	COMP			T		
144	147	11 29	27 00	64	5m	
145	COMP			T		
146	149	11 09	28 16	64	5m	
147	COMP			T		
148	151	11 17	29 29	64	4m	
149	COMP			T		

139, 139E

60 inch Telescope Log
Observer: Rines
PI: Rines, Tustin

Spectrograph: FAST
Grating: 300l
Date: 2/18/99
Page: 7009

Number	Object	R.A.	Dec.	L/R	Exp	Comments
150	a1213_152	11 27	29 07	64	4m	
151	COMP			↑		
152	154	11 13	29 28	64	4m	
153	COMP			↑		
154	155	11 21	29 26	64	6m	
155	COMP			↑		
156	161	11 15	29 16	64	5m	
157	COMP			↑		
158	164	11 27	27 15	64	12m	em, big gal
159	COMP			↑		rot. curve barely visible!
160	165	11 12	28 04	64	8m	
161	COMP			↑		
162	166	11 17	29 05	64	5m	
163	COMP			↑		
164	173	11 22	29 52	64	4m	
165	COMP			↑		
166	175	11 01	29 38	64	4m	
167	COMP			↑		
168	AM44050J0	12 57	-17 38	81	10m	
169	COMP			↑		
170	011	12 54	-17 35	81	12m	
171	COMP			↑		
172	095	12 52	-17 00	81	6m	
173	COMP			↑		
174	096	12 51	-16 59	81	7m	
175	COMP			↑		
176	100	12 54	-16 58	81	5m	
177	COMP			↑		
178	102	12 51	-16 58	81	8m	
179	COMP			↑		

60 inch Telescope Log
Observer: Rigas
PI: Koranyi

Spectrograph: FAST
Grating: 300l
Date: 2/18/99

Page: 7010

Number	Object	R.A.	Dec.	L/R	Exp	Comments
180	awm3_i.023	14 26	24 08	35	8m	
181	COMP			↑		
182	024	14 20	25 08	35	5m	obj to W
183	COMP			↑		
184	a1215_177	11 14	28 34	64	5m	
185	COMP			↑		partly cloudy
186	191	11 17	28 46	64	5m	
187	COMP			↑		
~~188~~	~~awm3_i.024N COMP~~	~~14 20~~	~~25 08~~	~~35~~	~~10m~~	~~bin by 2 4=75°~~
189	COMP			↑		NW = row 45 Δ=row?
188	2m120317.6p20	12 03	20 38	68	3m	X NOPE!
189	COMP			↑		then clouds
190	N5548	14 15	25 08	6	3m	bin by 2
191	COMP			↑		
192	MRK 279	13 52	69 18	6	8m	
193	COMP			↑		
194	N4151	12 10	39 24	6	1m	
195	COMP			↑		
196	H744	13 23	36 08	56	2m	
197	COMP			↑		
198	H744	13 23	36 08	56	2m	bin by 4
199	COMP			↑		
200	awm3_i.025	14 31	26 15	35	10m	
201				↑		
202	MRK421	11 04	38 12	6	200s	X bin by 2 NOPE - clouds
203				↑		
204	MRK421	11 04	38 12	6	7m	try again
205				↑		poor, but there
206-215	BIAS				0s	
216-225	FLAT				12s	
226-235	BIAS				0s	bin by 4
236-245	FLAT				6s	
246-255	DARK				15m	bin by 2

202 so bad, NOT added to database

60 inch Telescope Log
Observer: K Rines
PI: Alf, Huchra, Mahdavi

Spectrograph: FAST
Grating: 300l
Date: 2/19/99

Page: 7-011

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BIAS				0	
21-30	FLAT				6s	
31-40	BIAS				0	bin by 2
41-50	FLAT				12s	
51-60	FLAT				15s	tilt=570
61-65	sky				2s	C:29 bin by 4 clear
66	COMP				6s	
67	Feige25	2 38	5 20	56	2m	6:45
68	COMP			↑		
69	Feige 25	2 38	5 20	56	2m	bin by 2
70	COMP			↑		
71	M32	0 42	40 52	57	30s	bin by 4
72	COMP			↑		
73	HZ14	4 41	10 59	56	5m	
74	COMP			↑		
75-77	CTCam	4 19	55 59	107	3x20m	
78	COMP			↑		
79	2m 043707.5p12	4 37	12 21	68	4m	bin by 2 obj to E
80	COMP			↑		
81	2m 041 2032.0 p35	4 20	35 41	68	4m	bin by 4
82	COMP			↑		
83	srcgb149.150	2 42	1 35	59	5m	
84	COMP			↑		
85	149	2 42	1 31	59	5m	
86	COMP			↑		
87	151	2 43	1 39	59	7m	
88	COMP			↑		
89	154	2 43	2 00	59	4m	* to W
90	COMP			↑		

60 inch Telescope Log
Observer: Rines
PI: Mahdavi, Huchra, Rines

Spectrograph: FAST
Grating: 300 l
Date: 2/19/99

Page: 7012

Number	Object	R.A.	Dec.	L/R	Exp	Comments
91	srgb149.155	2 43	1 54	59	4m	
92	COMP			↑		
93	156	2 43	1 54	59	6m	
94	COMP			↑		
95	153	2 43	1 59	59	8m	
96	COMP			↑		
97	146	2.42	1 01	59	8m	
98	COMP			↑		
99	148	2.42	2 58	59	12m	
100	COMP			↑		
101	2m0152+8.2,40	1 52	40 20	68	8m	redo of 2/16
102	COMP			↑		
103	2m0150135,41	1 50	41 54	68	10m	obj. to E
104	COMP			↑		
105	2m0148+5.7,33	1 48	33 45	68	12m	✱ to W
106	COMP			↑		
107	a576_253	7 10	58 38	64	8m	
108	COMP			↑		
109	255	7 11	58 56	64	6m	obj to W
110	COMP			↑		
111	256	7 13	58 15	64	5m	
112	COMP			↑		
113	268	7 17	58 38	64	6m	✱ to W, obj to E
114	COMP			↑		
115	270	7 08	54 46	64	10m	em
116	COMP			↑		
117	275	7 00	53 42	64	8m	
118	COMP			↑		
119	276	6 56	56 03	64	5m	✱ to W
120	COMP			↑		

60 inch Telescope Log
Observer: Rines
PI: Rines, Kirshner, Mahdavi

Spectrograph: FAST
Grating: 300l
Date: 2/19/99

Page: 7013

Number	Object	R.A.	Dec.	L/R	Exp	Comments
121	a576_292	7 05	53 58	64	15m	
122	COMP			↑		
123	291	7 37	55 38	64	12m	
124	COMP			↑		
125	297	7 44	53 50	64	15m	
126	COMP			↑		
127	248	7 08	56 03	64	20m	
128	COMP			↑		
129	SN1999aa	8 27	21 29	2	20m	HA = 590, χ = 24 → 39
130	COMP			↑		obj at 115
131	Feige 34	10 39	43 21	56	2m	χ = 64°
132	COMP			↑		
133	nrgs038.189	9 23	22 07	59	15m	redo from 2/16 PA = 90°
134	COMP			↑		obj. to W
135	nrgs076.280	10 07	13 55	59	7m	
136	COMP			↑		
137	281	10 07	15 03	59	6m	
138	COMP			↑		
139	283	10 07	14 24	59	7m	
140	COMP			↑		
141	284	10 07	14 52	59	4m	
142	COMP			↑		
143	287	10 07	14 58	59	5m	redo from 2/16
144	COMP			↑		
145	288	10 07	14 36	59	4m	
146	COMP			↑		
147	289	10 07	14 36	59	4m	em!
148	COMP			↑		
149	285	10 07	14 46	59	4m	
150	COMP			↑		

60 inch Telescope Log
Observer: Rines
PI: Rines

Spectrograph: EAST
Grating: 300l
Date: 2/19/99

Page: 7014

Number	Object	R.A.	Dec.	L/R	Exp	Comments
151	a1213-172	11 13	28 03	64	10m	
152	COMP			↑		
153	180	11 28	28 09	64	5m	
154	COMP			↑		
155	188	11 08	28 57	64	4m	
156	COMP			↑		
157	193	11 23	27 15	64	6m	obj to E
158	COMP			↑		
159	198	11 19	26 58	64	10m	
160	COMP			↑		
161	202	11 17	31 14	64	15m	
162	COMP			↑		
163	207	11 01	28 50	64	8m	
164	COMP			↑		
165	209	11 23	27 30	64	8m	
166	COMP			↑		
167	213	11 17	27 18	64	5m	
168	COMP			↑		
169	211	11 15	28 35	64	6m	
170	COMP			↑		
171	210	11 13	28 45	64	4m	obj to E
172	COMP			↑		
173	215	11 28	27 09	64	8m	
174	COMP			↑		
175	222, 222E	11 28	27 22	64	15m	222E is E obj
176	COMP			↑		
177	220	11 18	28 53	64	5m	
178	COMP			↑		
179	256	11 18	28 54	64	4m	
180	COMP			↑		

222, 222E

60 inch Telescope Log
Observer: Rines
PI: Rines

Spectrograph: FAST
Grating: 300l
Date: 2/19/99

Page: 7015

Number	Object	R.A.	Dec.	L/R	Exp	Comments
181	a1213.727	11 20	28 50	64 ↑	3m	
182	COMP					
183	221	11 21	29 09	64 ↑	4m	
184	COMP					
185	218	11 10	29 02	64 ↑	5m	em
186	COMP					
187	226	11 13	28 57	64 ↑	4m	
188	COMP					
189	231	11 10	28 41	64 ↑	8m	
190	COMP					
191	293	11 10	28 41	64 ↑	3m	
192	COMP					
193	232	11 15	29 09	64 ↑	5m	
194	COMP					
195	237	11 15	27 28	64 ↑	7m	
196	COMP					
197	228	11 24	27 19	64 ↑	10m	¼ to W
198	COMP					
199	230	11 26	27 11	64 ↑	15m	obj to W
200	COMP					
201	229	11 27	27 20	64 ↑	10m	
202	COMP					
203	242	11 03	29 14	64 ↑	6m	
204	COMP					
205	240	11 08	31 11	64 ↑	8m	em
206	COMP					
207	246	11 26	30 25	64 ↑	10m	
208	COMP					
209	258	11 10	28 44	64 ↑	5m	
210	COMP					

60 inch Telescope Log
Observer: Rines
PI: Rines, Koranyi, Willner

Spectrograph: FAST
Grating: 300l
Date: 2/19/99

Page: 7016

239, 239E

Number	Object	R.A.	Dec.	L/R	Exp	Comments
211	a1213-245	11 20	29 12	64	6m	
212	COMP			↑		
213	[redacted]	11 05	28 36	64	10m	E obj is 239E, Δ=80
214	COMP			↑		W obj is *, middle is 239
215	305	11 30	27 07	64	6m	
216	COMP			↑		Δ=80
217	272	11 30	27 19	64	10m	
218	COMP			↑		
219	mkw12-i.024	13 58	+9 03	35	6m	obj to E
220	COMP			↑		
221	025	14 01	10 32	35	8m	
222	COMP			↑		
223	026	14 00	9 55	35	5m	
224	COMP			↑		
225	N5548	14 17	25 08	6	3m	
226	COMP			↑		
227	MRK421	11 04	38 12	6	4m	
228	COMP			↑		
229	N4051	12 03	44 32	6	2m	
230	COMP			↑		
231	HZ44	13 23	36 08	56	2m	
232	COMP			↑		
233	HZ44	13 23	36 08	56	2m	bin by 2
234	COMP			↑		
235-244	BIAS				0	
245-254	FLAT				12s	
255-264	BIAS				0	bin by 4
265-274	FLAT				6s	
275-284	DARK				15m	bin by 2

60 inch Telescope Log
Observer: CALKINS
PI: Hill, Hutchra, Garcia

Spectrograph: FAST
Grating: 300x
Date: 2/20/99

Page: 7017

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-5	DARK				15m	
6-15	B.T.MS				0s	
16-25	FLAT				60s	
26-35	B.T.MS				0s	
36-45	FLAT				12s	
46	Hiltner600	6 45	2 08	R 56	45s	
47	comp			↑		
48	MRK335	00 06	20 12	R 6	4m	
49	comp			↑		
50	ALS0120	5 16	-00 09	R 6	3m	object west
50	comp			↑		
52	NGC1700	4 56	-4 52	R 57	4m	
53	comp			↑		
54	2MO14810.9p	1 48	33 10	R 68	20m	
55	comp			↑		
56	2M014607.6p	1 46	29 51	R 68	15m	
57	comp			↑		
58	2M014608.3p	1 46	39 32	R 68	6m	object east
59	comp			↑		
60	2M014548.1p	1 45	41 32	R 68	20m	object east (redo) em
61	comp			↑		
62	2M015007.1p	1 50	40 44	R 68	17m	central object
63	comp			↑		
64	2M014749.6p	1 47	33 16	R 68	12m	
65	comp			↑		
66	2M015055.9p	1 50	40 09	R 68	12m	
67	comp			↑		
68	2M015102.2p	1 51	33 26	R 68	15m	
69	comp			↑		
70-72	CCCam	4 19	55 58	R 107	2,20,8	

60 inch Telescope Log Mahdavi
Observer: Calkins Kirshner
PI: Garcia, Kenyon, Koranyi

Spectrograph: FAST
Grating: 300l
Date: 2/20/99

Page: 7018

Number	Object	R.A.	Dec.	L/R	Exp	Comments
73	comp			↑		
74	BGGem	6 03	27 41	F100	6m	
75	comp			↑		
76	awm1-069	9 17	20 40	F35	20m	(redo)
77	comp			↑		
78	awm1-075	9 18	15 52	F35	20m	
79	comp			↑		
80	awm1-076	9 16	20 10	F35	17m	
81	comp			↑		
82	awm1-079	9 18	19 57	F35	20m	PA = 45°
83	comp			↑		
84	sn1999gg	8 27	21 28	F2	15m	PA = 42°
85	comp			↑		
86	PG0934+554	9 38	55 05	F56	2m	PA = 40°
87	comp			↑		
88	nrqs076.278	10 07	14 43	F59	20m	
89	comp			↑		
90	nrqs076.282	10 07	15 02	F59	15m	(weak)
91	comp			↑		
92	nrqs076.286	10 07	13 34	F59	15m	
93	comp			↑		
94	nrqs076.290	10 07	14 02	F59	12m	bright object west "ea
95	comp			↑		
96	nrqs076.291	10 08	14 48	F59	12m	
97	comp			↑		
98	nrqs076.292	10 08	13 35	F59	10m	
99	comp			↑		
100	nrqs076.294	10 08	14 15	F59	4m	
101	comp			↑		
102	nrqs076.295	10 08	14 33	F59	8m	

60 inch Telescope Log
Observer: CALKINS
PI: Mahdavi, Kirshner, Kennicutt

Spectrograph: FAST
Grating: 300L
Date: 2/20/99

Page: 7019

Number	Object	R.A.	Dec.	L/R	Exp	Comments
103	comp			↑		
104-106	sn1998s	11 46	47 28	12	20m	PA=0° (still there!!)
107	comp			↑		
108	mkw4-i.010	12 01	01 17	35	20m	PA=69°
109	comp			↑		
110	mkw4-i.015	12 00	01 16	35	12m	
111	comp			↑		
112	mkw4-i.018	11 59	01 42	35	12m	
113	comp			↑		
114	sn1999E	13 17	-18 32	12	15m	PA=0°
115	comp			↑		
116	mkw12-i.019	14 06	09 20	35	20m	
117	comp			↑		
118	mkw12-i.016	14 05	9 32	35	12m	
119	comp			↑		
120	mkw12-i.019'	14 01	8 56	35	20m	
121	comp			↑		
122	mkw12-i.028	14 00	08 38	35	20m	Interesting! ALL emission BALMER-LINES IN ARC
123	comp			↑		
124	mkw12-i.029	14 00	9 54	35	12m	
125	comp			↑		
126	mkw12-i.030	14 06	9 09	35	12m	
127	comp			↑		
128	mkw12-i.031	13 59	8 36	35	8m	
129	comp			↑		
130	mkw12-i.032	14 07	9 53	35	10m	
131	comp			↑		
132	N5548	14 17	25 08	26	4m	
133	comp			↑		
134	N5846	15 06	01 36	35N	5m	

VERY NICE!!

108 - looks like H+K @6744 and at 35044
image looks like one galaxy though

60 inch Telescope Log
Observer: CALKINS
PI: ALL

Spectrograph: FAST
Grating: 300L
Date: 2/20/99

Page: 7020

Number	Object	R.A.	Dec.	L/R	Exp	Comments
135	comp			↑		
136	H244	13 23	36 08	11:52	3m	
137	comp			↑		
136-142	sky			11:57	5s	
143	comp			↑		
144-153	BIAS				0s	
154-163	FLAT				6s	
164-173	BIAS				0s	
174-183	FLAT				12s	
184-193	DARK				15m	

60 inch Telescope Log

Observer: CALKINS

PI: ALL

Spectrograph: FAST

Grating: 300l

Date: 2/21/99

Page: 7021

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BIAS				0s	
21-30	FLAT				60s	
31-40	BIAS				0s	
41-50	FLAT				12.5	
						Cloud cover thru-
						out the night.
						Not so much as a
						sucker-hole!!

60 Inch Telescope Log

Observer: CALZETTI

PI: Ali, Kirshner, Huchra

Spectrograph: FAST

Grating: 300l.

Page: 1022

Date: 2/22/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-9	DARK				15m	
10-19	BIAS				0s	
20-29	FLAT				60s	
30-39	BIAS				0s	
40-49	FLAT				12s	
50-54	sky			R57	2s	
55	comp			↑		scattered cirrus
56	HZ14	4 41	10 59	R56	6m	@ sunset
57	comp			↑		
58	M31	00 42	41 16	R57	90s	
59	comp			↑		
60	MRK335	00 06	20 12	R6	3m	
61	comp			↑		
62	sn1998es	01 37	05 52	R2	15m	PA=56°, star "east"
63	comp			↑		
64	Hiltner600	00 45	02 07	R56	1m	PA=26°
65	comp			↑		
66	2m014807.2p	01 48	40 26	R68	20m	thru thin clouds
67	comp			↑		
68	2m014713.2p	01 47	33 01	R68	20m	PA=0°, clouds
69	comp			↑		
70	2m071647.2p	07 16	03 51	R68	15m	
71	comp			↑		
72	2m071550.9p	07 15	04 32	R68	6m	
73	comp			↑		
74	2m075305.2p	7 52	23 29	R68	3.5m	stellar?
75	comp			↑		
76	2m075240.8p	7 52	18 22	R68	3.5m	
77	comp			↑		
78	2m010354.6p	7 03	20 08	R68	10m	

60 inch Telescope Log
Observer: CALKINS, Mink
PI: Huchra, Garcia, Kenyon, Kirshner
Spectrograph: FAST
Grating: 300l
Page: 7023
Date: 2/22/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
79	comp			↑		
80	2M09613.7p	7 06	20 57	π 68 ↑	12m	PA = 70°, central object
81	comp					
82	2M07465e.3p	7 46	22 17	π 68 ↑	3.5m	
83	comp					
84	2M07154.5.1p	7 15	5 14	π 68 ↑	12m	
85	comp					
86	2M07045.8.p	7 05	18 50	π 68 ↑	5m	
87	comp					
88-90	CICam	4 19	56 00	π 107 ↑	2,20,90	
91	comp					
92	BGGem	6 03	27 41	π 100 ↑	7m	
93	comp					
94	sn1999aa	8 27	21 29	π 2 ↑	17m	clouds, PA = 11°
95	comp					
96	sn1999X	8 54	36 31	π 2 ↑	20m	PA = 34°, gal "west"
97	comp					
98	sn1999z	10 22	27 21	π 2 ↑	20m	PA = 71° gal "east"
99	comp					
100	980112.105.393	9 18	21 17	π 78f ↑	15m	Tilt = 672.0
101	comp					
102	EY Inmtspect 74m	10 19	29 41	π 78f ↑	15m	
103	comp					
104	970602.19.1786	11 44	20 10	π 78f ↑	20m	object east
105	comp					
106	320.089279	12 19	32 12	π 78f ↑	15m	
107	comp					
108	121941p0009E	12 22	-00 07	π 78f ↑	10m	(Binary System)
109	comp					
110	HS1259p22.0	13 01	21 43	π 78f	7m	

60 inch Telescope Log
Observer: CALKINS
PI: Mink, Ali, Kirshner

Spectrograph: FAST
Grating: 300x6
Date: 2/22/99

Page: 7024

Number	Object	R.A.	Dec.	L/R	Exp	Comments
111	comp			↑		
112	c2007z	13 40	28 55	IT 78E	17m	
113	comp			↑		
114	c14Jx	14 11	28 51	IT 78E	20m	
115	comp			↑		
116	MRK421	11 04	38 12	IT 6	4m	
117	comp			↑		
118	NS227	10 23	19 51	IT 6	3m	
119	comp			↑		
120	N4051	12 03	44 31	IT 6	2m	
121	comp			↑		
122	N4151	12 10	39 24	IT 6	30s	
123	comp			↑		
124	SBS1425p606	14 26	60 26	IT 6	12m	
125	comp			↑		
126	N4258	12 18	47 18	IT 6	2m	
127	comp			↑		
128	MRK279	13 52	69 18	IT 6	3m	
129	comp			↑		
130	NS548	14 18	25 08	IT 6	3m	
131	comp			↑		
132	sn1999E	13 17	-18 33	IT 2	15m	PA=11°, gal "east"
133	comp			↑		
134	awm3-56	14 26	26 12	IT 78E	17m	Tilt - 672.0
135	comp			↑		
136	970614.19.619	14 54	18 30	IT 78E	15m	
137	comp			↑		
138	327.009355	15 03	26 54	IT 78E	7m	
139	comp			4		
140	970615.144.133	15 17	17 58	IT 78E	20m	

60 inch Telescope Log
Observer: CALKINS
PI: Mink

Spectrograph: FAST
Grating: 300 L
Date: 2/22/99

Page: 7025

Number	Object	R.A.	Dec.	L/R	Exp	Comments
141	comp			↑		
142	970615.146901	15 19	18 38	IF 78 f	20m	
145	comp			↑		
146	N4486K	12 30	12 28	IF 78 f	5m	
147	comp			↑		
148	N4486B	12 30	12 28	IF 78 f	5m	
149	comp			↑		
150	N4486B	12 30	12 28	IF 78 f	5m	
151	comp			↑		
152	N4486B	12 30	12 28	IF 78 f	5m	
153	comp			↑		
154	N4486B	12 30	12 28	IF 78 f	5m	
155	comp			↑		
156	N4486B	12 30	12 28	IF 78 f	5m	
157	comp			↑		
158	328.124317	15 53	32 18	IF 78 f	7m	
159	comp			↑		
160	1555p0116	15 57	01 06	IF 78 f	12m	
161	comp			↑		
162	0302019	17 18	56 39	IF 78 f	20m	
163	comp			↑		
164-173	FLAT				8s	Filt=672
174-183	BIAS				0s	
184-193	FLAT				60s	
194-203	BIAS				0s	
204-213	FLAT				12s	
214-223	DARK				15m	