

** Start of FAST Run **

60 inch Telescope Log
 Observer: PBerlin
 PI: All
 Spectrograph: FAST
 Grating: 300R Page: 6859
 Date: 1/8/99

Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-10	B7AS				0s	
11-20	FLAT				6s	Clear skies!
21-30	B7AS				0s	windy (E)
31-40	FLAT				12s	
41-45	sky	Zenith		57	2s	
46	COMP			↑	5s	
47-49	HD 1337	00:17	+51:22	57	1s	
50	COMP			↑		
51-53	HD 22107	00:26	+51:16	57	2s	
54	COMP			↑		
55-57	HD 221855	00:21	+60:24	57	2s	
58	COMP			↑		
59-61	HD 225160	00:04	+62:13	57	2s	
62	COMP			↑		
63-65	HD 108	00:06	+63:40	57	2s	
66	COMP			↑		
67-69	HD 276429	00:29	+60:12	57	4s	
70	COMP			↑		
71-73	HD 217046	22:51	+62:27	57	5s	
74	COMP			↑		
75	M32	00:31	+40:33	57	30s	
76	COMP			↑		
77	223m280	00:11	+41:25	57	4m	
78	COMP			↑		
79	MRK 335	00:03	+19:55	6	4m	
80	COMP			↑		
81	N 7465	23:23	+06:52	6	3m	
82	COMP			↑		
83	ZM003330	00:33	+15:51	60	15m	Star in slit to E
84	COMP			↑		

chip gain calculation slightly low

60 inch Telescope Log

Observer: PB
 PI: Kenny - Huchra

Spectrograph: EAST
 Grating: 300R
 Date: 1/8/99

Page: 6860

Number	Object	R.A.	Dec.	L/R	Exp	Comments
85	ZM003217.6	00:32	+12:25	68	10m	
86	COMP			T		
87	021847p570549	02:18	+57:05	80	5m	to E
88	COMP			T		
89	021846p570617	02:18	+57:06	80	7m	
90	COMP			T		
91	021847p57098	02:18	+57:08	80	30s	
92				T		
93	021848p5706	02:18	+57:06	80	7m	
94				T		
95	021849p5706	02:18	+57:06	80	2m	
96	COMP			T		
97	Sra6158-021	02:55	+08:18	59	20m	em poor seeing
98	COMP			T		
99	.024	02:55	+08:13	59	20m	
100	COMP			T		
101	.028	02:56	+08:29	59	20m	
102	COMP			T		
103	.034	02:56	+08:06	59	20m	
104	COMP			T		
105	.038	03:00	+09:04	59	20m	
106	COMP			T		
107	SN1998es	01:37	+05:52	Z	20m	
108	COMP			T		
109	Sra6158-017	02:55	+09:12	59	20m	PA=60 to rotate but is out of slit
110	COMP			T		
111	.035	02:57	+08:57	59	20m	
112	COMP			T		

K + 8:30

60 inch Telescope Log

Observer: PB
 PI: Huchra

Spectrograph: FAST
 Grating: 3008
 Date: 1/8/99

Page: 0261

Number	Object	R. A.	Dec.	L/R	Exp	Comments
113-5	CF Cam	04:49	+55:59	107	3, 30, 20	
116	COMP			T		Seeing 3-4"! ↓
117	Bulgem	06:03	+27:41	100	6m	
118	COMP			T		
119	Akato	05:13	-00:12	6	4m	
120	COMP			T		
121-122	Hiltner 60	06:42	+02:11	56	6m	
123	COMP			T		
124	ZM051856.2	05:18	+16:12	68	8m	
125	COMP			T		
126	ZM050101.5	05:01	+12:33	68	20m	
127	COMP			T		
128	ZM050656.2	05:06	+26:45	68	20m	
129	COMP			T		
130	ZM051153.9	05:11	+20:33	68	20m	
131	COMP			T		
132	ZM051451.5	05:14	+19:05	68	20m	m *
133	COMP			T		
134	ZM051626.2	05:16	+15:17	68	20m	
135	COMP			T		
136	ZM051632.0	05:16	+14:07	68	20m	
137	COMP			T		
138	ZM070255.6	07:02	+29:12	68	20m	* to E
139	COMP			T		
140	ZM070310.4	07:03	+24:10	68	20m	
141	COMP			T		
142	ZM070210.4	07:02	+28:41	68	20m	
143	COMP			T		
144	ZM070135.6	07:01	+21:05	68	12m	
145	COMP			T		

4746
141569

60 inch Telescope Log

Observer: PB
 PI: Dank.

Spectrograph: FAST

Grating: 3000

Page: 6862

Date: 1/8/99

Number	Object	R. A.	Dec.	L/R	Exp	Comments
146	ZM07115.6	07:12	+18:39	68	20m	hub. quasar! → $z \approx 0.16!$
147	COMP			↑		
148	ZM071240.2	07:12	+18:09	69	20m	Poor seeing! ↓
149	COMP			↑		
150	ZM071109.1	07:15	+21:09	68	15m	
151	COMP			↑		
152	mK02.029	10:29	-03:25	35	20m	
153	COMP			↑		Lucas measures 5"
154	028	10:27	-03:20	35	12m	Seeing @ 48"
155	COMP			↑		
156	021	10:27	-02:34	35	20m	
157	COMP			↑		
158	032	10:29	-02:44	35	20m	cm-dk
159	COMP			↑		
160	029	10:26	-03:15	35	20m	
161	COMP			↑		
162	030	10:24	-02:53	35	20m	
163	COMP			↑		Poor seeing
164	N4151	12:08	+39:41	6	45s	all night!
165	COMP			↑		
166	N5548	14:15	+25:22	6	5m	
167	COMP			↑		clear ↓ down
168-9	H2M	13:21	+36:23	56	3m	
170	COMP			↑		
171-180	BIAS				0s	
181-190	FLAT				6s	
191-200	BIAS				0s	
201-210	FLAT				12s	
211-220	DARK				15m	

60 inch Telescope Log
 Observer: CALVIN
 PI: All, Kenyon
 Spectrograph: FAST
 Grating: 300L
 Date: 01/09/99
 Page: 6863

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-5	DARK				15m	
6-15	BIAS				0s	
16-25	FLAT				60s	
26-35	FLAT				20s	1.1" slit
36-45	BIAS				0s	
46-55	FLAT				12s	
56	PGC 2057134	2 08	13 36	#56	5m	weird spectra
57	comp			↑		
58	M31	00 42	41 16	#57	1m	
59	comp			↑		
60	MRK 335	00 06	20 12	#6	3m	
61	comp			↑		
62	021847p570808	2 18	57 08	#80	20m	☉, extremely bright star to the east
63	comp			↑		
64	021849p570521	2 18	57 05	#80	4m	
65	comp			↑		
66	021849p571251	2 18	57 12	#80	2m	
67	comp			↑		
68	021849p570808	2 18	57 08	#80	3m	bright star to west
69	comp			↑		two stars to east
70	021849p570548	2 18	57 05	#80	1m	
71	comp			↑		
72	021849p570715	2 18	57 07	#80	30s	
73	comp			↑		
74	021849p570717	2 18	57 07	#80	30s	
75	comp			↑		
76	021849p570815	2 18	57 08	#80	10m	bright star to the east
77	comp			↑		
78	021849p570529	2 18	57 05	#80	30s	
79	comp					

60 inch Telescope Log

Observer: CALYANS

PI: Kenyon

Spectrograph: FAST

Grating: 300L

Page: 6764

Date: 01/09/99

Number	Object	R. A.	Dec.	L/R	Exp	Comments
80	021850p570723	2 18	57 07	"80	15m	PA = 110°
81	comp			↑		↑ (two stars east, 2 stars west)
82	021850p570826	2 18	57 08	"80	30s	star east
83	comp			↑		
84	021850p570831	2 18	57 08	"80	30s	dim star to the west
85	comp			↑		
86	021851p571253	2 18	57 13	"80	60s	PA = 110°
87	comp			↑		
88	021851p570941	2 18	57 09	"80	30s	PA = 90° !!
89	comp			↑		
90	021852p571008	2 18	57 10	"80	8m	
91	comp			↑		
92	021852p570949	2 18	57 09	"80	5m	
93	comp			↑		
94	021852p571312	2 18	57 13	"80	5m	PA = 110°
95	comp			↑		
96	021852p570830	2 18	57 08	"80	4m	PA = 80°
97	comp			↑		
98	021852p570641	2 18	57 06	"80	3m	
99	comp			↑		
100	021853p570820	2 18	57 08	"80	3m	
101	comp			↑		
102	021853p570618	2 18	57 06	"80	3m	
103	comp			↑		
104	021854p570738	2 18	57 07	"80	4m	
105	comp			↑		
106	021854p571219	2 18	57 12	"80	1m	
107	comp			↑		
108	021854p570927	2 18	57 09	"80	1m	
109	comp			↑		

60 inch Telescope Log

Spectrograph: FAST

Observer: Calkins Geller,
 PI: Kenyon, All McLintock, Garcia,

Grating: 300L

Page: 6865

Date: 1/9/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
110	021854p570937	2 18	57 09	#80	2m	
111	comp			↑		
112	021855p570956	2 18	57 09	#80	8m	central star in spectrum
113	comp			↑		
114	021855p570812	2 18	57 08	#80	3.5m	bright star east
115	comp			↑		
116	Akn 120	5 16	-00 09	#6	4m	PA = 3.0°
117	comp			↑		
118	comp			↓		
119,120	A0535p26	5 58	26 18	#104	30s	
121	comp			↑		
122,123	HD39478	5 53	26 25	#104	10s	
124	comp			↑		
125-127	CI Gem	4 19	55 59	#107	210,90	
128	comp			↑		
129	8GGem	6 03	27 41	#100	6m	star west
130	comp			↑		
131	050548p0650	5 05	6 50	#64	20m	very faint/star to the east
132	comp			↑		
133	050815p0741	5 08	7 42	#64	20m	
134	comp			↑		
135	051800p0457	5 18	4 56	#64	20m	faint
136	comp			↑		
137	051857p0533	5 18	5 33	#64	20m	
138	comp			↑		
139	052643p0809	5 26	8 09	#64	20m	PA = 110°!! (forgot to comment)
140	comp			↑		
141	052719p0828	5 27	8 28	#64	20m	PA = 110°
142	comp			↑		
143	052759p0651	5 28	6 51	#64	20m	PA = 110° - last one!!

60 inch Telescope Log

Observer: Calkins

PI: Geller, Rines, All

Spectrograph: FAST

Grating: 3006

Page: 6866

Date: 1/9/99

Number	Object	R. A.	Dec.	L/R	Exp	Comments
144	comp			↑		
145	mrqs 027.060	9 15	17 46	#59	20m	PA = 90°
146	comp			↑		
147	027.062	9 15	17 55	#59	15m	
148	comp			↑		
149	027.068	9 16	17 36	#59	17m	
150	comp			↑		
151	027.071	9 16	17 50	#59	6m	
152	comp			↑		
153	027.072	9 16	17 48	#59	6 m	
154	comp			↑		
155	027.073	9 16	17 52	#59	17m	
156	comp			↑		
157	027.074	9 16	17 08	#59	12m	
158	comp			↑		
159	027.077	9 16	16 53	#59	15m	gal to the west binby 2
160	comp			↑		
161	027.078	9 16	17 56	#59	15m	
162	comp			↑		
163	027.083	9 17	17 50	#59	12m	
164	comp			↑		
165	027.086	9 17	16 43	#59	12m	
166	comp			↑		
167	027.088	9 17	17 55	#59	17m	
168	comp			↑		
169	027.090	9 17	17 02	#59	20m	
170	comp			↑		
171	MRK 421	11 04	38 11	#6	4m	PA = 60°, object to "east"
172	comp			↑		
173	N4051	12 03	44 52	#6	2m	PA = 0.0°

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>6867</u>	
Observer: <u>Calkins</u>			Grating: <u>300L</u>		Date: <u>1/9/99</u>	
PI: <u>All, Huchra</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
174	comp			↑		
175	N4157	12 10	59 23	F6	45s	PA = 10°
176	comp			↑		
177	N4258	12 18	47 18	F6	2m	PA = 10°
178	comp			↑		
179	M12 279	13 52	69 17	F6	3m	PA = 30°
180	comp			↑		
181	SBS1425p606	14 26	60 24	F6	12m	PA = 50°, clouds
182	comp			↑		
183	N5548	14 17	25 07	F6	5m	PA = 69°
184	comp			↑		
185	ZM135045	13 50	23 05	F68	15m	clouds
186	comp			↑		
187	ZM134608	13 46	18 00	F68	8m	
188	comp			↑		
189	N3379	10 47	12 34	F57	70s	
190	comp			↑		
191, 192	Feige 34	10 39	43 06	F56	90s	
193	comp			↑		
194-198	sky			F57	5s	
199	comp			↑		
200-209	BIAS				0s	
210-219	FLAT				6s	
220-229	BIAS				0s	
230-239	FLAT				12s	
240-249	DARK				15m	

60 inch Telescope Log
 Observer: CALLANS
 PI: All, Kenyon
 Spectrograph: FAST
 Grating: 300L
 Date: 01/10/99
 Page: 6868

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BTAS				0s	
21-30	FLAT				4s	
31-40	BTAS				0s	overcast @ sunset
41-50	FLAT				12s	
51	MRK 335	00 06	20 12	#6	3m	hole?
52	comp			↑		
53	Feige 25	2 38	5 28	#56	2.5m	
54	comp			↑		
55	M 31	00 42	41 16	#57	1m	
56	comp			↑		
57	021857p571018	02 18	57 10	#80	3m	thru clouds
58	comp			↑		
59	021857p570818	2 18	57 08	#80	90s	
60	comp			↑		
61	021857p571018	2 18	57 10	#80	90s	
62	comp			↑		
63	021858p570517	2 18	57 05	#80	2m	
64	comp			↑		
65	021858p570518	2 18	57 05	#80	3m	
66	comp			↑		
67	021857p570844	2 18	57 08	#80	10s	
68	comp			↑		
69	021858p570810	2 18	57 08	#80	10s	central star
70	comp			↑		
71	021900p570605	2 19	57 06	#80	5m	
72	comp			↑		
73	021900p570616	2 19	57 06	#80	5m	bright star to the east
74	comp			↑		
75	021900p570705	2 19	57 07	#80	2m	clouds increasing

60 inch Telescope Log
 Observer: CALKINS
 PI: Kerjan, Koranyi, Huchra
 Spectrograph: FAST
 Grating: 3006
 Date: 01/10/99
 Page: 6869

Number	Object	R.A.	Dec.	L/R	Exp	Comments
76	comp			↑		overrun by clouds !!
77	021900p570820	2 19	57 08	#80	3m	hole, bright star to the west
78	comp			↑		
79	021900p570840	2 18	57 08	#80	3m	thru clouds
80	comp			↑		
81	021900p570902	2 19	57 08	#80	3.5m	star east
82	comp			↑		
83	021901p571042	2 19	57 10	#80	4m	star east
84	comp			↑		
85	021901p570520	2 19	57 05	#80	7m	bright star east
86	comp			↑		
87	021902p570935	2 19	57 09	#80	12m	foreground star??
88	comp			↑		
89	021902p570737	2 19	57 07	#80	15m	3 stars east, 2 stars west
90	comp			↑		
91	021902p570521	2 19	57 05	#80	3m	star west
92	comp			↑		
93	021903p570832	2 19	57 08	#80	8m	star east
94	comp			↑		
95	021904p570838	2 19	57 08	#80	10m	bright star west
96	comp			↑		
97	021904p570917	2 19	57 09	#80	3m	central spectra
98	comp			↑		
99	021904p570850	2 19	57 09	#80	4m	thru clouds, bright star to the east
100	comp			↑		
101	awml057	9 17	19 53	#35	20m	PA=60°, clouds
102	comp			↑		
103	2M113948	11 39	14 14	#68	2m	-stellar? <u>IMAGE CLEARLY STELLAR</u>
104	comp			↑		
105	2M114258	11 42	16 29	#68	3m	

101 superposed star? (stellar spectrum only)

60 inch Telescope Log

Observer: Calkins

PI: Hutchra

Spectrograph: FAST

Grating: 300L

Page: 6870

Date: 1/10/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
106	comp			↑		
107	2M113025	11 30	22 13	⊕68	3m	
108	comp			↑		
109	2M115950	11 59	14 11	⊕68	3m	
110	comp			↑		
111	2M113039	11 30	18 27	⊕68	5m	
112	comp			↑		
113	2M114517	11 45	21 25	⊕68	3m	
114	comp			↑		
115	2M114358	11 43	20 40	⊕68	3.5m	
116	comp			↑		
117	2M114448	11 44	23 56	⊕68	4m	
118	comp			↑		
119	2M113706	11 37	11 52	⊕68	4m	
120	comp			↑		
121	2M114315	11 43	21 42	⊕68	4m	
122	comp			↑		
123	2M114417	11 44	21 34	⊕68	5m	
124	comp			↑		
125	2M115831	11 58	22 04	⊕68	5m	
126	comp			↑		
127	2M112549	11 25	14 39	⊕68	4m	
128	comp			↑		
129	2M114432	11 44	23 06	⊕68	3m	
130	comp			↑		
131	2M112333	11 33	14 44	⊕68	2m	
132	comp			↑		
133	2M114420	11 44	15 35	⊕68	3m	
134	comp			↑		
135	2M114522	11 45	18 39	⊕68	3m	

60 inch Telescope Log

Observer: CALKINS

PI: Huchra, Koranyi

Spectrograph: FIST

Grating: 200L

Page: 6871

Date: 1/10/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
136	comp			↑		
137	ZM114156	11 41	12 34	#68	3m	
138	comp			↑		
139	ZM114324	11 43	20 33	#68	3m	
140	comp			↑		
141	ZM114027	11 40	12 03	#68	4m	
142	comp			↑		
143	ZM114357	11 43	15 29	#68	5m	
144	comp			↑		
145	ZM115821	11 58	22 50	#68	5m	
146	comp			↑		
147	ZM114259	1. 43	13 04	#68	6m	object east
148	comp			↑		
149	ZM115642	11 56	21 14	#68	5m	
150	comp			↑		
151	ZM114911	1. 43	23 30	#68	2m	
152	comp			↑		
153	mlw2-045	12 25	-2 58	#35	4m	
154	comp			↑		
155	mlw2-047	10 25	-3 05	#35	6m	
156	comp			↑		
157	mlw2-049	10 29	-3 22	#35	20m	
158	comp			↑		
159	MRLK 279	13 52	69 18	#6	3m	
160	comp			↑		
161	N5548	14 17	25 07	#6	3.5m	
162	comp			↑		
163	H344	13 23	36 08	#56	3m	
164	comp			↑		
165	N3379	0 47	12 35	#57	90s	

60 inch Telescope Log		Spectrograph: <u>FAST</u>		Page: <u>6873</u>		
Observer: <u>CALKINS</u>		Grating: <u>300L</u>		Date: <u>1/11/99</u>		
PI: <u>All, Kenyon</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-5	DARK				15m	
6-15	BIAS				0s	
16-25	FLAT				6s	
26-35	FLAT				20s	1.1" slit
36-45	BIAS				0s	3" slit !!
46-55	FLAT				12s	3" slit !!
56-60	sky			#57	2s	
61	comp			↑		clouds @ sunset
62	PG 0205p134	2 08	13 36	#56	3m	
63	comp			↑		
64	M31	00 42	41 16	#57	1m	
65	comp			↑		
66	MRK 335	00 06	20 11	#6	10m	thru clouds, PA=57°
67	comp			↑		
68	021905p570257	2 18	57 07	#80	8m	thru clouds
69	comp			↑		
70	021905p570954	2 19	57 09	#80	8m	↓
71	comp			↑		
72	021905p571006	2 19	57 10	#80	8m	very bright object to the east
73	comp			↑		
74	021906p570851	2 19	57 08	#80	2m	
75	comp			↑		
76	021906p570923	2 19	57 09	#80	15m	PA = 84° - thru clouds (reds?) yes reds
77	comp			↑		wait out clouds
78-87	BIAS				0s	
88-97	FLAT				6s	
98-107	BIAS				0s	
108-117	FLAT				12s	
118-127	DARK				15m	

60 inch Telescope Log

Observer: P Berlin
 PI: All

Spectrograph: FAST
 Grating: 300L
 Date: 1/12/99

Page: 0074

Number	Object	R.A.	Dec.	L/R	Exp	Comments
H0	DARK				15m	
11-20	BDPS				0s	clear stars!
21-30	FLAT				6s	
31-40	BDPS				0s	windy
41-50	FLAT				12s	
51-55	sky	zenith		S7	2s	
56	comp			↑	5s	
57-59	HD 22066	23:31	+71:36	S7	4s	
60	comp			↑		
61-63	HD 218066	23:04	+69:03	S7	5s	
64	comp			↑		
65-67	HD 218997	23:11	+58:41	S7	6s	
68	comp			↑		
69-71	HD 218393	23:07	+50:11	S7	4s	
72	comp			↑		
73-75	HD 220310	23:22	+46:20	S7	4s	
76	comp			↑		
77-79	HD 224085	23:54	+61:50	S7	4s	
80	comp			↑		
81-83	HD 217066	27:54	+62:27	S6	3s	
84	comp			↑		
85-86	M32	00:25	+40:25	S7	20s	
87	comp			↑		
88	225m280	00:11	+41:05	S7	4m	
89	comp			↑		
90	MRK335	00:03	+19:55	6	3m	
91	comp			↑		
92	N7N69	23:03	+08:52	6	25m	
93	comp			↑		

60 inch Telescope Log

Observer: PB

PI: Kenny

Spectrograph: FAST

Grating: 300L

Page: 6875

Date: 1/12/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
94	Akn 564	21:42	+25:43	6	3m	
95	WMP			↑		
96-97	B0p25424	21:48	+28:37	56	40s	
98	WMP			↑		h+k per -crated fields
99	021907p5706	21:49	+57:06	83	4m	many stars in slit
100	WMP			↑		object always @ rows 75-80
101	021907p77063	02:19	+57:06	83	4m	SW+ unless noted
102	021906p57064	02:19	+57:06	83	6m	NE+
103	WMP			↑		
104	021907p5709	02:19	+57:09	83	30s	
105	021907p5710	02:19	+57:10	83	3m	
106	WMP			↑		
107	021909p570614	02:19	+57:06	83	30s	S
108	021909p570621	02:19	+57:06	83	7m	M
109	021909p570630	02:19	+57:06	83	45s	N
110	WMP			↑		
111	021911p570715	02:19	+57:07	83	1m	SW late +
112	021912p570726	02:19	+57:07	83	4m	M
113,115	021913p570741	02:19	+57:07	83	45s	NE x 2 (#113,115)
114	WMP			↑		
116-117	021913p57107	02:19	+57:10	83	0.5, 1s	superficial! p-c
118	021913p570915	02:19	+57:09	83	15m	faint - 3 stars we want.
119	WMP			↑		
120	021906p5709	02:19	+57:09	83	10m	
121	WMP			↑		
122	021914p5708	02:19	+57:08	83	15m	
123	WMP			↑		
124	021913p571106	02:19	+57:11	83	7m	NW+
125	021914p571101	02:19	+57:11	83	6m	SE+
126	WMP			↑		

→ file 118: 021913p570915, 021916p570911, 021914p570912
 (rows 77-79) (rows 103-105) (rows 88-91)
 (118) (121) (119)

60 inch Telescope Log		Spectrograph: <u>FAST</u>				
Observer: <u>PB</u>		Grating: <u>300L</u>		Page: <u>6876</u>		
PI: <u>Kemp</u>		Date: <u>1/12/99</u>				
Number	Object	R. A.	Dec.	L/R	Exp	Comments
127	021914p570929	02:19	+57:09	83	20m	PA=70 also in slit to E
128	WMP	to rows 75-78		↑		is 021915p570929 (rows 84-87)
129	021915p570929	02:19	+57:09	83	2m	
130	WMP			↑		seeing worse
131	021915p570929	02:19	+57:09	83	2m	
132	WMP			↑		
133	021915p570929	02:19	+57:11	83	3m	
134	WMP			↑		
135	021915p570936	02:19	+57:09	83	3m	
136	021916p570937	02:19	+57:08	83	3m	late
137	WMP			↑		
138	021916p570943	02:19	+57:05	83	7m	S*
139	021916p570954	02:19	+57:05	83	10m	N*
140	WMP			↑		
141	021916p571058	02:19	+57:10	83	15s	
142	WMP			↑		
143	021917p57107	02:19	+57:07	83	90s	
144	WMP			↑		
145	021917p570850	02:19	+57:08	83	3m	S*
146	021917p570857	02:19	+57:08	83	4m	N*
147	WMP	02:19	57:08	↑		
148	021918p570811	02:19	+57:08	83	15m	
149	WMP			↑		
150	021919p570820	02:19	+57:08	83	8m	
151	021920p570828	02:19	+57:09	83	16m	brighter * to E
152	WMP			↑		
153	021922p570827	02:19	+57:08	83	90s	
154	021925p570819	02:19	+57:08	83	90s	
155	WMP					

021915p570929 = file 128

60 inch Telescope Log
 Observer: PB
 PI: Kenyon

Spectrograph: FAST
 Grating: 300L
 Date: 1/12/99

Page: 6877

Number	Object	R.A.	Dec.	L/R	Exp	Comments
156-7	021926p570441	02:19	+57:04	83	20s, 5s	em pec!
158	COMP			↑		
159	021927p570508	02:19	+57:06	83	10s	
160	COMP			↑		
161	021928p570503	02:19	+57:07	83	20s	em
162	COMP			↑		
163	021927p571359	02:19	+57:13	83	2m	
164	COMP			↑		
165	021927p572591	02:19	+57:09	83	20s	SW * wk; late *
166	021928p570914	02:19	+57:09	83	2m	NE *
167	COMP			↑		
168	021928p570509	02:19	+57:09	83	8m	
169	021929p572514	02:19	+57:09	83	2m	
170	COMP			↑		
171	021929p572803	02:19	+57:06	83	6m	
172	COMP			↑		
173	021929p571123	02:19	+57:11	83	4s	em
174	COMP			↑		
175	G191028	05:01	+52:45	56	2m	
176	COMP			↑		
177-179	CI Cam	04:19	+55:59	107	2420, 900	
180	COMP			↑		
181	Platen	06:03	+27:41	103	8m	
182	COMP			↑		
183	Akna 10	05:13	+00:12	6	3m	
184	COMP			↑		
185-186	Hiltner 60	06:42	+02:11	56	1m	
187	COMP			↑		
188	NG 5027.03	04:19	+17:07	59	7m	
189	COMP			↑		

60 inch Telescope Log
 Observer: PB
 PI: And. (Din) Krishnaer
 Spectrograph: FAST
 Grating: 300L
 Date: 1/12/99
 Page: 6878

Number	Object	R.A.	Dec.	L/R	Exp	Comments
190	NGC 5027.091	09:17	+16:51	S9	8m	em
191	COMP			↑		
192	.092	09:17	+17:06	S9	12m	Seeing is better
193	COMP			↑		
194	.093	09:18	+16:48	S9	6m	
195	COMP			↑		
196	.095	09:18	+16:59	S9	8m	
197	COMP			↑		
198	.096	09:18	+17:22	S9	6m	
199	COMP			↑		
200	.097	09:18	+17:45	S9	15m	PA=80 LSB em - extended
201	COMP			↑		
202	.098	09:18	+17:33	S9	6m	
203	COMP			↑		
204	.099	09:18	+17:31	S9	11m	Cosmic ray on top of H α
205	COMP			↑		
206	.100	09:18	+17:22	S9	12m	
207	COMP			↑		
208	.101	09:18	+17:59	S9	12m	em
209	COMP			↑		
210	.102	09:19	+17:16	S9	9m	
211	COMP			↑		
212	MK102.019	10:21	-03:37	35	20m	PA=5 to avoid sup the redo from 12/26/98
213	COMP			↑		
214	.054	10:24	-03:15	35	7m	
215	COMP			↑		
216	.057	10:28	-03:16	35	4m	
217	COMP			↑		
218, 220, 221	SN1985	11:46	+47:28	2	20m	x3
219, 222, 223	COMP			↑		

204 cosmic on top of H α ; did not use emtemp for final velocity although it was highest.

60 inch Telescope Log
 Observer: PB
 PI: Ken
 Spectrograph: FAST
 Grating: 3000
 Date: 1/12/99
 Page: 6879

Number	Object	R.A.	Dec.	L/R	Exp	Comments
224	Faye 34	10:26	+43	SC	90s	
225	COMP			↑		
226	mkw2.010	10:24	-02:54	35	5m	
227	COMP			↑		
228	-041	10:27	-03:50	35	8m	Faint group strong em
229	COMP			↑		pec!
230	-043	10:26	-03:54	35	4m	
231	COMP			↑		
232	-048	10:26	-03:50	35	10m	
233	COMP			↑		
234	-050	10:27	-03:57	35	4m	
235	COMP			↑		W comp = star
236	-051	10:25	-03:30	35	6m	bmby 2 E+W comps
237	COMP			↑		em E comp! wk-k
238	-052	10:27	-03:51	35	6m	em; huge cosmic ray
239	COMP			↑		
240	-055	10:25	-03:40	35	12m	em
241	COMP			↑		
242	-056	10:26	-03:29	35	4m	
243	COMP			↑		
244	-057	10:24	-04:40	35	12m	
245	COMP			↑		
246	-058	10:25	-02:47	35	5m	wk
247	COMP			↑		
248	-61	10:29	-02:57	35	5m	
249	COMP			↑		seeing worse
250	-64	10:24	-02:59	35	6m	
251	COMP			↑		
252	-69	10:29	-02:52	35	5m	
253	COMP			↑		

228 very interesting merging galaxies - extremely strong 3727

60 inch Telescope Log
 Observer: PB
 PI: Huchra & Kishner
 Spectrograph: FAST
 Grating: 300L
 Date: 1/12/99
 Page: 6880

Number	Object	R. A.	Dec.	L/R	Exp	Comments
254	2M105814.1	10:58	+23:30	68	3m	
255	COMP			↑		
256	2M115003.8	11:50	+16:49	68	3m	
257	COMP			↑		
258	2M115728.7	11:57	+16:31	68	3m	
259	COMP			↑		
260	2M115936.3	11:59	+13:46	69	2m	
261	COMP			↑		
262	2M114825.6	11:48	+17:56	68	2m	
263	COMP			↑		
264-265	SN1999A	15:07	+54:45	2	5.2m	99A! faint 18.2
266	COMP			↑		PA-56
267	MRK279	13:51	+6:33	6	3m	
268	COMP			↑		
269	N5948	14:25	+25:22	6	3m	
270	COMP			↑		
271	H244	13:21	+76:23	56	2m	
272	COMP			↑		
273	N4151	12:04	+78:41	6	30s	
274	COMP			↑		
275	2M115058.9	11:50	+14:44	68	2m	
276	COMP			↑		
277	2M115033.7	11:50	+17:51	68	3m	
278	COMP			↑		
279-281	HD 97154	11:4	+12:49	57	4s	
282	COMP			↑		
283-285	HD 97111	11:4	+16:49	57	4s	
286	COMP			↑		
287-289	HD 107036	11:51	+04:45	57	4s	
290	COMP			↑		

60 inch Telescope Log			Spectrograph: <i>FAST</i>		Page: <i>6881</i>	
Observer: <i>PB</i>			Grating: <i>302</i>			
PI: <i>M11</i>			Date: <i>1/12/99</i>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
<i>291-293</i>	<i>HD 104777</i>	<i>13-27</i>	<i>-16-37</i>	<i>S7</i>	<i>4s</i>	
<i>294</i>	<i>OMP</i>			<i>T</i>		
<i>295-297</i>	<i>HD 115801</i>	<i>13-06</i>	<i>-10-03</i>	<i>S7</i>	<i>6s</i>	
<i>298</i>	<i>OMP</i>			<i>T</i>		<i>clear @ dawn</i>
<i>299-301</i>	<i>HD 116802</i>	<i>13-26</i>	<i>-03-11</i>	<i>S7</i>	<i>6s</i>	<i>~</i>
<i>302</i>	<i>OMP</i>			<i>T</i>		
<i>303-312</i>	<i>BIBB</i>			<i>0</i>	<i>6s</i>	
<i>313-322</i>	<i>FLAT</i>			<i>0</i>	<i>6s</i>	
<i>323-332</i>	<i>BIBB</i>			<i>0</i>	<i>0s</i>	
<i>333-342</i>	<i>FLAT</i>			<i>0</i>	<i>12s</i>	
<i>343-352</i>	<i>DARK</i>					

60 inch Telescope Log		Spectrograph: <u>FAST</u>			Page: <u>6882</u>	
Observer: <u>P Berlin</u>		Grating: <u>3002, 3" slit</u>				
PI: <u>All</u>		Date: <u>1/13/99</u>				
Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-10	DARK				15s	
11-20	BSPS				0s	
21-30	FLAT				6s	<i>circus</i>
31-40	BSPS				0s	
41-50	FLAT				12s	
51-55	sky	Zenith		57	2s	
56	COMP			↑	5s	
57-59	HD 144	00:06	+64:11	57	4s	
60	COMP			↑		
61-63	HD 225095	00:03	+56:33	57	6s	
64	COMP			↑		
65-67	HD 698	00:11	+58:12	57	4s	
68	COMP			↑		
69-71	HD 225095	00:03	+56:33	57	6s	
72	COMP			↑		
73-75	HD 236349	00:14	+56:15	57	4s	
76	COMP			↑		
77-79	HD 217086	22:54	+62:27	56	4s	
80	COMP			↑		
81-82	BD p28424	21:48	+28:37	56	40s	
83	COMP			↑		
84-5	M32	00:40	+10:35	57	30s	
86	COMP			↑		
87	MAR 335	00:03	+19:55	57	3m	
88	COMP			↑		
89	ISSm 213	00:43	+11:07	57	5m	
90	COMP			↑		
91-93	HD 12623	07:02	+62:56	57	4s	
94	COMP			↑		

chip gain calculation slightly low for this night (~ 7.8 + 1.1 rather than 8.6 + 1.2)

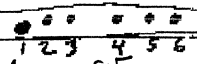
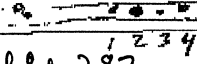
60 inch Telescope Log		Spectrograph: <u>FAST</u>		Page: <u>6883</u>		
Observer: <u>PB</u>		Grating: <u>300L</u>		Date: <u>1/13/99</u>		
PI: <u>Kenny</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
95	022142p570578	02:21	+57:05	83	70s	great seeing!
96	022143p570729	02:21	+57:07	83	15s	a few thin clouds
97	OMP			↓		
98	022143p570739	02:21	+57:07	83	8m	N + ϵ
99	022146p570735	02:21	+57:07	83	30s	
100	OMP			↑		attempt for SN98cy
101	022144p570852	02:21	+57:08	83	1m	too faint @ qmass=200
102	022144p571051	02:21	+57:10	83	30s	
103	OMP			↑		
104	022145p570459	02:21	+57:04	83	2m	
105	022144p570407	02:21	+57:04	83	3m	
106	022147p570786	02:21	+57:03	83	30s	
107	OMP			↑		
108	022148p570741	02:21	+57:04	83	1m	
109	022149p570503	02:21	+57:07	83	30s	
110	022149p570648	02:21	+57:06	83	8m	
111	OMP			↑		
112	022151p570130	02:21	+57:04	83	2m	SW +
113	022151p570137	02:21	+57:04	83	3m	NE + fainter + to W
114	OMP			↑		
115	022149p570816	02:21	+57:08	83	2m	
116	022151p570631	02:21	+57:06	83	8m	
117	OMP			↑		
118	022154p570655	02:21	+57:06	83	6m	NU +
119	022155p570555	02:21	+57:05	83	7m	SE +
120	OMP			↑		
121	022155p570555	02:21	+57:05	83	30s	
122	022157p570655	02:21	+57:07	83	10s	
123	022157p570722	02:21	+57:08	83	1m	
124	OMP			↑		

60 inch Telescope Log
 Observer: PB
 PI: Kensyon
 Spectrograph: FAST
 Grating: 300R
 Date: 1/13/99
 Page: 6884

Number	Object	R.A.	Dec.	L/R	Exp	Comments
125	022157p570539	02:21	+57:05	83	90s	
126	022157p57054	02:21	+57:07	83	90s	
127	022158p5706	02:21	+57:0	83	8m	
128	COMP			↑		
129	022159p570657	rows: 81-83		83	20m	PA = -44 3 stars
130	COMP (022158p570710) (022200p570648)	rows: 93-95 rows: 68-70		↑		
131	022200p570710	02:22	+57:07	83	15m	PA = 44
132	COMP			↑		
133	022159p570706	02:21	+57:07	83	15m	PA = +48 2 stars
134		→ rows 84-86		↑		022200p570710 → rows 90-92
135	022200p570731	02:22	+57:07	83	45s	
136	022200p570812	02:22	+57:08	83	10s	
137	COMP			↓		
138	022200p570811	02:22	+57:08	83	4s	
139	022202p570822	02:22	+57:08	83	30s	
140	022202p570802	02:22	+57:08	83	90s	
141	COMP			↑		
142	022200p5707	02:22	+57:07	83	6m	
143	COMP			↑		
144	022202p570917	02:22	+57:09	83	60s	
145	022202p570850	02:22	+57:08	83	3m	
146	022203p570705	02:22	+57:07	83	6m	
147	COMP			↑		
148	021921p5645	02:19:21.9	+56:45:36.9	68	12m	
149	COMP			↑		

0128 022200p570648
 0129 022159p570657
 0130 022158p570710
 0134 022200p570710
 0133 022159p570706

60 inch Telescope Log
 Observer: PB
 PI: Kenyon
 Spectrograph: FAST
 Grating: 300L
 Date: 1/13/99
 Page: 6885

Number	Object	R.A.	Dec.	L/R	Exp	Comments
150	022203 p570844	02:22	+57:08	83	6m	
151	022203 p570909	02:22	+57:09	83	45s	
152	COMP			↓		
153	022204 p570886	02:22	+57:08	83	5m	
154	022204 p571086	02:22	+57:10	83	50s	
155	COMP			↑		
156	022205 p571015	02:22	+57:07	83	5m	
157	022206 p570823	02:22	+57:05	83	5s	Be pec.
158	COMP			↑		
159	6 stars	02:22	+57:05	83	20m	PA=1 6 stars in slit!! 
160	NO COMP			↑		
161	022211 p570633	rows: 105-108				file 285
162	022211 p570622	rows: 97-99				file 284
163	(201) 022210 p570611	rows: 87-89				file 283
164	(199) 022212 p570600	rows: 74-75				file 282
165	(196) 022210 p570544	rows: 64-65				file 160
166	(195) 022211 p570531	rows: 54-55				file 159
167	4 stars			83	20m	PA=2 4 stars in slit! 
168	COMP			↑		
169	(200) 022209 p570666	rows: 94-95				file 287
170	(198) 022209 p570557	rows: 85-87				file 286
171	(197) 022209 p570545	rows: 76-77	Ext. redo			file 162
172	(194) 022209 p570535	rows: 67-68				file 161
173	163/166 022208 p570726	02:20	+57:07	83	4s	157 N XL
174	164 022209 p570658	02:20	+57:06	83	4s	154 M
175	165 022207 p570639	02:20	+57:06	83	4s	153 S
176	167 COMP			↑		

85 1
 283 3
 282 4
 160 5
 159 6
 287 1
 286 2
 162 3
 161 4

60 inch Telescope Log		Spectrograph: <u>FAST</u>		Page: <u>6886</u>		
Observer: <u>PB</u>		Grating: <u>300R</u>		Date: <u>1/12/99</u>		
PI: <u>Huchra</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
168	APM080705755	08:31	+52.45	G	11m	
169	COMP			T		
170	ZM081920.6	08:19	+70.16	G8	4m	
171	COMP			T		
172	ZM081756.8	08:17	+19.09	G8	4m	
173	COMP			T		
174	ZM082707.8	08:27	+17.58	G8	3m	
175	COMP			T		
176	ZM082726.3	08:27	+27.77	G8	3m	
177	COMP			T		
178	ZM082058.6	08:20	+21.15	G8	3m	
179	COMP			T		
180	ZM082556.1	08:25	+17.51	G8	4m	
181	COMP			T		
182-4	CICan	04:19	+55.59	167	2, 20, 90	
183	COMP			T		
186	ZM070759.1	07:07	+24.52	G8	2m	to W * to E NOT W
187	COMP			T		
188	ZM070137.4	07:01	+27.09	G8	6m	* to E; bin by 2
189	COMP			T		(out of slit)
190	ZM080215.8	08:02	+18.24	G8	4m	
191	COMP			T		
192	ZM081242.7	08:12	+16.57	G8	15m	
193	COMP			T		
194	ZM082718.6	08:23	+10.14	G8	3m	bin by 2; septa ★
195	COMP			T		
196	ZM083004.1	08:30	+12.57	G8	5m	
197	COMP			T		
198	ZM082641.1	08:26	+17.80	G8	12m	
199	COMP			T		

194 cannot separate well from star - ~~dark~~ not ~~good~~ cz?

60 inch Telescope Log

Observer: PB

PI: Huchra

Spectrograph: FASJ

Grating: 300R

Date: 1/13/99

Page: 6887

Number	Object	R.A.	Dec.	L/R	Exp	Comments
200	ZM083642.8	08:36	+12:05	68	5m	bin by 2 2 champs
201	COMP			↑		
202	ZM082206.8	08:22	+15:35	68	7m	
203	COMP			↑		
204	ZM082642.3	08:26	+12:01	68	4m	
205	COMP			↑		
206	ZM080358.7	08:03	+15:21	68	4m	
207	COMP			↑		
208	ZM080955.1	08:09	+19:45	68	5m	
209	COMP			↑		
210	ZM080712.2	08:07	+14:39	68	6m	to 6E
211	COMP			↑		
212	ZM083451.1	08:34	+14:36	68	5m	
213	COMP			↑		
214	ZM082017.9	08:20	+17:45	68	7m	
215	COMP			↑		
216	ZM085116.2	08:51	+08:27	68	5m	clouds.
217	COMP			↑		lots of thin
218	Mkn 2059	10:30	-03:10	35	6m	
219	COMP			↑		
220	-060	10:27	-03:10	35	15m	
221	COMP			↑		
222	-068	10:26	-02:48	35	15m	
223	COMP			↑		
224	-062	10:25	-03:44	35	7m	
225	COMP			↑		
226	-063	10:29	-04:06	35	11m	
227	COMP			↑		
228	-064	10:28	-03:23	35	15m	
229	COMP			↑		

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>6868</u>	
Observer: <u>PB</u>			Grating: <u>3000</u>			
PI: <u>Dan Gluchra</u>			Date: <u>1/13/99</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
230	mkw2-071	10:24	-02:48	35	15m	seeing much worse ↓
231	OMP			T		
232	-072	10:27	-02:40	35	15m	
233	OMP			T		
234	-074	10:26	-02:40	35	15m	
235	OMP			T		
236	ZM114952.6	11:49	+12:11	68	5m	
237	OMP			T		
238	ZM115656.3	11:56	+13:41	68	5m	
239	OMP			T		
240	ZM114749.7	11:47	+12:06	68	5m	
241	OMP			T		
242	ZM115253.1	11:52	+14:11	68	5m	
243	OMP			T		
244	ZM115721.7	11:50	+12:57	60	6m	
245	OMP			T		
246	ZM114717.7	11:47	+12:40	68	5m	
247	OMP			T		
248	ZM114708.0	11:47	+16:19	68	5m	
249	OMP			T		
250	ZM115923.0	11:54	+13:17	68	4m	
251	OMP			T		
252	ZM115056.9	11:50	+15:31	66	12m	
253	OMP			T		
254	ZM114958.0	11:49	+20:57	68	4m	
255	OMP			T		
256	ZM123933.5	12:39	+12:30	66	5m	
257	OMP			T		
258	ZM123935.9	12:39	+15:02	68	5m	
259	OMP			T		

60 inch Telescope Log

Observer: PB

PI: Huchra

Spectrograph: FAST

Grating: 3000

Date: 1/13/99

Page: 6889

Number	Object	R.A.	Dec.	L/R	Exp	Comments
260	ZM124124.5	17:41	+12:10	68	5m	continued poor seeing
261	WMP			T		
262	ZM1241613.6	17:46	+12:10	68	6m	
263	WMP			T		
264	ZM125652.0	17:56	+12:21	68	5m	
265	WMP			T		windy
266	ZM123921.8	17:39	+17:11	68	7m	
267	WMP			T		
268	ZM124920	17:49	+17:14	68	7m	
269	WMP			T		
270	ZM125219.5	17:52	+13:21	68	6m	to to W
271	WMP			T		
272	ZM121121.1	17:11	+14:11	68	6m	
273	WMP			T		
274	MRK421	11:01	+78:28	6	4m	
275	WMP			T		
276	MRK079	15:51	+69:33	6	3m	
277	WMP			T		
278	NG548	14:15	+25:22	6	3m	
279	WMP			T		windy!
280-281	H244	15:26	+36	56	21m	
282	WMP			T		
283-287	UBAS				03	clear & dawn
288-292	FLAT				65	
303-312	UBAS				03	
313-322	FLAT				125	
323-332	DARK				20m	
332						

60 inch Telescope Log
 Observer: P. Berlin
 FI: Al
 Spectrograph: F151
 Grating: 3000, 30514
 Date: 1/14/99
 Page: 6890

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0s	
11-20	FLAT				12s	mostly clear
21-30	BINS				0s	
31-40	FLAT				6s	clouds to far W
41-45	sky	zenith		57	2s	
46	WMP			↑		
47-49	HD 207063	21.19	+41.08	57	4s	
50	WMP			↑		
51-53	HD 207232	21.46	+59.40	57	5s	
54	WMP			↑		
55-57	HD 207729	21.46	+52.07	57	5s	
58	WMP			↑		
59-61	HD 207338	21.47	+58.42	57	5s	
62	WMP			↑		
63-65	HD 208392	21.53	+67.56	57	5s	
66-68	HD 208440	21.53	+67.56	57	5s	
69	WMP			↑		
70-72	HD 208682	21.55	+15.19	57	2s	
73	WMP			↑		
74-76	HD 217046	22.40	+62	57	5s	
77	WMP			↑		
78-79	M32	00.37	+10.35	57	30s	
80	WMP			↑		
81	M33	00.03	+12.55	6	3m	
82	WMP			↑		
83	Faye 110	23.19	+05.09	56	2m	
84	WMP			↑		
85	M74	23.03	+08.52	6	2m	
86	WMP			↑		

60 inch Telescope Log
 Observer: RB
 PI: Kenyon

Spectrograph: FAST
 Grating: 300L
 Date: 1/14/99

Page: 6891

Number	Object	R.A.	Dec.	L/R	Exp	Comments
87	AKn564	2240	+2427	6	5m	
88	WMP			T		seems not that great
89-91	HD 12623	0202	16256	59	4s	~2"
92	WMP			T		
93	022209p570505	0202	+5708	83	4m	158
94	022210p570657	0202	+5706	83	4m	156
95	WMP			T		
96	022206p570513	0202	+5705	83	20s	152 (also obs 1/17)
97	022214p570611	0202	+5706	83	4m	20s
98	WMP			J		
99	022212p570650	0202	+5706	83	2m	
100	022212p570656	0202	+5706	83	3m	
101	WMP			T		
102	022211p570449	0202	+5704	83	4m	"
103	022210p570723	0202	+5707	83		
104	WMP			T		
105	022218p570241	0202	+5702	83	90s	156
106	022212p570348	0202	+5703	83	2m	159
107	WMP			T		
108	022219p571132	0202	+5714	83	35s	5x
109	022218p571145	0202	+5711	83	45s	N*
110	022220p571050	0202	+5710	83	30s	
111	WMP			T		
112	022215p570655	0202	+5705	83	15m	PA=77 2 stars!
113	WMP			T		022209p570535 @ rows: 4142 (code from 1113 etc)
114	022221p570629	0202	+5706	83	5s	M III
115	022205p570647	0202	+5706	83	6m	
116	WMP			T		

60 inch Telescope Log
 Observer: PB
 PI: Kenyon Grimes
 Spectrograph: FAST
 Grating: 300L
 Date: 1/14/95
 Page: 6892

Number	Object	R.A.	Dec.	L/R	Exp	Comments
117	022226p570904	02-22	+57-09	83	90s	143
118	022229p570908	02-22	+57-09	83	90s	144
119	OMP			↑		
120	022227p570917	02-22	+57-03	83	60s	135 N*
121	022229p570257	02-22	+57-02	83	2m	134 M
122	022233p570729	02-22	+57-02	83	90s	133 SA
123	OMP			↑	↑	
124	022231p570331	02-22	+57-03	83	2m	SEA
125	022230p570349	02-22	+57-03	83	2m	NWA
126	OMP			↑		Seeing much worse 3"
127	022232p5708	02-22	+57-08	83	2m	
128	022234p570647	02-22	+57-06	83	7m	
129	OMP			↑		
130	022235p570452	02-22	+57-04	83	30s	
131	OMP			↑		
132-134	CTCam	04-19	+55-59	107	3, 25, 120s	
135				↑		
136	a576-002	07-29	+57-07	69	5m	
137	OMP			↑		
138	a576-004	07-04	+54-13	69	5m	
139	OMP			↑		
140	066	07-06	+54-05	69	5m	
141	OMP			↑		
142	068	06-56	+55-24	69	11m	
143	OMP			↑		
144	019	07-01	+56-29	69	6m	
145	OMP			↑		Seeing better!
146	021	07-03	+57-45	69	4m	
147	OMP			↑		

60 inch Telescope Log

Observer: PB

PI: Rings

Spectrograph: FAST

Grating: 3002

Date: 1/14/99

Page: 6893

Number	Object	R. A.	Dec.	L/R	Exp	Comments
148	a 576-003	07:24	+55:57	64	3m	
149	COMP			f		
150	005	07:22	+56:29	64	5m	
151	COMP			f		
152	007	07:25	+53:26	64	4m	
153	COMP			f		
154	009	07:03	+54:37	64	4m	
155	COMP			f		
156	011	07:23	+57:16	64	5m	em
157	COMP			f		
158	010	07:39	+54:19	64	8m	
159	COMP			f		
160	012	07:46	+56:59	64	6m	
161	COMP			f		
162	001	07:46	+55:25	64	2m	
163	COMP			f		
164	013	07:27	+52:26	64	4m	
165	COMP			f		
166	014	07:29	+59:04	64	5m	
167	COMP			f		
168	015	07:30	+51:26	64	3m	
169	COMP			f		
170	016	07:39	+55:53	64	4m	
171	COMP			f		
172	017	07:30	+55:52	64	6m	bmbg 2 faint comp + E
173	COMP			f		
174	018	07:19	+55:02	64	4m	
175	COMP			f		
176	023	07:09	+58:46	64	8m	
177	COMP			f		

60 inch Telescope Log
 Observer: PB
 PI: Rncs
 Spectrograph: FAST
 Grating: 300
 Date: 1/14/99
 Page: 6894

Number	Object	R. A.	Dec.	L/R	Exp	Comments
178	a576-020	07:30	+57:42	64	5m	Seeing 2-3"
179	WMP			f		
180	022	07:28	+55:46	64	4m	
181	WMP			f		
182	024	07:26	+55:49	64	4m	+ to W
183	WMP			f		
184	025EW	07:29	+55:32	64	7m	bin by E+W comp
185	WMP			f		
186	026	07:33	+55:02	64	12m	
187	WMP			f		
188	027	07:18	+52:21	64	15m	+ to W; LSB HA @ PR2000
189	WMP			f		
190	028	07:15	+55:25	64	4m	
191	WMP			f		
192	029	07:14	+56:02	64	5m	bin by 2; faint comp to W
193	WMP			f		(#?)
194	030	06:57	+54:17	64	4m	
195	WMP			f		
196	032	07:03	+53:40	64	4m	
197	WMP			f		
198	039	07:09	+54:58	64	5m	
199	WMP			f		
200	031	07:27	+56:59	64	4m	
201	WMP			f		
202	033	07:24	+57:34	64	3m	gal in slit to far E
203	WMP			f		
204	034	07:25	+57:24	64	4m	
205	WMP			f		
206	035	07:34	+57:54	64	5m	
207	WMP			f		

60 inch Telescope Log
 Observer: PB
 PI: Rmes
 Spectrograph: FAST
 Grating: 300L
 Date: 1/14/99
 Page: 6895

Number	Object	R. A.	Dec.	L/R	Exp	Comments
208	9576-036	07:30	+58:51	64	7m	seems a little better
209	WMP			↑		but still 2"
210	045	07:04	+54:60	64	4m	
211	WMP			↑		
212	042	07:05	+54:52	64	4m	
213	WMP			↑		
214	040	07:03	+56:29	64	15m	en
215	WMP			↑		
216	039	07:28	+57:44	64	10m	
217	WMP			↑		
218	038	07:34	+54:44	64	4m	
219	WMP			↑		
220	041	07:21	+54:49	64	4m	to E
221	WMP			↑		
222	043	07:22	+53:57	64	4m	
223	WMP			↑		
224	044	07:12	+55:56	64	5m	
225	WMP			↑		look for SN98fa ^{too faint}
226	047	07:14	+54:59	64	5m	seems still ~2"
227	WMP			↑		
228	048	07:21	+58:09	64	10m	
229	WMP			↑		
230	046	07:24	+57:21	64	4m	
231	WMP			↑		
232	049	07:27	+53:04	64	4m	
233	WMP			↑		
234	050	07:39	+57:19	64	6m	
235	WMP			↑		
236	054	07:32	+59:20	64	5m	
237	WMP			↑		

60 inch Telescope Log

Observer: PBPI: Ramesh Dan G. MehraSpectrograph: FASTGrating: 300RPage: 6896Date: 1/14/89

Number	Object	R. A.	Dec.	L/R	Exp	Comments
238	Q576_053	06:59:38	+54:47	64	2m	Sep 1 - nec
239	COMP			↑		
240	052	07:07	+54:16	64	3m	
241	COMP			↑		
242	051	07:43	+54:48	64	4m	
243	COMP			↑		
244	Mkw2_069	10:24	-07:28	35	12m	
245	COMP			↑		
246	066	10:21	-07:52	35	15m	em
249	COMP			↑		
248	070	10:30	-07:16	35	10m	
249	COMP			↑		
250	073	10:23	-07:08	35	11m	
251	COMP			↑		
252	075	10:27	-07:46	35	10m	fant gal to W
253	COMP			↑		
254.5	Fefe 34	10:36	+43:21	56	90s	nice
256	COMP			↑		
257	ZM0940596	08:50	+22:57	68	4m	
258	COMP			↑		
259	ZM0944742	09:49	+21:40	68	3m	
260	COMP			↑		
261	ZM0927102	09:27	+21:35	68	3m	* to E
262	COMP			↑		
263	ZM0967405	09:36	+22:20	68	3m	South camp
264	ZM096740N	09:36	+22:20	68	3m	North
265	COMP			↑		
266	ZM0943229	09:43	+22:49	68	3m	
267	COMP			↑		

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>6897</u>	
Observer: <u>PD</u>			Grating: <u>300L</u>			
PI: <u>Huchra & Krushner</u>			Date: <u>1/14/99</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
208	ZM092826.6	09:28	+21:21	68	3m	
209	COMP			f		
210	ZM092725.0	09:29	+21:01	68	3m	
211	COMP			f		
212	ZM092711.4	09:27	+21:02	68	4m	
213	COMP			f		
214	ZM091426.7	09:42	+21:39	68	5m	
215	COMP			f		
216	ZM09254.6	09:26	+21:13	68	3m	
217	COMP			f		
218	ZM091712.0	09:17	+21:58	68	3m	
219	COMP			f		
220	ZM094340.5	09:43	+22:47	68	4m	
221	COMP			f		
222	ZM094522.8	09:45	+21:53	68	4m	
223	COMP			f		
224	ZM094627.6	09:46	+21:29	68	4m	
225	COMP			f		
226	ZM093157.3	09:31	+18:09	68	5m	
227	COMP			f		
228	ZM092752.5	09:27	+21:31	68	6m	
229	COMP			f		
230	ZM125424.9	12:54	+17:46	68	5m	
231	COMP			f		
232	ZM123938.8	12:39	+17:25	68	4m	bin by 2; ← to E out of slit
233	COMP			f		
234	ZM125526.2	12:55	+16:20	69	4m	
235	COMP			f		
236, 238	SNR99A	15:07	+75:45	2	20m	PA:60 ±2
237, 239	COMP			f		

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>6898</u>
Observer: <u>PB</u>		Grating: <u>302</u>		Date: <u>1/14/95</u>		
PI: <u>Huchra</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
300-1	HZ44	13:21	+36:23	S6	2m	
302	COMP			T		
303	N5548	14:15	+25:22	6	3m	
304	COMP			T		
305	MRK 279	13:51	+69:33	6	3m	
306	COMP			T		
307	N4051	12:00	+44:48	6	2m	
308	COMP			T		
309	N4151	12:06	+59:41	6	30s	clear & dawn
310	COMP			T		
311-320	BLAS				0s	
321-330	FLAT				1s	
331-340	BLAS				0s	
341-350	FLAT				6s	
351-360	DARK				20m	
360						

60 inch Telescope Log
 Observer: CALKINS
 PI: All, Kirshner, Kenyon
 Spectrograph: FAST
 Grating: 300L
 Date: 1/15/99
 Page: 6899

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-5	DARK				15m	
6-15	B.E.A.S				0s	
16-25	FLAT				6s	
26-35	B.E.A.S				0s	
36-45	FLAT				13s	
46	PGC05 _{p134}	2 08	13 36	#56	3m	
47	comp			↑		
48	M31	00 42	41 16	#57	1m	
49	comp			↑		
50	MRK335	00 06	20 11	#6	4m	PA=60°
51	comp			↑		
52	sn1998es	01 27	05 52	#2	17m	PA=11°, Gal west
53	comp			↑		(clouds invaded last
54	02238 _{p57045}	2 22	57 04	#83	5m	3 m.s.)
55	comp			↑		
56	57047 * 57046	2 22	57 04	#83	8m	02238 _{p57046} is west
57	comp	02:22:19	57 09 ⁴⁹	↑		of 02237 _{p57047} (star to east) wait out clouds
58	a576-056	7 04	54 09	#64	15m	
59	comp			↑		
60	a576-055	7 07	56 18	#64	10m	PA=69°
61	comp			↑		
62	a576-057	7 14	55 09	#64	8m	
63	comp			↑		
64	a576-058	7 11	56 08	#64	3m	
65	comp			↑		
66	a576-059	7 18	59 03	#64	3.5m	
67	comp			↑		

how can 02238 be west of 02237 ?

02238 East
 02237 west

60 inch Telescope Log

Observer: Calkins

PI: Garcia, Kenyon, Finck

Spectrograph: FAST

Grating: 300L

Date: 1/15/99

Page: 6900

Number	Object	R.A.	Dec.	L/R	Exp	Comments
68-70	CICam	4 19	55 59	²⁰ 107	2,2090	
71	comp			↑		
72	RSGem	6 03	27 41	¹⁵ 100	6m	
73	comp			↑		
74	a576-060	7 35	56 02	¹⁵ 64	4m	
75	comp			↑		
76	a576-061	7 19	52 52	¹⁵ 64	8m	
77	comp			↑		
78	a576-062	7 46	57 05	¹⁵ 64	8m	
79	comp			↑		
80	a576-063	7 28	56 11	¹⁵ 64	12m	PA = 105°
81	comp			↑		
82	a576-064	7 29	53 02	¹⁵ 64	5m	
83	comp			↑		
84	a576-065	7 26	53 10	¹⁵ 64	5m	PA = 105°
85	comp			↑		
86	a576-066	7 17	59 10	¹⁵ 64	20m	
87	comp			↑		
88	a576-067	7 14	54 55	¹⁵ 64	17m	
89	comp			↑		
90	a576-068	7 34	58 42	¹⁵ 64	7m	
91	comp			↑		
92	a576-069	7 24	54 34	¹⁵ 64	7m	
93	comp			↑		
94	a576-070	7 43	54 58	¹⁵ 64	3m	
95	comp			↑		
96	a576-071	7 20	58 12	¹⁵ 64	10m	object east
97	comp			↑		
98	a576-072	7 34	55 48	¹⁵ 64	5m	
99	comp			↑		

60 inch Telescope Log

Spectrograph: FAST

Observer: Callina

Grating: 300L

Page: 6901

PI: Rines, Kirshner, Tustin

Date: 1/15/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
100	9576-073	7 20	59 22	#64	20m	
101	comp			↑		
102	9576-074	7 36	53 11	#64	3m	
103	comp			↑		
104	9576-075	6 53	56 15	#64	5m	star west
105	comp			↑		
106	9576-076	7 41	54 25	#64	4m	
107	comp			↑		
108	9576-077	7 41	54 54	#64	8m	
109	comp			↑		
110	9576-078	7 17	59 20	#64	6m	
111	comp			↑		
112	9576-079	7 11	55 59	#64	12m	PA = 80°
113	comp			↑		
114	SN1999B	12 11	74 47	#20	20m	
115	comp			↑		
116	Feige 66	12 32	25 04	#56	50s	
117	comp			↑		
118	Feige 66	12 37	25 04	#56	30s	PA = 54°
119	comp			↑		
120	125621m172107	12 56	-17 20	#81	20m	
121	comp			↑		
122	125635m174529	12 56	-17 45	#81	20m	
123	comp			↑		
124	125700m171913	12 57	-17 18	#81	7m	
125	comp			↑		
126	125642m174158	12 56	-17 42	#81	20m	
127	comp			↑		
128	125700m173748	12 57	-17 37	#81	15m	
129	comp			↑		

60 inch Telescope Log
 Observer: CALKINS
 PI: Tustin
 Spectrograph: FAST
 Grating: 300L
 Date: 1/15/99
 Page: 6902

Number	Object	R.A.	Dec.	L/R	Exp	Comments
130	A1644D5014	12 58	-17 51	#81	3m	
131	comp			↑		
132	A1644D5016	12 58	-17 51	#81	4m	
133	comp			↑		
134	A1644D5015	12 58	17 48	#81	10m	(weak spectra) poor quality
135	comp			↑		
136	V5548	14 17	25 08	#6	3.5m	
137	comp			↑		
138-142	sky			#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, Kenyon

Spectrograph: FAST

Grating: 300L

Date: 1/16/99

Page: 6903

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BIAS				0s	
21-30	FLAT				6s	
31-40	BIAS				0s	
41-50	FLAT				12s	
51-55	sky			#57	2s	
56	comp			↑		
57	PGC 02059134	2 08	13 36	#56	4m	
58	comp			↑		
59	MS1	00 42	41 16	#57	1m	
60	comp			↑		
61	MRK 335	00 06	20 12	#6	3m	
62	comp			↑		
63	022238p571041	02 22	57 10	#83	1m	
64	comp			↑		
65	022239p570446	02 22	57 04	#83	3m	central spectra
66	comp			↑		
67	022239p570647	2 22	57 06	#83	2m	star west, fore/back
68	comp			↑		ground star
69	022239p571059	2 22	57 11	#83	1m	
70	comp			↑		
71	022242p570254	2 22	57 02	#83	1m	Fore/background *
72	comp			↑		
73	022243p570307	2 22	57 03	#83	1m	
74	comp			↑		
75	022243p570526	2 22	57 05	#83	15s	
76	comp			↑		
77	022243p570618	2 22	57 06	#83	20s	
78	comp			↑		
79	022244p571019	2 22	57 10	#83	30s	

chip gain calculation slightly low; gain ~ 1.09 read ~ 7.8

60 inch Telescope Log

Spectrograph: FAST

Observer: CALKINS

Grating: 300L

Page: 6904

PI: Kenyon, Huchra

Date: 1/16/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
80	comp			↑		
81	022248.570810	2 22	57 08	↑ ⁶⁸	15s	
82	comp			↑		
83	022250.570810	2 22	57 08	↑ ⁶⁸	45s	
84	comp			↑		
85	2m015134.3p	1 51	39 29	↑ ⁶⁸	15m	
86	comp			↑		
87	2m014950.7p	01 49	40 03	↑ ⁶⁸	12m	
88	comp			↑		
89	2m014953.5p	01 49	33 11	↑ ⁶⁸	8m	
90	comp			↑		
91	2m015032.7p	01 50	32 13	↑ ⁶⁸	20m	
92	comp			↑		
93	2m015116.5p	01 51	33 06	↑ ⁶⁸	10m	
94	comp			↑		
95	2m014637.8p	01 46	32 59	↑ ⁶⁸	8m	
96	comp			↑		
97	2m015100.6p	01 51	33 26	↑ ⁶⁸	8m	
98	comp			↑		
99	2m015229.8p	01 52	39 19	↑ ⁶⁸	7m	
100	comp			↑		
101	2m014823.2p	01 48	32 42	↑ ⁶⁸	9m	
102	comp			↑		
103	2m015231.4p	01 52	33 03	↑ ⁶⁸	9m	
104	comp			↑		
105	2m014707.8p	01 47	41 25	↑ ⁶⁸	10m	
106	comp			↑		
107	2m04740.2p	01 47	40 38	↑ ⁶⁸	12m	object west
108	comp			↑		
109	2m015230.5p	01 52	33 10	↑ ⁶⁸	15m	star west

<p>60 inch Telescope Log</p> <p>Observer: <u>CALKINS</u></p> <p>PI: <u>Huchra, Garcia, Rines</u></p>	<p>Spectrograph: <u>FACT</u></p> <p>Grating: <u>300L</u></p> <p>Date: <u>1/16/99</u></p>
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Page: 6905

Number	Object	R.A.	Dec.	L/R	Exp	Comments
110	comp			↑		
111	2h015102.7p	1 51	33 02	#68	8m	
112	comp			↑		
113	2h014555.4p	1 45	33 46	#68	20m	
114	comp			↑		
115	2h014913.8p	1 49	41 57	#68	12m	
116	comp			↑		
117	2h014709.7p	1 47	32 47	#68	15m	
118	comp			↑		
119-121	CICGm	4 19	55 59	#107	42090s	
122	comp			↑		
123	a576-080	7 09	52 53	#64	8m	
124	comp			↑		
125	a576-081	7 40	57 53	#64	5m	
126	comp			↑		
127	a576-082	6 57	53 52	#64	7m	
128	comp			↑		
129	a576-083	7 08	56 11	#64	6m	
130	comp			↑		
131	a576-084	7 45	54 12	#64	12m	
132	comp			↑		
133	a576-085	7 31	57 56	#64	9m	
134	comp			↑		
135	a576-086	6 58	54 29	#64	17m	
136	comp			↑		
137	a576-087	7 12	53 55	#64	17m	
138	comp			↑		
139	a576-088	7 15	54 53	#64	7m	
140	comp			↑		
141	a576-089	7 14	55 15	#64	5m	

60 inch Telescope Log

Observer: CALMINS

PI: Rincl

Spectrograph: FAST

Grating: 300L

Page: 6906

Date: 1/16/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
142	comp			↑		
143	a576-090	7 15	56 10	#64	4m	
144	comp			↑		
145	a576-091	7 17	54 08	#64	5m	
146	comp			↑		
147	a576-092	7 16	53 02	#64	4m	
148	comp			↑		
149	a576-093	7 21	54 39	#64	7m	2 *'s east, 1 * west
150	comp			↑		
151	a576-094	7 18	59 41	#64	5m	* east
152	comp			↑		
153	a576-095	7 27	58 00	#64	7m	
154	comp			↑		
155	a576-096	6 58	57 59	#64	4m	
156	comp			↑		
157	a576-097	7 07	54 25	#64	6m	
158	comp			↑		
159	a576-098	7 23	59 04	#64	4m	
160	comp			↑		
161	a576-099	7 40	55 26	#64	5m	
162	comp			↑		
163	a576-100	7 08	56 03	#64	8m	
164	comp			↑		
165	a576-101	7 37	57 35	#64	5m	
166	comp			↑		
167	a576-102	7 37	55 10	#64	3.5m	
168	comp			↑		
169	a576-103	6 54	55 14	#64	4m	
170	comp			↑		
171	a576-104	7 26	56 40	#64	10m	

60 inch Telescope Log
 Observer: CALKINS
 PI: RINES, Kirshner, All, Tustin
 Spectrograph: FAST
 Grating: 300L
 Date: 1/16/99
 Page: 6907

Number	Object	R.A.	Dec.	L/R	Exp	Comments
172	comp			↑		
173	AS76-105	7 28	56 49	#64	5m	
174	comp			↑		
175	AS76-106	7 27	57 10	#64	8m	
176	comp			↑		
177	AS76-107	7 27	56 57	#64	4m	
178	comp			↑		
179	AS76-108	7 33	59 40	#64	4m	
180	comp			↑		
181	AS76-109	7 10	55 09	#64	4m	
182	comp			↑		
183, 184	SN1998bu	10 46	11 50	#2	20m	
185	comp			↑		
186	SN1997eg	13 11	22 56	#2	20m	PA = 110°
187	comp			↑		
188	H244	13 23	36 00	#56	2m	
189	comp			↑		
190	N4157	12 10	29 24	#6	30s	
191	comp			↑		
192	N4258	12 18	47 18	#6	2m	
193	comp			↑		
194	125646m 17230	12 56	-17 22	#81	20m	
195	comp			↑		
196	125648m 17130	12 56	-17 33	#81	20m	(weak)
197	comp			↑		
198	125702m 17100	12 57	-17 09	#81	20m	PA = 110°
199	comp			↑		
200	125706m 17150	12 57	-17 15	#81	10m	
201	comp			↑		
202	SBS1425p606	14 26	60 25	#6	10m	

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>6909</u>	
Observer: <u>CALKINS</u>			Grating: <u>300L</u>			
PI: <u>All, Kenyon, Huchra</u>			Date: <u>1/17/99</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-5	DARK				1.5m	
6-15	BIAS				0.5	
16-25	FLAT				6s	
26-35	BIAS				0.5	
36-45	FLAT				12.5	
46-50	sky			#57	2.5	
51	comp			↑		
52	Feige 25	2 38	5 28	#56	3m	
53	comp			↑		
54	M32	00 42	40 51	#57	1m	
55	comp			↑		
56	MRK 335	00 06	20 11	#6	3m	
57	comp			↑		
58	AKN 564	22 42	29 43	#6	5m	
59	comp			↑		
60	N7469	23 03	8 52	#6	2.5m	star east
61	comp			↑		
62	022207p570607	2 21	57 06	#83	112m	
63	comp			↑		
64	022212p570600	2 22	57 06	#83	17m	••, bright star to the west
65	comp			↑		
66	022212p570601	2 22	57 05	#83	20m	bright star to the west, PA=60°
67	comp			↑		
68	022214p570937	2 22	57 09	#83	1m	
69	comp			↑		
70	022217p570609	2 22	57 05	#83	15m	PA=30°
71	comp			↑		
72	022217p570613	2 22	57 05	#83	6m	Last one!
73	comp			↑		
74	2m015132.9p	1 51	30 40	#68	3m	

60 inch Telescope Log

Observer: CALKINS

PI: All, Kenyon, Huchra

Spectrograph: FAST

Grating: 300L

Page: 6909

Date: 1/17/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-5	DARK				.5m	
6-15	BIAS				0s	
16-25	FLAT				6s	
26-35	BIAS				0s	
36-45	FLAT				12s	
46-50	sky			#57	2s	
51	comp			↑		
52	Feige 25	2 38	5 28	#56	3m	
53	comp			↑		
54	M32	00 42	40 51	#57	1m	
55	comp			↑		
56	MRK 335	00 06	20 11	#6	3m	
57	comp			↑		
58	AKN 564	22 42	29 43	#6	5m	
59	comp			↑		
60	N7469	23 03	8 52	#6	2.5m	star east
61	comp			↑		
62	022207p570207	2 21	57 06	#83	11m	
63	comp			↑		
64	022212p570200	2 22	57 06	#83	17m	••, bright star to the west
65	comp			↑		
66	022212p570201	2 22	57 05	#83	20m	bright star to the west, PA=60°
67	comp			↑		
68	022214p570937	2 22	57 09	#83	1m	
69	comp			↑		
70	022217p570209	2 22	57 05	#83	15m	PA=30°
71	comp			↑		
72	022217p570613	2 22	57 05	#83	6m	Last one!
73	comp			↑		
74	2M015132.9p	1 51	30 40	#68	3m	

60 inch Telescope Log

Observer: CAUSENS

PI: Huchra

Spectrograph: FAST

Grating: 300 L

Page: 6910

Date: 1/17/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
75	comp			↑		
76	2M015313.7p	1 53	32 22	#68	3.5m	
77	comp			↑		
78	2M012417.8p	1 24	34 33	#68	4m	
79	comp			↑		
80	2M013130.2p	1 31	35 32	#68	5m	
81	comp			↑		
82	2M013220.6p	1 32	32 45	#68	8m	
83	comp			↑		
84	2M014038.0p	1 40	31 07	#68	2m	
85	comp			↑		
86	2M013229.3p	1 32	32 22	#68	5m	
87	comp			↑		
88	2M013116.3p	1 31	30 26	#68	10m	PA = 100°
89	comp			↑		
90	2M015203.0p	1 52	31 55	#68	5m	
91	comp			↑		
92	2M015152.2p	1 51	35 39	#68	8m	
93	comp			↑		
94	2M012326.9p	1 23	30 46	#68	4m	
95	comp			↑		
96	2M013548.7p	1 35	30 04	#68	5m	
97	comp			↑		
98	2M012160.2p	1 21	35 42	#68	4m	
99	comp			↑		
100	2M014245.8p	1 42	35 20	#68	5m	object to east
101	comp			↑		
102	2M015129.0p	1 51	30 52	#68	5m	
103	comp			↑		
104	2M012106.8p	1 21	31 17	#68	6m	

60 inch Telescope Log
 Observer: CALKINS
 PI: Huchra, Rines, Garcia, Kenyon
 Spectrograph: FAST
 Grating: 300L
 Date: 1/17/99
 Page: 6911

Number	Object	R. A.	Dec.	L/R	Exp	Comments
105	comp			↑		
106	2M01232.8p	1 22	35 55	#68	4m	
107	comp			↑		
108	2M01237.0p	1 23	35 05	#68	4m	
109	comp			↑		
110	2M015254.2p	1 52	31 10	#68	6m	
111	comp			↑		
112	a576-110	7 30	58 51	#64	6m	
113	comp			↑		
114	a576-111	7 42	54 00	#64	7m	
115	comp			↑		
116	a576-112	6 59	54 11	#64	10m	
117	comp			↑		
118	a576-113	7 26	58 19	#64	15m	
119	comp			↑		
120	a576-114	7 14	54 58	#64	3.5m	
121	comp			↑		
122	a576-115	7 32	57 40	#64	3.5m	
123	comp			↑		
124	a576-116	7 25	53 13	#64	10m	
125	comp			↑		
126-128	CCCam	4 19	56 00	#107	2, 20, 90	
129	comp			↑		
130	15GGem	6 03	27 41	#100	6m	
131	comp			↑		
132	a576-117	7 34	57 27	#64	15m	object east
133	comp			↑		
134	a576-118	7 37	57 03	#64	6m	
135	comp			↑		
136	a576-119	7 16	56 49	#64	10m	

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>6912</u>	
Observer: <u>CALKINS</u>		<u>Kirstner</u>		Grating: <u>300L</u>			
PI: <u>RINEE, KORANYE, ALL,</u>				Date: <u>1/17/99</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments	
137	comp			↑			
138	a576-120	7 19	58 09	#64	12m		
139	comp			↑			
140	a576-122	7 45	55 16	#64	3m	(PA = 110°)	
141	comp			↑			
142	a576-123	7 44	57 06	#64	5m		
143	comp			↑			
144	a576-124	7 36	53 03	#64	3.5m		
145	comp			↑			
146	a576-125	7 29	53 35	#64	17m		
147	comp			↑			
148	a576-126	7 38	57 43	#64	5m		
149	comp			↑			
150	a576-129	7 47	54 56	#64	20m	PA = 100°	
151	comp			↑			
152	awml-054	9 18	20 01	#35	20m		
153	comp			↑			
154	awml-058	9 15	19 54	#35	10m		
155	comp			↑			
156	awml-060	9 16	19 56	#35	17m		
157	comp			↑			
158	awml-061	9 16	19 35	#15	8m	(Sorry Susan - should've given more time!)	
159	comp			↑			
160	awml-062	9 19	19 36	#35	20m		
161	comp			↑			
162	awml-063	9 17	20 43	#35	20m		
163	comp			↑			
164	MRK 421	11 04	38 12	#6	4m		
165	comp			↑			
166	sn ICG94	11 28	58 33	#2	10m	PA = 0.0° Type II!	

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>6913</u>
Observer: <u>CALIXUS</u>				Grating: <u>300L</u>		Date: <u>1/17/99</u>
PI: <u>Kirchner, All, Tustin</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1167	comp			↑		
1168	sn ICG94	11 28	58 23	#2	10m	PA=0.0°
1169	comp			↑		
170-172	sn 19985	11 46	47 28	#2	20m	
173	comp			↑		
174	sn 19998	12 11	74 47	#2	20m	
175	comp			↑		
176	H244	13 23	36 08	#56	2m	
177	comp			↑		
178	N5549	14 18	25 08	#6	3m	
179	comp			↑		
180	MRK 279	13 52	69 18	#6	3m	
181	comp			↑		
182	25708m-174115	12 57	-17 42	#81	17m	
183	comp			↑		
184	H244	13 23	36 08	#56	2m	
185	comp			↑		
196-195	FLAT				0s	
196-205	FLAT				6s	
206-215	BIAS				0s	
216-225	FLAT				12s	
226-235	DARK				15m	

60 inch Telescope Log		Spectrograph: <u>FAST</u>		Page: <u>6914</u>		
Observer: <u>P. Berlin</u>		Grating: <u>3000, 3" SIA</u>		Date: <u>1/18/99</u>		
PI: <u>All</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-8	DARK				15m	
9-20	BIAS				6s	clear skies
21-30	FLAT				6s	clouds to far W
31-40	BIAS				6s	
41-50	FLAT				12s	
51-55	sky			S7	2s	
56	COMP			↑		
57-59	HD 219734	23:47	+49:02	S7	1s	
60	COMP			↑		
61-67	HD 2003	02:35	+71:46	S7	1/6	
68	COMP			↑		
69-67	HD 220944	00:03	+63:58	S7	4s	
68	COMP			↑		
69-71	HD 1845	00:27	+55:17	S7	6s	
72	COMP			↑		
73-75	HD 2063	00:25	+52:50	S7	4s	
76	COMP			↑		
77-78	HD 222501	23:49	+62:12	S7	4s	
80	COMP			↑		
81-83	HD 217086	22:51	+62:27	S6	1/6	
84	COMP			↑		
85-86	M32	00:39	+39	S7	30s	
87	COMP			↑		
88	MRK 335	00:03	+49:58	G	3m	
89	COMP			↑		
90	N7469	23:03	+68:52	G	2.5m	
91	COMP			↑		
92	Faye 10	23:17	-05:26	S6	2m	
93	COMP			↑		

60 inch Telescope Log

Observer: PD

PI: Huchra

Spectrograph: FAST

Grating: 300R

Date: 1/18/99

Page: 6915

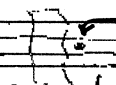
Number	Object	R.A.	Dec.	L/R	Exp	Comments
94	Akn 54	22:40	+29:27	6	5m	
95	COMP			↑		
96	18m 213	00:43	+41:07	57	5m	
97	COMP			↑		
98	ZM 010428.9	01:04	+19:20	68	4m	
99	COMP			↑		
100	ZM 011002.5	01:10	+22:41	68	7m	
101	COMP			↑		
102	ZM 011352.9	01:13	+19:10	68	6m	
103	COMP			↑		
104	ZM 010653.0	01:05	+18:55	68	10m	close EW pair bin by 2
105	COMP			↑		
106	ZM 010306.9	01:03	+20:57	68	4m	
107	COMP			↑		
108	ZM 012218.6	01:22	+19:33	68	4m	
109	COMP			↑		
110	ZM 021536	01:21	+19:44	68	5m	
111	COMP			↑		
112	ZM 011404.4	01:14	+18:23	68	5m	
113	COMP			↑		
114	ZM 024939.5	02:49	+21:12	68	2m	* to be E
115	COMP			↑		
116	ZM 025017.2	02:50	+18:44	68	4m	
117	COMP			↑		
118	ZM 024928.4	02:49	+21:56	68	4m	
119	COMP			↑		
120	ZM 021436	02:41	+20:27	68	5m	
121	COMP			↑		
122	ZM 024711.0	02:47	+21:59	68	5m	
123	COMP			↑		

60 inch Telescope Log

Observer: PB
 PI: Huchra & Kinoshita & Rimas

Spectrograph: FAST
 Grating: 300R
 Date: 1/18/99

Page: 6916

Number	Object	R.A.	Dec.	L/R	Exp	Comments
124	ZM024939.9	02:49	+18:15	68	5m	
125	WMP			↑		
126	ZM024549.7	02:45	+18:55	68	4m	
127	WMP			↑		
128	ZM033007.5	03:30	+35:40	68	7m	
129	WMP			↑		
130	ZM033257.0	03:32	+33:27	68	4m	agn
131	WMP			↑		
132	ZM030750.7	03:03	+12:01	68	4m	
133	WMP			↑		
136	ZM032510.7	03:25	+30:46	68	15m	fruit!  52m
137	WMP			↑		reflection neb + star
138-140	CXCen	04:19	+55:59	107	2, 20, 90	
141	WMP			↑		
142	g576-142	06:55	+55:28	64	4m	
143	WMP			↑		
144	-141	06:58	+57:29	64	4m	
145	WMP			↑		
146	-161	06:55	+56:01	64	5m	
147	WMP			↑		
148	SN1988fa	06:42	+41:25	2	20m	
149	WMP			↑		
150	g576-130	07:00	+55:13	64	5m	
151	WMP			↑		
152	178	07:09	+58:57	64	5m	
153	WMP			↑		
154	139	07:10	+56:01	64	5m	
155	WMP			↑		
156	145	07:01	+56:30	64	4m	
157	WMP			↑		

60 inch Telescope Log

Observer: PB
 PI: Rines

Spectrograph: FAST
 Grating: 3000
 Date: 1/18/99

Page: 6917

Number	Object	R.A.	Dec.	L/R	Exp	Comments
158	a576-151	07:12	+58:57	64	5m	
159	COMP			↑		
160	-156	07:10	+58:00	64	5m	
161	COMP			↑		
162	-129	07:30	+57:28	64	5m	+ to W wk
163	COMP			↑		
164	-131	07:26	+58:58	64	5m	
165	COMP			↑		
166	-132	07:29	+57:28	64	5m	
167	COMP			↑		
168	133	07:32	+58:16	64	6m	
169	COMP			↑		
170	135	07:27	+58:24	64	6m	
171	COMP			↑		
172	136	07:29	+58:11	64	8m	bandy 2 PA=80 0. BW comp em
173	COMP			↑		
174	137	07:23	+57:58	64	5m	
175	COMP			↑		
176	138	07:34	+58:10	64	4m	
177	COMP			↑		
178	143	07:26	+57:41	64	6m	
179	COMP			↑		
180	144	07:34	+58:38	64	5m	
181	COMP			↑		
182	146	07:18	+54:43	64	7m	em
183	COMP			↑		
184	147	07:41	+57:13	64	4m	+ to W
185	COMP			↑		
186	148	07:38	+54:57	64	5m	
187	COMP			↑		

60 inch Telescope Log

Observer: PB
 PI: Rines

Spectrograph: FAST

Grating: 300L

Page: 6918

Date: 1/18/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
188	9576-149	07:40	+54:26	64	8m	
189	COMP			f		
190	152	07:40	+54:51	64	5m	
191	COMP			f		
192	150	07:45	+54:59	64	5m	
193	COMP			f		
194	155	07:48	+54:41	64	5m	
195	COMP			f		
196	153	07:31	+55:15	64	5m	
197	COMP			f		
198	154	07:36	+53:08	64	5m	
199	COMP			f		
200	157	07:44	+54:54	64	5m	
201	COMP			f		
202	158	07:15	+57:59	64	5m	
203	COMP			f		
204	159	07:29	+57:47	64	5m	
205	COMP			f		
206	160	07:37	+58:54	64	6m	
207	COMP			f		
208	164	07:32	+55:11	64	5m	
209	COMP			f		
210	163	07:47	+54:25	64	5m	
211	COMP			f		
212	166EW	07:18	+59:40	64	5m	only 2 EW gals
213	COMP			f		
214	165	07:38	+56:57	64	8m	
215	COMP			f		
216	167EW	07:34	+55:00	64	7m	EW gals
217	COMP			f		

60 inch Telescope Log		Spectrograph: <u>FAST</u>		Page: <u>6919</u>		
Observer: <u>PB</u>		Grating: <u>3002</u>		Date: <u>1/18/99</u>		
PI: <u>Rines</u>						
Number	Object	R. A.	Dec.	L/R	Exp	Comments
218	9576-168	07:32	+58:13	64	6m	nice sky
219	OMP			↑		
220	169	07:41	+55:02	64	7m	
221	OMP			↑		
222	170	07:43	+54:47	64	5m	
223	OMP			↑		
225	171	07:38	+58:59	64	5m	
226	OMP			↑		
227	172	07:39	+55:07	64	5m	
228	OMP			↑		
229	173	07:03	+51:38	64	5m	
230	OMP			↑		
231	177	07:08	+54:16	64	5m	bright & off slit to W
232	OMP			↑		
233	175ED	07:29	+56:09	64	8m	E+W gets blurry
234	OMP			↑		
235	176	07:41	+55:27	64	4m	* to E out of slit
236	OMP			↑		
237	174	07:35	+55:24	64	6m	
238	OMP			↑		
239	178	07:27	+57:14	64	7m	em
240	OMP			↑		
241	179	07:30	+58:41	64	6m	
242	OMP			↑		
243	180	07:33	+56:55	64	5m	
244	OMP			↑		
245	181	07:32	+58:36	64	4m	
246	OMP			↑		
247	182	07:31	+53:43	64	5m	
248	OMP			↑		

60 inch Telescope Log

Observer: PB
 PI: Huchra & Tustin

Spectrograph: FAST
 Grating: 300R
 Date: 1/18/95

Page: 6920

Number	Object	R.A.	Dec.	L/R	Exp	Comments
249.250	Fery 34	10:43	+176	56	90s	
251	COMP			↑		clouds getting closer
252	ZM124345.1	12:45	+1777	68	5m	
253	COMP			↑		
254	ZM124135.9	12:41	+16:20	68	4m	
255	COMP			↑		
256	ZM130005.5	13:00	+16:32	68	6m	* to W
257	COMP			↑		
258	ZM130646.3	13:06	+16:14	68	6m	4/2
259	COMP			↑		
260	ZM130333.1	13:03	+14:50	68	4m	4/3
261	COMP			↑		
262	A1644 DS001	12:55	-17:08	81	7m	
263	COMP			↑		
264	Z	12:53	-17:43	81	8m	pec em
265	COMP			↑		
266	S	12:54	-17:40	81	5m	
267	COMP			↑		
268	Z7	12:54	-17:21	81	5m	
269	COMP			↑		
270	Z4	12:54	-17:25	81	4m	
271	COMP			↑		
272	Z2	12:54	-17:23	81	4m	clouds in N+W
273	COMP			↑		
274	Z3	12:52	-17:21	81	6m	
275	COMP			↑		
276	SN1998E	13:17	-16:33	Z	15m	PA=-15 young type II
277	COMP			↑		
278.279	H244	13:21	+16:23	56	2m	PA=70
280	COMP			↑		

60 inch Telescope Log

Observer: PB

PI: Huckra

Spectrograph: FAST

Grating: 30R, 35H

Page: 6921

Date: 1/18/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
251	N4151	12:08	+79.41	6	30s	clouds.
252	COMP			↑		
253	N4051	12:00	+44.48	6	2m	
254	COMP			↑		
255	MRK279	13:51	+69.33	6	3m	
256	COMP			↑		
257	N5548	14:15	+75.22	6	3m	
258	COMP			↑		
259	ZM170518.1	13:05	+16.34	68	8m	
260	COMP			↑		
261	ZM133945.4	13:39	+16.29	68	5m	
262	COMP			↑		Stopped by clouds!
293-302	BIDS	17:30	+16.10		0s	
303-312	FLAT				6s	
313-322	BIDS				0s	
323-332	FLAT				12s	
333-337	DARK					

60 inch Telescope Log

Observer: PBerlin

PI: And:

Spectrograph: FAST

Grating: 3000

Date: 1/19/99

Page: 6902

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	BIAS				0s	
11-20	FLAT				6s	lots + lots of clouds
21-30	BIAS				0s	
31-40	FLAT				12s	
41-44	H1021706	22:54	+62:27	S6	5s/5s	
45	WMP			↑		
46	M32	02:39	+40:35	S7	1m	
47	WMP			↑		
48	Z25m250	00:49	+47:20	S7	5m	
49	WMP			↑		
50	MRK335	10:03	+64:55	6	4m	
51	WMP			↑		
52	M769	23:03	+04:52	6	4m	
53	WMP			↑		
54	AKN864	22:42	+22:43	6	5m	
55	WMP			↑		
56	51961MS-001	02:27	+10:30	S9	6m	
57	WMP			↑		
58	002	02:28	+10:47	S9	90s	
59	WMP			↑		
60	003	02:28	+10:41	S9	6m	
61	WMP			↑		
62	004	02:28	+10:22	S9	8m	bin by 2; 2 to W
63	WMP			↑		extended Ha @ pix 2110!
64	006	02:29	+10:46	S9	4m	
65	WMP			↑		
66	007	02:29	+10:23	S9	5m	
67	WMP			↑		
68	008	02:29	+10:48	S9	5m	
69	WMP			↑		

60 Inch Telescope Log

Observer: PB

PI: Andi

Spectrograph: FAST

Grating: 3000

Date: 1/19/99

Page: 6923

Number	Object	R.A.	Dec.	L/R	Exp	Comments
70	Srg b145-010	02:29	+01:10	S9	3m	
71	WMP			f		
72	011	02:29	+01:10	S9	9m	
73	WMP			f		
74	012	02:30	+01:25	S9	3m	
75	WMP			f		
76	012	02:30	+01:18	S9	5m	
77	WMP			f		
78	014	02:30	+01:17	S9	6m	
79	WMP			f		
80	015	02:30	+01:12	S9	6m	
81	WMP			f		
82	016	02:30	+01:55	S9	6m	
83	WMP			f		
84	018	02:23	+01:45	S9	2m	
85	WMP			f		
86	020	02:31	+01:37	S9	8m	
87	WMP			f		
88	021	02:31	+01:50	S9	8m	
89	WMP			f		
90	022	02:31	+01:39	S9	8m	
91	WMP			f		windy
92	023	02:31	+01:20	S9	6m	cloudy
93	WMP			f		
94	024	02:31	+01:02	S9	7m	
95	WMP			f		
96	025	02:31	+01:54	S9	6m	
97	WMP			f		
98	027	02:31	+01:15	S9	3m	
99	WMP			f		

<p>60 inch Telescope Log</p> <p>Observer: <u>PB</u></p> <p>PI: <u>Rines</u></p>	<p>Spectrograph: <u>FAST</u></p> <p>Grating: <u>300L</u></p> <p>Date: <u>1/19/99</u></p> <p style="text-align: right;">Page: <u>6924</u></p>
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Number	Object	R.A.	Dec.	L/R	Exp	Comments
100	Srgb 145_028	02:31	+02:02	59	5m	
101	COMP			↑		
102	029	02:31	+01:12	59	5m	
103	COMP			↑		
104	030	02:31	+01:44	59	2m	
105	COMP			↑		
106-108	CICan	04:19	+55:59	107	31, 25s, 90s	
109	COMP			↑		
110	BALcan	06:05	+27:41	100	6m	
111	COMP			↑		
112	a 576-183	07:28	+56:05	69	5m	
113	COMP			↑		
114	184	07:25	+53:41	69	5m	
115	COMP			↑		
116	185	07:29	+57:49	69	9m	
117	COMP			↑		
118	190	07:26	+57:28	69	5m	
119	COMP			↑		
120	187	07:23	+56:34	69	6m	increasing clouds
121	COMP			↑		
122	188	07:25	+57:19	69	10m	
123	COMP			↑		
124	192	07:05	+56:42	69	9m	
125	COMP			↑		delay of clouds
126	201	07:28	+56:48	69	9m	clouds
127	COMP			↑		clouds
128	204	07:30	+58:06	69	7m	clouds
129	COMP			↑		delay
130	202	07:23	+57:40	69	11m	clouds
131	COMP			↑		clouds

60 inch Telescope Log
 Observer: PB
 PI: _____
 Spectrograph: FAST
 Grating: 30R
 Date: 1/19/99
 Page: 6925

Number	Object	R. A.	Dec.	L/R	Exp	Comments
132	a576_103	07:18	+57:26	64	6m	clearing nicely * to W
133	COMP			F		
134	195	07:20	+59:01	64	6m	
135	COMP			F		
136	194	07:34	+57:58	64	4m	
137	COMP			F		
138	193	07:38	+57:42	64	10m	
139	COMP			F		
140	191	07:29	+55:01	64	5m	
141	COMP			F		
142	189	07:45	+55:53	64	10m	
143	COMP			F		
144	207	07:26	+56:20	64	5m	
145	COMP			F		
146	208	07:27	+53:27	64	10m	
147	COMP			F		
148	206	07:36	+57:12	64	4m	
149	COMP			F		
150	205	07:40	+55:26	64	6m	
151	COMP			F		
152	211	06:57	+53:30	64	4m	
153	COMP			F		
154	212	07:41	+55:42	64	4m	
155	COMP			F		
156	209	07:29	+54:54	64	5m	
157	COMP			F		
158	210	07:13	+55:39	64	6m	
159	COMP			F		
160	210	07:24	+57:34	64	6m	6m by 2 Equipair
161	COMP					

60 inch Telescope Log
 Observer: PB
 PI: Rines & Ard.
 Spectrograph: FAST
 Grating: 3022
 Date: 1/19/99
 Page: 6926

Number	Object	R. A.	Dec.	L/R	Exp	Comments
162	a576-198	07:37	+55:30	64	4m	
163	COMP			↑		
164-5	Feige 34	10:36	+43	56	90s	
166	COMP			↑		
167	negs 038.185	09:23	+22:16	59	4m	
168	COMP			↑		
169	.186	09:23	+22:37	59	2m	
170	COMP			↑		
171	.187	09:23	+22:16	59	3m	
172	COMP			↑		
173	.188	09:23	+22:14	59	3m	
174	COMP			↑		
175	190	09:23	+22:18	59	3m	
176	194	09:23	+22:19	59	3m	
177	COMP			↑		
178	193	09:23	+22:19	59	4m	PA=80 to avoid sup the
179	COMP			↑		gal also in slit to W (#190)
180	196	09:23	+22:19	59	6m	gal also in slit to W (#194)
181	COMP			↑		
182	195	09:23	+22:40	59	5m	
183	COMP			↑		
184	191	09:23	+22:13	59	6m	WK.
185	COMP			↑		
186	197	09:23	+22:18	59	6m	another pulse of
187	COMP			↑		clouds coming in
188	198	09:23	+22:44	59	7m	
189	COMP			↑		
190	202	09:23	+22:54	59	2m	Sy 1!!
191	COMP			↑		
						Stop. clouds.

60 inch Telescope Log

Observer: PB

Spectrograph: EAST

Grating: 302

Page: 6927

PI: And

Date: 11/9/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
192	NGC 038-206	09:24	+22:19	S	5m	clouds.
193	COMP			T		
194	206	09:24	+22:19	S	4m	
195	COMP			T		clearing again!
196	207	09:24	+23:04	S	4m	* low
197	COMP			T		
198	205	09:23	+22:04	S	10m	
199	COMP			T		
200	201	09:23	+22:20	S	10m	
201	COMP			T		
202	SN 1999E	13:17	-18:33	Z	15m	PA=28
203	COMP			T		
204	HZ 14	13:21	+16:23	S	2m	PA=40
205	COMP			T		
206	A1644D5006	12:51	-17:40	S	6m	bright * + N PA=90
207	COMP			T		
208	009	12:53	-17:42	S	7m	
209	COMP			T		
210	012	12:54	-17:36	S	8m	wk
211	COMP			T		
212	013	12:53	+17:36	S	8m	
213	COMP			T		
214	043	12:52	+17:47	S	6m	
215	COMP			T		
216	N 5548	14:15	+25:22	S	3m	9
217	COMP			T		
218	MRC 2A	13:31	+6:57	S	3m	7
219	COMP			T		
220-229	BEAS				0s	
230-239	FLAT				12s	

240-249 BEAS 0s
 250-259 FLAT 6s
 260-264 DARK

60 inch Telescope Log

Observer: P Berlin
 PI: Andi

Spectrograph: FAST
 Grating: 3002
 Date: 1/20/99

Page: 6928

Number	Object	R. A.	Dec.	L/R	Exp	Comments
1-5	DARK				15m	
6-15	SPAS				05	cold, windy
16-25	FLAT				65	scattered clouds
26-35	SPAS				05	
36-45	FLAT				125	
46-50	SKY	zenith		57	25	thin clouds
51	COMP			↑		increasing
52-56	H1721700	2259	+02:27	57	55	
57	COMP			↑		
58-59	M32	W-39	+10:35	57	305	
60	COMP			↑		
61	M4335	0005	+19:55	6	3m	
62	COMP			↑		lots of clouds
63	N7169	23:03	+08:52	6	3m	
64	COMP			↑		
65	AKN 569	2240	+25:27	6	5m	
66	COMP			↑		
67	BDP284211	2148	+28:37	56	45	
68	COMP			↑		
69	SG145.0577	02:32	+10:45	59	3m	
70	COMP			↑		
71	036	02:32	+10:36	59	4m	
72	COMP			↑		
73	035	02:32	+10:35	59	5m	
74	COMP			↑		
75	034	02:32	+10:05	59	6m	
76	COMP			↑		
77	033	02:32	+10:14	59	6m	
78	COMP			↑		

60 inch Telescope Log
 Observer: PB
 PI: Andi Ken
 Spectrograph: FAST
 Grating: 3002
 Date: 1/20/99
 Page: 6980a (pe)

Number	Object	R.A.	Dec.	L/R	Exp	Comments
79	5196145.032	02:32	+01:19	S9	10m	clouds; seeing 2''+
80	WMP			f		
81	SN1998cs	01:37	+05:32	Z	20m	PA=45° date request
82	WMP			f		
83	5196145.034	02:32	+01:19	S9	8m	
84	WMP			f		
85	039	02:32	+01:18	S9	6m	
86	WMP			f		
87	040	02:32	+01:17	S9	6m	wk clouds
88	WMP			f		stop +go
89	043	02:33	+01:25	S9	5m	
90	WMP			f		
91	044	02:33	+01:19	S9	6m	per seeing
92	WMP			f		
93	045	02:33	+01:22	S9	10m	
94	WMP			f		
95	046	02:33	+01:08	S9	6m	
96	WMP			f		delay of clouds
97	2576-219	07:06	+54:23	G9	5m	
98	WMP			f		
99	217	07:15	+54:22	G9	5m	
100	WMP			f		
101	220	07:12	+56:51	G9	5m	
102	WMP			f		
103	218	07:12	+56:37	G9	12m	
104	WMP			f		
105	221	07:18	+57:09	G9	5m	
106	WMP			f		

60 inch Telescope Log
 Observer: PB
 PI: Ken
 Spectrograph: FAST
 Grating: 300L
 Date: 1/20/99
 Page: 6929

Number	Object	R.A.	Dec.	L/R	Exp	Comments
107	a576-223	07:49	+55:25	64	15m	redo
108	COMP			↑		clouds!
109	224	07:14	+55:20	64	15m	
110	COMP			↑		
111	223	07:13	+51:34	64	10m	
112	COMP			↑		
113	226	07:29	+52:15	64	12m	
114	COMP			↑		
115	207	07:10	+52:19	64	12m	
116	COMP			↑		stopped by clouds
117	M61ect	06:57	+69:03	99	20m	all clouds for Andis. 9
118	COMP			↑		nothing on slit ∴ NO extraction
119-128	BINS				0s	
129-138	FLAT				6s	
139-148	BINS				0s	
149-158	FLAT				12s	
159-162	DARK				20m	

60 inch Telescope Log

Observer: CALKINS

PL: All, Mahdavi

Spectrograph: FAST

Grating: 300L

Page: 6930

Date: 1/21/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BEAC				0s	
21-30	FLAT				6s	
31-40	BEAC				0s	
41-50	FLAT				12s	
51-55	sky			#57	2s	
56	comp			↑		
57	GOZOS p 134	2 08	13 36	#56	3.5m	
58	comp			↑		
59	M31	00 42	41 16	#57	90s	
60	comp			↑		
61	AKn 564	22 42	29 43	#6	5m	PA = 21°, bright star
62	comp			↑		"west"
63	N7469	23 03	8 52	#6	2.5m	PA = 58°
64	comp			↑		
65	MRK 335	00 06	20 12	#6	3m	PA = 64°
66	comp			↑		
67	AKn 120	5 16	00 09	#6	3m	PA = 39°
68	comp			↑		
69	sq b 145.047	2 32	00 59	#59	8m	very hazy due to blowing dust
70	comp			↑		
71	sq b 145.048	2 33	1 18	#59	15m	
72	comp			↑		
73	sq b 145.049	2 33	1 23	#59	5m	
74	comp			↑		
75	sq b 145.050	2 33	1 17	#59	6m	
76	comp			↑		
77	sq b 145.051	2 33	1 08	#59	5m	
78	comp			↑		
79	sq b 145.052	2 33	00 55	#59	17m	

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>6931</u>	
Observer: <u>CALKINS</u>				Grating: <u>700 L</u>			
PI: <u>Mohdavi, Bines, Kitchner</u>				Date: <u>1/21/99</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments	
80	comp			↑			
81	sr96145.054	2 34	1 21	#59	4m		
82	comp			↑			
83	sr96145.055	2 34	1 21	#59	12m		
84	comp			↑			
85	sr96145.056	2 34	00 31	#59	10m		
86	comp			↑			
87	sr96145.058	2 34	1 15	#59	13m		
88	comp			↑			
89	sr96145.059	2 35	1 58	#59	5m		
90	comp			↑			
91	sr96145.060	2 35	1 13	#59	20m		
92	comp			↑			
93	rs76-228	7 33	57 53	#64	13m		
94	comp			↑			
95	rs76-229	7 12	59 07	#64	5m	bright star west	
96	comp			↑			
97	rs76-230	7 02	58 48	#64	6m		
98	comp			↑			
99	rs76-231	7 38	54 41	#64	10m		
100	comp			↑			
101	rs76-232	7 24	54 43	#64	12m		
102	comp			↑			
103	rs76-233	7 16	53 22	#64	7m		
104	comp			↑			
105	sn1998fa	6 42	41 25	#2	20m	PA = 2°, terrible condit	
106	comp			↑			
107	rs76-234	7 18	58 08	#64	3.5m		
108	comp			↑			
109	rs76-235	7 47	55 41	#64	4m		

60 inch Telescope Log

Observer: CALKIN

PI: Rincy Mahdavi, Korany.

Spectrograph: FAST

Grating: 200L

Page: 6932

Date: 1/21/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
110	comp			↑		
111	a576-236	7 39	54 57	#64	6m	
112	comp			↑		
113	a576-237	7 43	52 43	#64	7m	
114	comp			↑		
115	a576-238	7 04	53 58	#64	7m	
116	comp			↑		
117	a576-240	7 24	52 18	#64	8m	
118	comp			↑		
119	arp5038-159	9 20	22 01	#59	12m	object weak!
120	comp			↑		
121	arp5038-159	9 20	21 44	#59	20m	<u>marginal</u>
122	comp			↑		
123	arp5038-160	9 20	21 59	#59	10m	
124	comp			↑		
125	arp5038-161	9 21	21 38	#59	6m	
126	comp			↑		
127	arp5038-164	9 22	21 44	#59	20m	superposed star but gal has em!
128	comp			↑		
129	arp5038-165	9 22	21 59	#59	12m	
130	comp			↑		
131	arp5038-166	9 22	22 24	#59	11m	
132	comp			↑		
133	mlw2-076	10 27	-6 23	#35	15m	
134	comp			↑		
135	mlw2-077	10 30	-3 07	#35	13m	
136	comp			↑		
137	mlw2-078	10 27	-3 04	#35	16m	
138	comp			↑		
139	mlw2-079	10 25	-2 55	#35	20m	

60 inch Telescope Log

Observer: Colkins

PI: Koranyi, All, Kirshner, Tustin

Spectrograph: FAST

Grating: 300L

Page: 6933

Date: 1/21/99

Number	Object	R.A.	Dec.	L/R	Exp	Comments
140	comp			↑		
141	MRK 421	11 04	38 12	#6	4m	PA = 80°
142	comp			↑		
143	N4051	12 03	44 31	#6	2m	(bad cab shutter
144	comp			↑		cable is preventing
145	N4151	12 10	39 29	#6	30s	any more rotations)
146	comp			↑		
147	MRK 279	13 52	69 18	#6	3m	
148	comp			↑		
149	N5548	14 17	25 08	#6	3m	
150	comp			↑		
151	sn1999E	13 17	-18 32	#2	20m	
152	comp			↑		
153	H244	13 23	36 07	#56	2m	
154	comp			↑		
155	H244	13 23	36 07	#56	2m	
156	comp			↑		
157	A1644DS046	12 59	-17 31	#81	7m	
158	comp			↑		
159-168	BINS				0s	
169-178	FLAT				6s	
179-188	BINS				0s	
189-198	FLAT				16s	
199-208	DARK				15m	

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

Spectrograph: FAST
 Grating: 100L
 Date: 1/22/99

Page: 6934

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-10	DARK				15m	
11-20	BIAS				0s	
21-30	FLAT				6s	
31-40	BIAS				0s	
41-50	FLAT				12.5	
51-55	sky			#57	2s	
56	comp			↑		
57	PG0205p134	2 08	13 36	#56	4m	
58	comp			↑		
59	M31	00 42	41 16	#57	1m	
60	comp			↑		
61	Akn564	22 42	29 43	#6	5m	bright star to the west, PA = 71.0°
62	comp			↑		PA = 56°
63	M7469	23 03	8 51	#6	2.5m	
64	comp			↑		
65	MRK335	00 06	20 12	#6	3m	PA = 64°, object east
66	comp			↑		
67	2M015018.2p	1 50	40 02	#68	12m	
68	comp			↑		
69	2M015444.1p	1 54	33 32	#68	12m	
70	comp			↑		
71	2M015022.9p	1 50	33 06	#68	17m	
72	comp			↑		
73	2M015057.9p	1 51	22 27	#68	12m	
74	comp			↑		
75	2M014651.5p	1 46	13 10	#68	12m	
76	comp			↑		
77	2M015450.8p	1 54	32 41	#68	12m	
78	comp			↑		
79	2M015114.8p	1 51	32 49	#68	15m	objects west - east

60 inch Telescope Log
 Observer: Callias
 PI: Huchra, Garcia, Keegan, Rinal
 Spectrograph: FAST
 Grating: 300L
 Date: 1/22/99
 Page: 6935

Number	Object	R.A.	Dec.	L/R	Exp	Comments
80	comp			↑		
81	ZM014756.8p	1 47	33 22	¹⁵ 68	15m	
82	comp			↑		
83	ZM014830.9p	1 48	32 30	¹⁵ 68	15m	
84	comp			↑		
85	ZM015136.4p	1 51	32 47	¹⁵ 68	10m	
86	comp			↑		
87	ZM015449.8p	1 54	33 38	¹⁵ 68	17m	
88	comp			↑		
89	ZM015115.4p	1 51	30 32	¹⁵ 68	20m	
90	comp			↑		
91	ZM015159.9p	1 52	33 15	¹⁵ 68	17m	
92	comp			↑		
93	ZM014605.2p	1 46	39 31	¹⁵ 68	7m	
94	comp			↑		
95	ZM015113.0p	1 51	33 03	¹⁵ 68	7m	
96	comp			↑		
97	ZM014807.8p	1 48	32 58	¹⁵ 68	17m	
98	comp			↑		
99	ZM014634.3p	1 46	32 55	¹⁵ 68	20m	
100	comp			↑		
101-103	C.I. Can	4 19	55 59	¹⁵ 107	2, 20, 92	
104	comp			↑		
105	BGGem	6 05	27 40	¹⁵ 100	6m	
106	comp			↑		
107	9576-196	7 32	52 30	¹⁵ 64	12m	
108	comp			↑		
109	9576-197	6 58	53 56	¹⁵ 64	20m	object west
110	comp			↑		
111	9576-199	7 19	57 23	¹⁵ 64	20m	

60 inch Telescope Log				Spectrograph: <u>FAST</u>		Page: <u>6936</u>
Observer: <u>Calkins</u>				Grating: <u>300L</u>		Date: <u>1/22/99</u>
PI: <u>Finey, All, Kishner</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
112	comp			↑		
113	as76-214	7 27	52 56	F64	15m	bright object east
114	comp			↑		
115	as76-215	7 27	59 23	F64	17m	beautiful spectrum
116	comp			↑		
117	as76-216	7 38	55 39	F64	12m	
118	comp			↑		
119	as76-241	7 23	57 13	F64	12m	
120	comp			↑		
121	MRK421	11 04	38 11	F64	4m	
122	comp			↑		
123-125	sn1998S	11 46	47 29	F2	20m	seeing deteriorating
126	comp			↑		
127	sn5395	13 58	32 25	F2	15m	No supernova
128	comp			↑		
129	sn1999E	13 17	18 32	F2	15m	
130	comp			↑		ccd shutter dead!! Unable to revive!!

60 inch Telescope Log
 Observer: CALKINS
 PI: Ally, Bucher
 Spectrograph: FAST
 Grating: 2006
 Date: 1/23/99
 Page: 6937

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-11	Test comps					
5-9	Dark				15m	
10-19	BIAS				0s	
20-29	FLAT				6s	
30-39	BIAS				0s	
40-49	FLAT				12s	
50	PGO205p134	2 08	13 36	#56	1.5m	circles @ sunset
51	comp			↑		
52	M31	00 42	41 16	#57	1m	
53	comp			↑		
54	Akn 564	22 42	29 43	#6	6m	bright star west
55	comp			↑		PA = 75°
56	N7469	23 03	8 52	#6	3m	PA = 57°
57	comp			↑		
58	MRK335	00 06	20 13	#6	3.5m	PA = 65°
59	comp			↑		
60	2M014945.0p	1 49	33 11	#68	15m	
61	comp			↑		
62	2M014603.1p	1 46	51 33	#68	12m	
63	comp			↑		
64	2M014758.3p	1 47	39 44	#68	8m	
65	comp			↑		
66	2M014708.3	1 47	53 10	#68	12m	
67	comp			↑		
68	2M015024.5p	1 50	41 32	#68	10m	
69	comp			↑		
70	2M015113.6p	1 51	33 01	#68	12m	three circles
71	comp			↑		
72	2M015145.8p	1 51	33 16	#68	10m	star to the west
73	comp			↑		

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>6938</u>	
Observer: <u>CAWKINS</u>			Grating: <u>300L</u>			
PI: <u>Huedra, Fines, Kishner, Garcia</u>			Date: <u>1/23/99</u>			
Number	Object	R.A.	Dec.	L/R	Exp	Comments
74	2M015454.7p	1 54	33 00	#68	15m	
75	comp			↑		
76	2M014725.3p	1 47	32 06	#68	15m	
77	comp			↑		
78	2M015001.3p	1 50	32 02	#68	12m	
79	comp			↑		
80	2M015249.0p	1 52	40 27	#68	20m	clouds ! #
81	comp			↑		
82	2M015340.7p	1 53	40 35	#68	17m	
83	comp			↑		
84	a576-242	7 40	54 52	#64	10m	extracted E gal also
85	comp			↑		
86	a576-243	7 12	57 11	#64	12m	
87	comp			↑		
88	a576-244	7 07	55 00	#64	15m	
89	comp			↑		
90	sn1998fa	6 42	41 23	#2	20m	
91	comp			↑		
92	a576-245	6 56	55 13	#64	12m	
93	comp			↑		
94-96	CICam	4 19	55 59	#107	2,2090	clouds moving in
97	comp			↑		
98	a576-246	7 25	54 59	#64	17m	
99	comp			↑		
100	a576-247	7 18	59 40	#64	4m	object west
101	comp			↑		
102	a576-249	6 57	54 25	#64	20m	
103	comp			↑		
104	a576-247	7 18	59 40	#64	6m	object west (low counts on file 103)
105	comp			↑		

60 inch Telescope Log
 Observer: CALKINS
 PI: Rines, Koranyi, Auchray, Mink
 Spectrograph: FAS5
 Grating: 100L
 Date: 1/23/99
 Page: 6939

Number	Object	R.A.	Dec.	L/R	Exp	Comments
106	a576-250	7 26	55 45	#64	17m	
107	comp			↑		
108	a576-251	7 25	53 05	#64	4m	
109	comp			↑		
110	a576-252	7 28	56 08	#64	5m	galaxy west
111	comp			↑		
112	mkw2-083	10 30	-3 13	#35	20m	thru clouds
113	comp			↑		
114	2M100235.5p	10 02	19 10	#68	7m	" " "
115	comp			↑		
116	2M100717.2p	10 07	21 00	#68	4m	
117	comp			↑		
118	N4486B	12 30	12 29	#78F	5m	Tilt = 672.0
119	comp			↑		
120	N4486B	12 30	12 29	#78F	5m	" " "
121	comp			↑		
122	N4486B	12 30	12 29	#78F	5m	" " "
123	comp			↑		
124	N4486B	12 30	12 29	#78F	5m	" " "
125	comp			↑		
126	N4486B	12 30	12 29	#78F	5m	" " "
127	comp			↑		
128	N4486B	12 30	12 29	#78F	5m	" " "
129	comp			↑		
130-139	FLAT				6s	← FLATs for #78F
140-142	sn1998S	11 45	47 29	#2	20m	thru clouds
143	comp			↑		
144	sn1999E	13 17	-18 32	#2	20m	PA=0°
145	comp			↑		
146	MRK 421	11 04	58 12	#6	4m	

110 ~~extracted~~ 2 objects on slit; extracted E object as a 276-252 + W object as a 276-252W (file 111 now)
 BOTH IN CLUSTER

60 inch Telescope Log			Spectrograph: <u>FAST</u>		Page: <u>6940</u>	
Observer: <u>CALVIN</u>			Grating: <u>300L</u>		Date: <u>1/22/99</u>	
PI: <u>All</u>						
Number	Object	R.A.	Dec.	L/R	Exp	Comments
147	comp			↑		
148	M4151	12 10	39 24	↑ 6	45s	
149	comp			↑		
150	MRX279	13 53	69 18	↑ 6	3m	
151	comp			↑		
152-156	sky			↑ 57	2.5	
157	comp			↑		
158-167	BIAS				0s	
168-177	FLAT				6s	
178-187	BIAS				0s	
188-197	FLAT				12s	
198-207	DARK				15m	

60 inch Telescope Log
 Observer: CALKINS
 PI: All

Spectrograph: FAST
 Grating: 300L
 Date: 1/24/99

Page: 6941

Number	Object	R.A.	Dec.	L/R	Exp	Comments
1-5	DARK				15m	
4-14	BIAS				0s	
16-25	FLAT				6s	
16-31	BIAS				0s	
16-45	FLAT				12s	
46-50	sky			#57	2s	
51	comp			↑		
52	PGC05154	2 08	13 36	#56	4m	clouds!
53	comp			↑		
54	M31	00 42	41 16	#57	1m	
55	comp			↑		
56	Aln 564	22 42	29 43	#6	6m	
57	comp			↑		
58	MRIK 335	20 06	20 12	#6	4m	soaked in!
59	comp			↑		
60-69	BIAS				0s	
70-79	FLAT				6s	
80-89	BIAS				0s	
90-99	FLAT				12s	
100-109	DARK				15m	