

SECUENCIA	OBJETO	A.R.	DEC.	EPOCA	FORMATO BINNING	FILTRO	FOCO TEL / TEMP.	INICIO EXPOSICION	TIEMPO EXPOSICION (SEG.)	COMENTARIOS
						λ $\Delta\lambda$	T.U.	AIR MASS		
3001	FLAT	twilight				B	NA	3:04:16	1.32	1.5
2						B		3:04:33	1.32	1.5
3						B		3:05:17	1.32	2
4						B		3:05:35	1.32	2
5						B		3:06:04	1.32	2
6						B		3:06:22	1.32	2
7						V		3:07:36	1.32	2
8						V		3:07:54	1.32	2
9						V		3:08:25	1.32	2
10						V		3:08:43	1.32	2
11						V		3:09:13	1.32	2
12						V		3:09:31	1.32	2
13						R		3:10:43	1.32	2
14						R		3:11:18	1.32	2
15						R		3:11:57	1.32	2
16						R		3:14:43	1.32	5
17						R		3:15:27	1.32	5
18						R		3:15:59	1.32	7
19						R		3:16:29	1.32	7
20						R		3:16:57	1.32	7
21						I		3:19:14	1.32	7
22						I		3:19:37	1.32	7
23						I		3:20:30	1.32	12
24						I		3:20:58	1.32	12
25	↓	↓				I		3:21:39	1.32	18

2 of 13

**OBSERVATORIO ASTRONOMICO NACIONAL S P M
BITACORA DE IMAGEN DIRECTA**

Fecha: el 4 de Julio UT Observadores: WALSH / ZAU

Telescopio: 1.5m Instrumento: LUCA Detector: SITel 1K Ganancia: _____

IMAGEN No. DE SECUENCIA	OBJETO	A.R.	DEC.	EPOCA	FORMATO BINNING	FILTRO		FOCO TEL / TEMP.	INICIO EXPOSICION		TIEMPO EXPOSICION (SEG.)	COMENTARIOS
						λ	$\Delta\lambda$		T.U.	AIR MASS		
26	FLAT	twilight				I			3:22:13	1.32	18	
27	BIAS											
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												
39	↓											
40	Tempel 1	13:38:03	-9 32 46			R		727.1	3:57:25	1.42	20	
41						R			3:58:01	1.42	20	
42						R			3:58:37	1.42	20	
43						R			3:59:13	1.42	20	
44						R			3:59:49	1.43	20	
45						R			4:00:25	1.43	20	
46						R		728.7	4:01:23	1.43	20	
47						R			4:01:59	1.43	20	
48						R			4:02:35	1.43	20	
49						R			4:03:12	1.44	20	
50						R		728.8	4:03:48	1.44	20	

No. DE SECUENCIA	OBJETO	A.R.	DEC.	EPOCA	FORMATO BINNING	FILTRO		FOCO TEL/ TEMP.	INICIO EXPOSICION		EXPOSICION (SEG.)	COMENTARIOS
						λ	$\Delta\lambda$		T.U.	ATL		
51	Tempal I					R		728.7	4:04:24	1.44	20	
52						R		728.8	4:05:27	1.44	20	
53						R			4:06:03	1.44	20	
54						R			4:06:39	1.45	20	
55						R			4:07:15	1.45	20	
56						R			4:07:51	1.45	20	
57						R			4:08:28	1.45	20	
58						R V		726.65	4:12:00	1.46	20	
59						V		726.3	4:12:36	1.47	20	
60						V			4:13:12	1.47	20	
61						V			4:13:48	1.47	20	
62						V		726.2	4:14:24	1.47	20	
63						V		726.2	4:15:00	1.47	20	
64						R		728.8	4:18:18	1.48	20	
65						R		728.8	4:18:54	1.49	20	
66						R			4:19:36	1.49	20	
67						R			4:20:07	1.49	20	
68						R			4:20:43	1.49	20	
69						R			4:21:19	1.49	20	
70						B		724.5	4:30:22	1.53	20	
71						B		724.5	4:30:58	1.53	20	
72						B			4:31:35	1.54	20	
73						B			4:32:11	1.54	20	
74						B			4:32:47	1.54	20	
75						B			4:33:23	1.54	20	

OBSERVATORIO ASTRONOMICO NACIONAL S P M
BITACORA DE IMAGEN DIRECTA

Fecha: el 4 de julio UT Observadores: WALSH / ZAU

Telescopio: 1.5 Instrumento: RUCA Detector: STe1 1K Ganancia:

IMAGEN No. DE SECUENCIA	OBJETO	A.R.	DEC.	EPOCA	FORMATO BINNING	FILTRO		FOCO TEL/ TEMP.	INICIO EXPOSICION		TIEMPO EXPOSICION (SEG.)	COMENTARIOS
						λ	$\Delta\lambda$		T.U.	ATL		
76	Tempal I					R		728.2	4:36:19	1.56	20	
77									4:36:55	1.56	20	
78									4:37:31	1.56	20	
79									4:38:08	1.56	20	
80									4:38:44	1.57	20	
81						V			4:39:20	1.57	20	
82						I		722.6	4:41:36	1.58	20	
83									4:42:12	1.58	20	
84									4:42:48	1.59	20	
85									4:43:24	1.59	20	
86									4:44:00	1.59	20	
87						V			4:44:36	1.60	20	
88						R		728.9	4:47:03	1.61	20	
89									4:47:39	1.61	20	
90								728.8	4:48:15	1.62	20	
91									4:48:51	1.62	20	
92									4:49:27	1.62	20	
93						V			4:50:03	1.63	20	
94						R		714.3	5:16:17	1.80	20	
95									5:16:53	1.80	20	
96									5:17:30	1.81	20	
97								713.4	5:18:06	1.81	20	
98								714.7	5:18:42	1.81	20	
99						V		713.6	5:19:18	1.82	20	
100						R		714.5	5:20:21	1.83	20	a little blurry

SECUENCIA	OBJETO	A.R.	DEC.	EPOCA	FORMATO BINNING	FILTRO	FOCO TEL / TEMP.	INICIO EXPOSICION (SEG.)	TIEMPO EXPOSICION (SEG.)	COMENTARIOS
						λ $\Delta\lambda$	T.U. $A.M.$			
101	Tempel I					R	714.5	5:20:58	1.83	20
102								5:21:34	1.84	20
103								5:22:10	1.84	20
104								5:22:46	1.85	20
105						↓		5:23:22	1.85	20
106						R	714.5	5:24:09	1.86	20
107								5:24:45	1.87	20
108								5:25:22	1.87	20
109								5:25:58	1.88	20
110								5:26:34	1.88	20
111						↓		5:27:10	1.89	20
112						R	714.5	5:27:50	1.89	20
113								5:28:26	1.90	20
114								5:29:02	1.91	20
115								5:29:38	1.91	20
116	bad streaks!					↓		5:30:15	1.92	20
117	a little blurry					↓		5:30:51	1.92	20
118						R	714.5	5:32:14	1.93	20
119								5:32:50	1.94	20
120							715.3	5:33:26	1.95	20
121	ABORTED! → m					↓				20
122						R	714.9	5:37:23	1.98	20
123								5:37:59	1.99	20
124								5:38:35	2.00	20
125						↓		5:39:11	2.00	20

**OBSERVATORIO ASTRONOMICO NACIONAL S P M
BITACORA DE IMAGEN DIRECTA**

6 OT 13

Fecha: el 4 de julio UT Observadores: WALSH / ZAU
 Telescopio: 1.5m Instrumento: RUCA Detector: SITel 1K Ganancia: _____

IMAGEN No. DE SECUENCIA	OBJETO	A.R.	DEC.	EPOCA	FORMATO BINNING	FILTRO		FOCO TEL / TEMP.	INICIO EXPOSICION:		TIEMPO EXPOSICION (SEG.)	COMENTARIOS
						λ	$\Delta\lambda$		T.U.	T.S.		
126	Tempel I					R		714.9	5:39:47	2.01	20	
127						R		715.8	5:40:23	2.02	20	
128						R		714.6	5:41:15	2.03	20	
129									5:41:51	2.04	20	
130									5:42:27	2.04	20	
131									5:43:03	2.04	20	
132									5:43:39	2.05	20	
133						↓			5:44:15	2.06	20	
134						R		714.6	5:44:57	2.07	20	
135									5:45:33	2.08	20	
136									5:46:09	2.08	20	
137									5:46:45	2.09	20	
138									5:47:21	2.10	20	blurred
139						↓			5:47:57	2.10	20	↓
140						R			5:48:36	2.11	20	↓
141								714.6	5:49:38	2.12	20	
142									5:50:33	2.13	20 10	
143									5:51:12	2.14	10	
144									5:52:08	2.15	10	We thought in part here - 13 seconds
145						↓		714.7	5:52:39	2.16	10	
146						R		714.7	5:53:12	2.17	10	
147						R		714.7	5:53:38	2.17	10	
148						R		714.7	5:54:04	2.18	10	
149						R		714.7	5:54:30	2.18	10	
150						R		714.7	5:54:56	2.19	10	

No. DE SECUENCIA	OBJETO	A.H.	DEC.	EPOCA	BINNING	λ	$\Delta\lambda$	TEMP.	T.U.	Air Mass	EXPOSICION (SEG.)	COMENTARIOS
151	Tempel I					R		714.7	5:55:22	2.20	10	
152						R		714.7	5:55:52	2.21	10	
153									5:56:18	2.21	10	
154									5:56:44	2.22	10	
155									5:57:10	2.22	10	
156									5:57:36	2.23	10	
157						↓			5:58:02	2.24	10	
158						R		714.7	5:58:32	2.25	10	
159								714.8	5:58:58	2.25	10	
160								714.2	5:59:24	2.26	10	
161									5:59:50	2.26	10	
162									6:00:16	2.27	10	
163						↓			6:00:42	2.28	10	
164						R		714.2	6:01:17	2.29	10	
165									6:01:43	2.29	10	
166									6:02:09	2.30	10	
167									6:02:35	2.30	10	
168									6:03:01	2.31	10	
169						↓			6:03:27	2.32	10	
170						R		714.2	6:03:53	2.32	10	
171									6:04:19	2.33	10	
172									6:04:45	2.34	10	
173									6:05:11	2.34	10	
174									6:05:37	2.35	10	
175	↓					↓			6:06:03	2.36	10	

8 of 13

OBSERVATORIO ASTRONOMICO NACIONAL S P M
BITACORA DE IMAGEN DIRECTA

Fecha: el 4 de julio UT Observadores: WALSH / ZAU

Telescopio: 1.5 m Instrumento: RUCA Detector: SITel 1K Ganancia: _____

IMAGEN No. DE SECUENCIA	OBJETO	A.R.	DEC.	EPOCA	FORMATO BINNING	FILTRO		FOCO TEL. TEMP.	INICIO EXPOSICION		TIEMPO EXPOSICION (SEG.)	COMENTARIOS
						λ	$\Delta\lambda$		T.U.	Air Mass		
176	Tempel I					R		714.7	6:06:46	2.37	20	
177									6:07:22	2.38	20	
178									6:07:58	2.39	20	blurr
179									6:08:34	2.40	20	
180									6:09:10	2.41	20	
181						↓			6:09:46	2.42	20	
182						R		714.7	6:11:09	2.44	20	
183								714.7	6:11:45	2.46	20	blurr
184								714.1	6:12:21	2.47	20	
185									6:12:57	2.48	20	
186									6:13:33	2.49	20	
187						↓			6:14:09	2.50	20	
188						R		714.1	6:15:30	2.53	20	
189									6:16:06	2.54	20	(streak)
190									6:16:42	2.55	20	
191									6:17:18	2.56	20	
192									6:17:54	2.57	20	
193						↓			6:18:31	2.59	20	
194						R		714.4	6:19:19	2.60	20	
195									6:19:55	2.62	20	blor
196									6:20:31	2.64	20	
197									6:21:07	2.65	20	
198									6:21:43	2.65	20	
199						↓			6:22:19	2.67	20	
200	↓					R		714.4	6:23:06	2.69	20	

No. DE SECUENCIA	OBJETO	A.H.	DEC.	EPOCA	BINNING	λ	$\Delta\lambda$	TEMP.	T.U.	T.S.	(SEG.)	
201	Tempel I					R		714.4	6:23:42	2.70	20	
202								714.8	6:24:18	2.71	20	
203								714.8	6:24:54	2.73	20	
204									6:25:30	2.74	20	
205						↓			6:26:06	2.75	20	
206						R		714.8	6:27:07	2.79	20	
207									6:27:43	2.80	20	Blurry
208									6:28:19	2.81	20	
209									6:28:55	2.83	20	
210						↓			6:29:31	2.84	20	
211						R			6:30:07	2.88	20	
212									6:31:03	2.90	20	
213									6:31:39	2.91	20	
214									6:32:16	2.92	20	
215								713.2	6:32:52	2.94	20	
216									6:33:28	2.95	20	
217						↓			6:34:04	2.96	20	
218						R		714.2	6:36:05	3.02	20	
219									6:36:41	3.03	20	
220									6:37:17	3.05	20	
221									6:37:54	3.07	20	
222									6:38:30	3.08	20	
223						↓			6:39:06	3.12	20	
224						R			6:40:37	3.15	20	
225	✓					R			6:41:13	3.17	20	

10 of 13

OBSERVATORIO ASTRONOMICO NACIONAL S P M
BITACORA DE IMAGEN DIRECTA

4
Fecha: el 8 de julio UT Observadores: WALSH / ZAU
Telescopio: 1.5m OAN-SPM Instrumento: RUCA Detector: SiTel 1K Ganancia:

IMAGEN No. DE SECUENCIA	OBJETO	A.R.	DEC.	EPOCA	FORMATO BINNING	FILTRO		FOCO TEL. TEMP.	INICIO EXPOSICION:		TIEMPO EXPOSICION: (SEG.)	COMENTARIOS
						λ	$\Delta\lambda$		T.U.	Air MASS		
226	Tempel I					R		714.6	6:41:49	3.19	20	
227									6:42:25	3.21		
228									6:43:01	3.24		
229									6:43:37	3.25		
230									6:44:22	3.29		
231									6:44:58	3.30		
232									6:45:34	3.32		
233									6:46:10	3.34		
234								↓	6:46:46	3.37		
235								714.0	6:47:22	3.39		
236								714.0	6:48:23	3.44		
237									6:48:59	3.45		
238									6:49:35	3.47		
239									6:50:11	3.50		
240									6:50:47	3.53		
241									6:51:23	3.56		
242									6:53:07	3.62		
243									6:53:43	3.64		
244									6:54:19	3.67		
245									6:54:55	3.71		
246									6:55:31	3.72		
247									6:56:07	3.75		
248									6:56:49	3.79		
249									6:57:25	3.82		Streak
250	✓					↓		↓	6:58:01	3.84	↓	

No. DE SECUENCIA	OBJETO	A.R.	DEC.	EPOCA	FORMATO BINNING	FILTRO		FOCO TEL. TEMP.	EXPOSICION		COMENTARIOS	
						λ	$\Delta\lambda$		T.U.	AIRY MASS		
251	Tempel I					R		713.2	6:58:37	3.88	20	Blurry
252									6:59:14	3.90	20	
253									6:59:50	3.95	20	
254									7:00:31	3.98	20	
255									7:01:07	4.00	20	
256									7:01:43	4.04	20	
257									7:02:19	4.07	20	
258									7:02:55	4.11	20	
259									7:03:31	4.14	20	
260	PG1633					R		715.1	7:21:28	1.19	15	
263									7:21:59	1.20		
264-267						R			7:22:30	1.20	15	
									7:23:01	1.21		
268-271						V		712.5	7:24:45	1.21	15	
								712.5	7:25:17	1.21		
272-275						B		711.4	7:25:48	1.22	15	
								711.4	7:26:19	1.23		
276-279						I		710.0		1.23	15	
								710.0		1.24		
280-283						R		715.3		1.25	15	(281-283) → STREAK
284						R		715.3	7:42:49	1.25	15	little blurry
285									7:43:20	1.26	15	good
286									7:43:51	1.26	15	good
287									7:44:22	1.26	15	streaked
288	(289-293 = BIAS)					R		715.3	7:45:17	1.26	15	good

OBSERVATORIO ASTRONOMICO NACIONAL S P M
BITACORA DE IMAGEN DIRECTA

Fecha: el 4 de julio UT Observadores: WALSH / ZAU
 Telescopio: 1.5m Instrumento: RUCA Detector: SiTel 1K Ganancia:

IMAGEN No. DE SECUENCIA	OBJETO	A.R.	DEC.	EPOCA	FORMATO BINNING	FILTRO		FOCO TEL. TEMP.	INICIO EXPOSICION		TIEMPO EXPOSICION (SEG.)	COMENTARIOS
						λ	$\Delta\lambda$		T.U.	AIRY MASS		
294	PG1633	16 36 30.1	09 47 10	2000		R		723.5	8:59:55	1.65	15	each set = 4x15
295									9:00:26	1.65	15	
296									9:01:23	1.66	15	
297									9:00:57	1.66	15	
298						V		721.5	9:03:45	1.68	15	
299									9:04:16	1.68	15	
300						V			9:04:47	1.69	15	
301									9:05:18	1.69	15	
302						B		719.9	9:07:10	1.70	15	
303									9:07:41	1.71	15	
304						B			9:08:12	1.72	15	
305									9:08:43	1.72	15	
306						I		717.8	9:11:26	1.75	15	
307									9:11:57	1.75	15	
308						I			9:12:28	1.76	15	
309									9:12:59	1.76	15	
310						R		723.3	9:15:35	1.78	15	
311									9:16:06	1.79	15	
312						R			9:16:37	1.79	15	
313									9:17:08	1.80	15	
314-318	(BIAS)											
319						R		723.2	9:19:33	1.82	15	
320									9:20:04	1.83	15	
321						R			9:20:36	1.83	15	
322									9:21:07	1.84	15	
323						R		721.5	10:14	2.83	15	
324									10:19	2.85	15	
325						R			10:19	2.86	15	
326									10:20	2.89	15	
327						V		720	10:22	2.94	15	
328									10:22	2.95	15	
329						V			10:23	2.97	15	
330									10:23	2.98	15	
331						B		717	10:26	3.05	15	
332									10:26	3.06	15	
333						B			10:27	3.08	15	
334									10:27	3.10	15	
335						I		716	10:29	3.16	15	
336									10:29	3.18	15	
337						I			10:30	3.20	15	
338									10:30	3.22	15	
339						R		721.8	10:33	3.31	15	
340									10:33	3.33	15	
341						R			10:34	3.35	15	
342									10:34	3.38	15	

IMAGEN No. DE SECUENCIA	OBJETO	A.R.	DEC.	EPOCA	FORMATO BINNING	FILTRO		FOCO.TEL/ TEMP.	INICIO EXPOSICION		TIEMPO EXPOSICION (SEG.)	COMENTARIOS
						λ	$\Delta\lambda$		T.U.	At		
343	PG1633								10:46	3.40	15	
344										3.43		
345									10:47	3.46	1	
346										3.48		
347	FLAT - SUNRISE								12:11:31	1.30	18	
348	FLAT								12:12:13		18	
349	FLAT								12:12:56		18	
350	FLAT								12:13:39		18	
351	FLAT								12:14:21		15	
352	FLAT								12:15:07		12	
353	FLAT								12:15:49		10	
354	FLAT								12:16:30		6	
355	FLAT								12:16:52		6	

July 4 UT
 Tempel
 4:00 13:37:42.6 -09:32:00
 5:00 13:37:47.05 -09:32:54.7
 6:00 13:37:51.47 -09:33:58.5 (E)

PG1633
 16:35:34 +09:46:22

(N3)

SECUENCIA	OBJETO	A.R.	DEC.	EPOCA	FORMATO BINNING	FILTRO	FOCO TEL/ TEMP.	INICIO EXPOSICION	TIEMPO EXPOSICION (SEG.)	COMENTARIOS
						λ $\Delta\lambda$	TU. TEMP.	TU. AIR MASS	(SEG.)	
1	TWILIGHT				1,1	B	NA	3:10:57	1.34	5
2	FLAT					B		3:11:18		5
3						B		3:11:56		8
4						V		3:12:20		8
5						V		3:13:30		7
6						V		3:13:53		7
7						V		3:14:27		9
8						V		3:14:52		9
9						V		3:15:26		12
10						V		3:15:54		12
11						R		3:17:17		8
12						R		3:17:41		8
13						R		3:18:16		12
14						R		3:18:44		12
15						R		3:19:21		15
16						R		3:19:52		15
17						I		3:21:22		17
18						I		3:21:55		17
19						I		3:22:41		22
20						I		3:23:17		22
21						I		3:23:57		22
22	BIAS									
26	Tempel I	13:39:56	-9 56 30	2000	1,1	R	741.7	4:11:35	1.48	20
27						R		4:12:11	" "	20
28						R		4:12:47	" "	20
29						R		4:13:23	" "	20
30						R		4:14:00	1.49	20
31						R		4:14:36	" "	20
32						V	739.7	4:16:40	1.50	20
33						B	737.9	4:17:16	" "	20
34						B		4:18:34	1.50	20
35						I	735.1	4:19:19	" "	20
36						I		4:20:31	1.51	20
37						I		4:21:07	1.51	20
38						R	742.0	4:23:03	1.52	20
39						R		4:23:39	1.52	20
40						R	740.3	4:25:40	1.53	20
41						V		4:26:16	" "	20
42						V		4:27:36	1.54	20
43						B	737.8	4:28:12	" "	20
44						B		4:30:02	1.55	20
45						I	735.3	4:30:39	" "	20
46						I		4:33:10	1.56	20
47						R	741.7	4:33:46	1.57	20
48						V	737.6	4:35:06	1.57	20
49						V		4:35:42	1.57	20
50						B	737.8	4:37:28	1.58	20
51						B		4:38:04	1.59	20
52						B				20

OBSERVATORIO ASTRONOMICO NACIONAL S P M
BITACORA DE IMAGEN DIRECTA

B 737.7
V 739.7
R 741.7
I 735.7

2 of 7

Fecha: el 5 de julio UT Observadores: WALSH / ZAV

Telescopio: 1.5m Instrumento: RUCA Detector: SITE1 1K Ganancia:

IMAGEN No. DE SECUENCIA	OBJETO	A.R.	DEC.	EPOCA	FORMATO BINNING	FILTRO	FOCO TEL/ TEMP.	INICIO EXPOSICION	TIEMPO EXPOSICION (SEG.)	COMENTARIOS
						λ $\Delta\lambda$	TU. TEMP.	TU. AIR MASS	(SEG.)	
53	Tempel I	13:40:05.3	-9 57 40	2000	1,1	I	736.0	4:39:59	1.60	20
54						R	742.4	4:40:35	" "	20
55						R	739.6	4:41:23	1.61	20
56						V	738.0	4:42:03	1.62	20
57						B	735.2	4:42:37	" "	20
58						B	741.2	4:44:22	1.64	20
59						I	737.7	4:47:38	1.65	20
60						I	735.2	4:47:50	1.65	20
61						R	741.2	4:51:27	1.66	20
62						R	735.7	4:55:13	1.68	20
63						R	741.2	4:55:49	1.68	20
64						V	737.7	4:56:57	1.69	20
65						V	741.2	4:57:34	1.69	20
66						B	736.6	4:59:04	1.70	20
67						B	735.6	4:59:40	1.71	20
68						I	741.6	5:00:52	1.71	20
69						I		5:01:28	1.72	20
70						R	739.0	5:04:47	1.74	20
71						R		5:05:23	1.74	20
72						V	737.7	5:06:50	1.75	20
73						V		5:07:26	1.76	20
74						B	735.7	5:08:54	1.77	20
75						B		5:09:31	1.78	20
76						I	741.2	5:11:02	1.79	20
77						I		5:11:39	1.79	20
78						R	739.3/737.8	5:12:44	1.80	20
79						R		5:13:20	1.80	20
80						V	737.8	5:14:17	1.81	20
81						V		5:14:53	1.81	20
82						B	735.8	5:15:53	1.82	20
83						B		5:16:29	1.83	20
84						I	735.8	5:18:10	1.84	20
85						I		5:18:46	1.85	20
86						R	741.9	5:20:35	1.86	20
87						R		5:21:12	1.87	20
88						V	740.0	5:22:32	1.88	20
89						V		5:23:08	1.88	20
90						B	737.9	5:24:28	1.90	20
91						B		5:25:04	1.90	20
92						I	735.8	5:26:32	1.92	20
93						I		5:27:08	1.92	20
94						R	741.2	5:30:34	1.95	20
95						R		5:31:11	1.96	20
96						R	741.1	5:32:00	1.97	20
97						R		5:32:36	1.98	20
98						R	741.1	5:34:33	2.00	20
99						R		5:35:09	2.00	20
100						R	739.8	5:36:18	2.01	20
101						V		5:37:30	2.02	20
102						V				20

Big streaks - No good
blurred position jump
good

SECUENCIA					BINNING	λ	$\Delta\lambda$	TEMP	TU	AIR MASS	(SEG.)	
103												
104	Tempel I	13:40:22.2	-9 58 24	2000	1,1	B		738.1	5:38:33	2.04	20	
105						I		735.7	5:39:09	2.04	20	
106						I		734.3	5:40:35	2.06	20	Focus Δ during
107						R		739.5	5:41:11	2.07	20	
108						R			5:44:43	2.11	20	~1.5" Seeing
109						V			5:45:19	2.11	20	
110						V			5:46:18	2.13	20	
111						B			5:46:54	2.13	20	
112						B		740.9	5:47:51	2.15	20	
113						I			5:48:27	2.16	20	Focus Δ during exp.
114						I			5:49:40	2.17	20	
115						R			5:50:16	2.18	20	
116						R			5:51:01	2.19	20	
117						V			5:51:37	2.20	20	
118						V			5:52:23	2.21	20	
119						B			5:52:59	2.22	20	
120						B			5:53:43	2.23	20	
121						I			5:54:19	2.23	20	
122						I			5:55:17	2.25	20	
123						R			5:55:53	2.26	20	
124						R			5:56:40	2.27	20	
125						V			5:57:16	2.28	20	
126						V			5:58:04	2.29	20	
127						B			5:58:40	2.30	20	
128						B			5:59:36	2.31	20	
129						I		740.7	6:00:13	2.32	20	
130						I			6:01:01	2.33	20	
131						R			6:01:37	2.34	20	Focus Δ during exp
132						R			6:02:39	2.36	20	
133						V			6:03:16	2.37	20	
134						V			6:04:24	2.39	20	
135						B			6:05:09	2.40	20	
136						B			6:06:10	2.42	20	
137						I			6:06:37	2.43	20	
138						I			6:07:34	2.45	20	
139	N3 Field	13:38:19.7	-9 36 39	2000		R		740.0	6:08:10	2.46	20	
140						R			6:21:54	2.76	20	
141						R			6:22:30	2.78	20	
142						R			6:23:07	2.79	20	
143						R			6:24:43	2.87	20	
144						R		740.5	6:24:39	2.82	20	
145						R			6:25:15	2.84	20	Focus Δ during exp
146	Tempel I	13:40:08.6	-9 59 50	2000		R		741.5	6:31:30	2.99	20	
147						R			6:32:07	3.02	20	Focus Δ during exp
148						V		741.5	6:33:00	3.04	20	(FITS wrong)
149						V			6:33:36	3.06	20	
150						B			6:34:34	3.09	20	
151						B			6:35:11	3.11	20	
152						I			6:36:13	3.14	20	
						I			6:36:50	3.16	20	

OBSERVATORIO ASTRONOMICO NACIONAL S P M
BITACORA DE IMAGEN DIRECTA

Fecha: el 5 de julio UT Observadores: WALSH

Telescopio: 1.5m Instrumento: RUCA Detector: SITel 1K Ganancia:

IMAGEN No. DE SECUENCIA	OBJETO	A.R.	DEC.	EPOCA	FORMATO BINNING	FILTRO		FOCO TEL / TEMP	INICIO EXPOSICION		TIEMPO EXPOSICION (SEG.)	COMENTARIOS
						λ	$\Delta\lambda$		TU			
153												
154	Tempel I	13 40 8.6	9 59 50	2000	1,1	R	739.6	741.5	6:37:36	3.19	20	Focus Δ to 739.6 during exp
155						V		739.6	6:38:13	3.20	20	
156						V		739.6	6:39:02	3.22	20	
157						B		739.6	6:39:38	3.25	20	
158						B		739.6	6:40:34	3.28	20	
159						I		739.6	6:41:10	3.30	20	
160						I		739.6	6:41:58	3.33	20	
161						R	740.8	739.6	6:42:34	3.35	20	
162						R		740.8	6:43:19	3.38	20	Focus Δ to 740.8 during exp
163						V		740.8	6:43:55	3.40	20	
164						V		740.8	6:44:41	3.43	20	
165						B		740.8	6:45:17	3.47	20	
166						B		740.8	6:46:15	3.49	20	
167						I		740.8	6:46:51	3.52	20	
168						I		740.8	6:47:40	3.55	20	
169						R		740.8	6:48:16	3.57	20	
170						R		740.8	6:49:46	3.63	20	
171						V		740.2	6:50:22	3.67	20	
172						V		740.2	6:51:18	3.70	20	
173						B		740.2	6:51:54	3.74	20	
174						B		740.2	6:52:39	3.77	20	
175		13 40 13.1	-9 59 50	2000		I		740.2	6:53:16	3.80	20	
176						I		740.7	6:54:06	3.84	20	Focus Δ
177						R		740.7	6:54:42	3.87	20	
178						R		740.7	6:55:30	3.90	20	
179						V		740.7	6:56:06	3.94	20	
180						V		740.7	6:56:51	3.98	20	
181						B		740.7	6:57:27	4.02	20	
182						B		740.7	6:58:17	4.05	20	
183		13 40 14.6				I		740.7	6:58:54	4.09	20	
184						I		740.7	6:59:48	4.15	20	
185						R		740.1	7:00:24	4.18	20	
186						R		740.1	7:01:13	4.23	20	
187	PG1633	16 35 32	9 46 25			R		741.6	7:02:25	4.28	20	6kerry
188						R		741.6	7:24:52	1.21	15	
189						R		741.6	7:25:23	1.22	15	
190						R		741.6	7:25:54	1.22	15	
191						V		739.9	7:26:25	1.22	15	
192						V		739.9	7:27:43	1.22	15	
193						V		739.9	7:28:14	1.22	15	
194						V		739.9	7:28:45	1.23	15	
195						B		739.9	7:29:47	1.23	15	
196						B		739.9	7:30:19	1.23	15	
197						B		739.9	7:30:50	1.23	15	
198						B		739.9	7:31:21	1.23	15	
199						I		739.9	7:31:52	1.23	15	
200						I		739.9	7:32:39	1.23	15	
201						I		739.9	7:33:10	1.23	15	
202						I		739.9	7:33:41	1.24	15	
						I		739.9	7:34:12	1.24	15	

312	10:56:54	2.08
313	11:00:20	2.12
314	11:02:07	2.15
315	11:03:53	2.17
316	11:08:03	2.24
317	11:09:49	2.27
318	11:11:35	2.30
319	11:16:08	2.38
320	11:17:55	2.42
321	11:19:41	2.46
322		
323		
324		
325		
326		
327		
328		
329		
330		
331		
332		
333		
334		
335		
336		
337		
338		
339		
340		

Temp 1
 (102)

13:35:55 - 04:08:21 @ 4:00 OT
 - 1" per hour

16:32:33
 13:25:59.5 - 08:50:00

16:33:33
 16:35:34 + 04:46:22

~~16:35:33~~ 16:47:53

~~16:35:33~~ 04

17:46:50 + 15:17:07