

Table 1

File	Object	RA set	DEC set	Filter	Date	UT-STRT	Log Differences	Comments (N left E up, rotate 90 CC)
fr87i001.fits	HELIUM				05/28/87	+16:46:14	MST Time	UT-Strt time in header for files 1-69 is MST +/- 4 mins; log is UT; RA/DEC are w.r.t the correct
fr87i002.fits	HELIUM				05/28/87	+16:48:20	MST Time	
fr87i003.fits	XENON				05/28/87	+16:52:15	MST Time	
fr87i004.fits	XENON				05/28/87	+16:54:27	MST Time	
fr87i005.fits								Log is written
fr87i006.fits	MERCURY	05:53:41.27	+25:39:35.6		05/28/87	+18:58:48	MST Time	No slit
fr87i007.fits	MERCURY	05:53:41.27	+25:39:35.6		05/28/87	+19:01:25	MST Time	No slit
fr87i008.fits	MERCURY	05:53:41.27	+25:39:35.6		05/28/87	+19:03:35	MST Time	No slit
fr87i009.fits	FLAT2	16:41:51.68	+59:30:33.8	R	05/28/87	+21:35:46	MST Time	Object unknown,RA/DEC from astrometry, Near Draco
fr87i010.fits	FLAT2	16:41:51.68	+59:30:33.8	"H A"	05/28/87	+21:50:56	MST Time	Object unknown,RA/DEC from astrometry, Near Draco
fr87i011.fits	FLAT2	16:41:51.68	+59:30:33.8	"H A"	05/28/87	+22:11:05	MST Time	Object unknown,RA/DEC from astrometry, Near Draco
fr87i012.fits	DRF21	16:50:39.35	+60:58:56.1	"H A"	05/28/87	+22:34:43	MST Time	Object unknown,RA/DEC from astrometry, Near Draco
fr87i013.fits	DRF21	16:50:39.35	+60:58:56.1	"H A"	05/28/87	+22:54:25	MST Time	Object unknown,RA/DEC from astrometry, Near Draco
fr87i014.fits	DRF21	16:50:39.35	+60:58:56.1	R	05/28/87	+23:15:26	MST Time	Object unknown,RA/DEC from astrometry, Near Draco
fr87i015.fits	DARK				05/28/87	+23:24:54	MST Time	
fr87i016.fits	DARK				05/28/87	+23:27:15	MST Time	
fr87i017.fits	DARK				05/28/87	+23:30:15	MST Time	
fr87i018.fits	URANUS	17:40:56.19	-23:31:03.3	R	05/28/87	+23:52:25	MST Time	
fr87i019.fits	URANUS	17:40:56.11	-23:31:03.3	R	05/28/87	+23:58:02	MST Time	
fr87i020.fits	OBERON	17:40:56.44	-23:30:20.2		05/29/87	+00:42:20	MST Time	
fr87i021.fits	OBERON	17:40:56.32	-23:30:20.2		05/29/87	+01:01:42	MST Time	
fr87i022.fits	OBERON	17:40:56.20	-23:30:20.2		05/29/87	+01:21:01	MST Time	
fr87i023.fits	OBERON	17:40:56.08	-23:30:20.2		05/29/87	+01:37:17	MST Time	
fr87i024.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/29/87	+02:08:27	MST Time	
fr87i025.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/29/87	+02:10:55	MST Time	
fr87i026.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/29/87	+02:12:32	MST Time	
fr87i027.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/29/87	+02:14:21	MST Time	
fr87i028.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/29/87	+02:15:26	MST Time	
fr87i029.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/29/87	+02:17:31	MST Time	
fr87i030.fits	OBERON	17:40:55.78	-23:30:20.2		05/29/87	+02:25:11	MST Time	
fr87i031.fits	OBERON	17:40:55.65	-23:30:20.2		05/29/87	+02:52:39	MST Time	
fr87i032.fits	OBERON	17:40:55.53	-23:30:20.3		05/29/87	+03:07:24	MST Time	
fr87i033.fits	OBERON	17:40:55.47	-23:30:20.3		05/29/87	+03:19:44	MST Time	
fr87i034.fits	OBERON	17:40:55.41	-23:30:20.3		05/29/87	+03:31:29	MST Time	
fr87i035.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/29/87	+04:24:17	MST Time	
fr87i036.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/29/87	+04:26:08	MST Time	
fr87i037.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/29/87	+04:27:09	MST Time	
fr87i038.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/29/87	+04:27:56	MST Time	
fr87i039.fits	"FLAT FIELD"				05/29/87	+04:52:36	MST Time	
fr87i040.fits	"FLAT FIELD"				05/29/87	+04:54:35	MST Time	

File	Object	RA set	DEC set	Filter	Date	UT-STRT	Log Differences	Comments (N left E up, rotate 90 CC)
fr87i041.fits	"FLAT FIELD"				05/29/87	+04:55:55	MST Time	
fr87i042.fits	MERCURY	06:06:22.89	+25:35:31.5		05/30/87	+18:49:52	MST Time	
fr87i043.fits	MERCURY	06:06:22.89	+25:35:31.5		05/30/87	+18:54:11	MST Time	
fr87i044.fits	MERCURY	06:06:30.53	+25:35:26.4		05/30/87	+19:18:23	MST Time	Log RA set at 8:...; ephemeris say 6...; spectra cannot verify. frames 44-69
fr87i045.fits	MERCURY	06:06:30.53	+25:35:26.4		05/30/87	+19:21:02	MST Time	
fr87i046.fits	MERCURY	06:06:30.53	+25:35:26.4		05/30/87	+19:24:09	MST Time	
fr87i047.fits	MERCURY	06:06:33.08	+25:35:24.6		05/30/87	+19:28:36	MST Time	
fr87i048.fits	MERCURY	06:06:33.08	+25:35:24.6		05/30/87	+19:30:45	MST Time	
fr87i049.fits	MERCURY	06:06:33.08	+25:35:24.6		05/30/87	+19:32:21	MST Time	
fr87i050.fits	MERCURY	06:06:33.08	+25:35:24.6		05/30/87	+19:34:15	MST Time	
fr87i051.fits	MERCURY	06:06:35.62	+25:35:22.9		05/30/87	+19:36:06	MST Time	
fr87i052.fits	MERCURY	06:06:35.62	+25:35:22.9		05/30/87	+19:37:31	MST Time	
fr87i053.fits	MERCURY	06:06:35.62	+25:35:22.9		05/30/87	+19:38:37	MST Time	
fr87i054.fits	MERCURY	06:06:35.62	+25:35:22.9		05/30/87	+19:41:00	MST Time	
fr87i055.fits	MERCURY	06:06:35.62	+25:35:22.9		05/30/87	+19:42:06	MST Time	
fr87i056.fits	MERCURY	06:06:35.62	+25:35:22.9		05/30/87	+19:43:12	MST Time	
fr87i057.fits	"BS 2141"	06:06:08.54	+35:23:15.9		05/30/87	+19:56:00	MST Time	
fr87i058.fits	"BS 2141"	06:06:08.54	+35:23:15.9		05/30/87	+19:57:54	MST Time	
fr87i059.fits	"BS 2141"	06:06:08.54	+35:23:15.9		05/30/87	+20:00:00	MST Time	
fr87i060.fits	"BS 2141"	06:06:08.54	+35:23:15.9		05/30/87	+20:02:09	MST Time	
fr87i061.fits	"BS 2141"	06:06:08.54	+35:23:15.9		05/30/87	+20:04:17	MST Time	
fr87i062.fits	"BS 2141"	06:06:08.54	+35:23:15.9		05/30/87	+20:06:26	MST Time	
fr87i063.fits	"BS 2141"	06:06:08.54	+35:23:15.9		05/30/87	+20:08:34	MST Time	
fr87i064.fits	"BS 2141"	06:06:08.54	+35:23:15.9		05/30/87	+20:10:36	MST Time	
fr87i065.fits	"BS 2141"	06:06:08.54	+35:23:15.9		05/30/87	+20:12:35	MST Time	
fr87i066.fits	"BS 2141"	06:06:08.54	+35:23:15.9		05/30/87	+20:14:58	MST Time	
fr87i067.fits	"BS 2141"	06:06:08.54	+35:23:15.9		05/30/87	+20:17:01	MST Time	
fr87i068.fits	"BS 2141"	06:06:08.54	+35:23:15.9		05/30/87	+20:19:01	MST Time	
fr87i069.fits	"FLAT FIELD"				05/30/87	+20:38:37	MST Time	Clip warming up
fr87i070.fits	DARK				05/31/87	+05:06:38		
fr87i071.fits	FF2	16:41:51.68	+59:30:33.8	R	05/31/87	+05:10:04		Object unknown,RA/DEC from astrometry, Near Draco
fr87i072.fits	FF2	16:41:51.68	+59:30:33.8	R	05/31/87	+05:26:24		Object unknown,RA/DEC from astrometry, Near Draco
fr87i073.fits	DARK				05/31/87	+05:32:26		
fr87i074.fits	FF2	16:41:51.68	+59:30:33.8	"H A"	05/31/87	+05:34:44		Object unknown,RA/DEC from astrometry, Near Draco
fr87i075.fits	FF2	16:41:51.68	+59:30:33.8	"H A"	05/31/87	+05:55:17		Object unknown,RA/DEC from astrometry, Near Draco
fr87i076.fits	DRAF21	16:50:39.35	+60:58:56.1	"H A"	05/31/87	+06:13:47		Object unknown,RA/DEC from astrometry, Near Draco
fr87i077.fits	DRAF21	16:50:39.35	+60:58:56.1	R	05/31/87	+06:46:10		Object unknown,RA/DEC from astrometry, Near Draco
fr87i078.fits	DARK				05/31/87	+06:52:44		
fr87i079.fits	URANUS	17:40:35.74	-23:30:55.5	R	05/31/87	+07:27:06		
fr87i080.fits	URANUS	17:40:35.74	-23:30:55.5	R	05/31/87	+07:30:00		
fr87i081.fits	DARK				05/31/87	+07:31:39		
fr87i082.fits	OBERON	17:40:38.20	-23:30:36.5		05/31/87	+08:32:57		

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fr87i083.fits	OBERON	17:40:38.14	-23:30:36.6		05/31/87	+08:41:29		
fr87i084.fits	OBERON	17:40:38.00	-23:30:36.8		05/31/87	+08:58:40		
fr87i085.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/31/87	+09:47:27		
fr87i086.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/31/87	+09:49:44		
fr87i087.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/31/87	+09:53:07		
fr87i088.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/31/87	+09:54:37		
fr87i089.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/31/87	+09:55:35		
fr87i090.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/31/87	+09:56:34		
fr87i091.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/31/87	+10:04:46		
fr87i092.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/31/87	+10:05:48		
fr87i093.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/31/87	+10:08:35		
fr87i094.fits	OBERON	17:40:37.32	-23:30:37.8	6200	05/31/87	+10:37:21		
fr87i095.fits	OBERON	17:40:37.26	-23:30:37.9	6200	05/31/87	+10:50:08		
fr87i096.fits	OBERON	17:40:37.19	-23:30:38.0	6200	05/31/87	+11:02:47		
fr87i097.fits	"BS 6269"	16:53:25.22	-20:24:56.0	6200	05/31/87	+11:22:58		
fr87i098.fits	"BS 6269"	16:53:25.22	-20:24:56.0	6200	05/31/87	+11:24:46		
fr87i099.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/31/87	+11:26:21		
fr87i100.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/31/87	+11:27:30		
fr87i101.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/31/87	+11:28:24		
fr87i102.fits	"BS 6269"	16:53:25.22	-20:24:56.0		05/31/87	+11:29:33		
fr87i103.fits	"FLAT FIELD"				05/31/87	+11:50:41		
fr87i104.fits	"FLAT FIELD"				05/31/87	+11:52:32		
fr87i105.fits	"FLAT FIELD"				05/31/87	+11:54:41		
fr87i106.fits	"FLAT FIELD"				05/31/87	+11:56:14		
fr87i107.fits	"FLAT FIELD"			R	05/31/87	+12:06:14		
fr87i108.fits	"FLAT FIELD"			R	05/31/87	+12:07:24		
fr87i109.fits	MERCURY	06:12:30.52	+25:30:49.3		06/01/87	+02:24:00		Log RA set at 8:...; ephemeris say 6...; spectra cannot verify. frames 109-119
fr87i110.fits	MERCURY	06:12:32.97	+25:30:46.9		06/01/87	+02:25:44		
fr87i111.fits	MERCURY	06:12:32.97	+25:30:46.9		06/01/87	+02:27:28		
fr87i112.fits	MERCURY	06:12:32.97	+25:30:46.9		06/01/87	+02:29:14		
fr87i113.fits	MERCURY	06:12:32.97	+25:30:46.9		06/01/87	+02:31:46		
fr87i114.fits	MERCURY	06:12:32.97	+25:30:46.9		06/01/87	+02:32:40		
fr87i115.fits	MERCURY	06:12:32.97	+25:30:46.9		06/01/87	+02:33:59		
fr87i116.fits	MERCURY	06:12:35.41	+25:30:44.5		06/01/87	+02:35:53		
fr87i117.fits	MERCURY	06:12:35.41	+25:30:44.5		06/01/87	+02:37:05		
fr87i118.fits	MERCURY	06:12:35.41	+25:30:44.5		06/01/87	+02:38:22		
fr87i119.fits	MERCURY	06:12:35.41	+25:30:44.5		06/01/87	+02:40:22		
fr87i120.fits	"FLAT FIELD (SKY)"				06/01/87	+02:42:08		
fr87i121.fits	Dark				06/01/87	+02:42:54	xName	
fr87i122.fits	"FLAT FIELD (SKY)"				06/01/87	+02:43:47		
fr87i123.fits	"FLAT FIELD (SKY)"				06/01/87	+02:44:33		
fr87i124.fits	"FLAT FIELD (SKY)"				06/01/87	+02:45:21		

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fr87i125.fits	"FLAT FIELD (SKY)"				06/01/87	+02:46:14		
fr87i126.fits	MERCURY	06:12:37.85	+25:30:42.1		06/01/87	+02:47:51		Log RA set at 8:...; ephemeris say 6...; spectra cannot verify. frames 126-138
fr87i127.fits	MERCURY	06:12:37.85	+25:30:42.1		06/01/87	+02:49:10		
fr87i128.fits	MERCURY	06:12:37.85	+25:30:42.1		06/01/87	+02:52:09		
fr87i129.fits	MERCURY	06:12:37.85	+25:30:42.1		06/01/87	+02:53:35		
fr87i130.fits	MERCURY	06:12:37.85	+25:30:42.1		06/01/87	+02:54:33		
fr87i131.fits	MERCURY	06:12:40.30	+25:30:39.7		06/01/87	+02:56:15		
fr87i132.fits	"BS 2141"	06:06:08.54	+35:23:15.9		06/01/87	+03:03:50	xName	Log says Mercury, spectra looks as though its BS2141
fr87i133.fits	"BS 2141"	06:06:08.54	+35:23:15.9		06/01/87	+03:05:48		
fr87i134.fits	"BS 2141"	06:06:08.54	+35:23:15.9		06/01/87	+03:07:56		
fr87i135.fits	"BS 2141"	06:06:08.54	+35:23:15.9		06/01/87	+03:10:43		
fr87i136.fits	"BS 2141"	06:06:08.54	+35:23:15.9		06/01/87	+03:12:34		
fr87i137.fits	"BS 2141"	06:06:08.54	+35:23:15.9		06/01/87	+03:14:23		
fr87i138.fits	"BS 2141"	06:06:08.54	+35:23:15.9		06/01/87	+03:16:38		
fr87i139.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+03:41:59		Log RA set at 11:...; ephemeris say 9...; spectra cannot verify. frames 139-162
fr87i140.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+03:50:52		
fr87i141.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+03:52:15		
fr87i142.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:04:45		
fr87i143.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:08:06		
fr87i144.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:10:21		
fr87i145.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:12:40		
fr87i146.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:14:12		
fr87i147.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:16:28		
fr87i148.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:17:48		
fr87i149.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:21:51		
fr87i150.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:23:21		
fr87i151.fits								Log is written
fr87i152.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:27:07		
fr87i153.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:28:31		
fr87i154.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:30:59		
fr87i155.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:32:23		
fr87i156.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:33:46		
fr87i157.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:36:15		
fr87i158.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:38:59		
fr87i159.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:40:27		
fr87i160.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:42:17		
fr87i161.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:43:39		
fr87i162.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/01/87	+05:45:01		
fr87i163.fits	FLAT2	16:41:29.91	+59:26:39.1	R	06/01/87	+07:19:59		Object unknown,RA/DEC from astrometry, Near Draco
fr87i164.fits	FLAT2	16:41:29.91	+59:26:39.1	"H A"	06/01/87	+07:28:15		Object unknown,RA/DEC from astrometry, Near Draco
fr87i165.fits	FLAT2	16:41:29.91	+59:26:39.1	"H A"	06/01/87	+07:40:23		Object unknown,RA/DEC from astrometry, Near Draco

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fr87i166.fits	DRAF21	16:50:39.35	+60:58:56.1	"H A"	06/01/87	+08:07:22		Object unknown,RA/DEC from astrometry, Near Draco
fr87i167.fits	DRAF21	16:50:39.35	+60:58:56.1	"H A"	06/01/87	+08:39:50		Object unknown,RA/DEC from astrometry, Near Draco
fr87i168.fits	DARK				06/01/87	+09:11:50		
fr87i169.fits	DARK				06/01/87	+09:13:27		
fr87i170.fits	DARK				06/01/87	+09:14:04		
fr87i171.fits	"DRA F21"	16:50:39.35	+60:58:56.1	R	06/01/87	+09:15:58		Object unknown,RA/DEC from astrometry, Near Draco
fr87i172.fits	"FLAT 2"	16:41:52.53	+59:29:18.3	"H A"	06/01/87	+09:27:16		Object unknown,RA/DEC from astrometry, Near Draco
fr87i173.fits	"LDS 749 B"	21:32:16.24	+00:15:14.4	R	06/01/87	+10:29:12	xFilter	
fr87i174.fits	"LDS 749 B"	21:32:16.24	+00:15:14.4	R	06/01/87	+10:19:07		
fr87i175.fits	"LDS 749 B"	21:32:16.24	+00:15:14.4	R	06/01/87	+10:30:32	xFilter	
fr87i176.fits	"LDS 749 B"	21:32:16.24	+00:15:14.4	R	06/01/87	+10:31:45	xFilter	
fr87i177.fits	"LDS 749 B"	21:32:16.24	+00:15:14.4	"H A"	06/01/87	+10:34:00		
fr87i178.fits	"LDS 749 B"	21:32:16.24	+00:15:14.4	"H A"	06/01/87	+10:35:44		
fr87i179.fits	"LDS 749 B"	21:32:16.24	+00:15:14.4	"H A"	06/01/87	+10:37:15		
fr87i180.fits	G 70-16	00:49:09.90	+05:23:19.0	R	06/01/87	+10:44:56	xName	G 70-16
fr87i181.fits	G 70-16	00:49:09.90	+05:23:19.0	R	06/01/87	+10:53:36	xName	G 70-16
fr87i182.fits	G 70-16	00:49:09.90	+05:23:19.0	R	06/01/87	+11:01:35	xName	G 70-16
fr87i183.fits	G 70-16	00:49:09.90	+05:23:19.0	R	06/01/87	+11:02:54	xName	G 70-16
fr87i184.fits	G 70-16	00:49:09.90	+05:23:19.0	"H A"	06/01/87	+11:05:09	xName	G 70-16
fr87i185.fits	G 70-16	00:49:09.90	+05:23:19.0	"H A"	06/01/87	+11:11:48	xName	G 70-16
fr87i186.fits	DARK				06/01/87	+11:30:16		
fr87i187.fits	DARK				06/01/87	+11:30:57		
fr87i188.fits	MERCURY	06:17:00.71	+25:26:12.0		06/01/87	+21:03:18		
fr87i189.fits	MERCURY	06:17:03.05	+25:26:09.3		06/01/87	+21:09:43		
fr87i190.fits	MERCURY	06:17:03.05	+25:26:09.3		06/01/87	+21:12:55		
fr87i191.fits	MERCURY	06:17:05.39	+25:26:06.5		06/01/87	+21:16:18		
fr87i192.fits	MERCURY	06:17:05.39	+25:26:06.5		06/01/87	+21:17:23		
fr87i193.fits	MERCURY	06:17:05.39	+25:26:06.5		06/01/87	+21:19:04		
fr87i194.fits	MERCURY	06:17:05.39	+25:26:06.5		06/01/87	+21:22:15		
fr87i195.fits	MERCURY	06:17:05.39	+25:26:06.5		06/01/87	+21:23:26		
fr87i196.fits	MERCURY	06:17:05.39	+25:26:06.5		06/01/87	+21:24:58		
fr87i197.fits	MERCURY	06:17:07.73	+25:26:03.7		06/01/87	+21:33:12		
fr87i198.fits	MERCURY	06:17:07.73	+25:26:03.7		06/01/87	+21:34:18		
fr87i199.fits	MERCURY	06:17:10.06	+25:26:01.0		06/01/87	+21:35:22		
fr87i200.fits	MERCURY	06:17:10.06	+25:26:01.0		06/01/87	+21:39:04		
fr87i201.fits	MERCURY	06:17:10.06	+25:26:01.0		06/01/87	+21:40:08		
fr87i202.fits	MERCURY	06:17:10.06	+25:26:01.0		06/01/87	+21:42:25		
fr87i203.fits	MERCURY	06:17:10.06	+25:26:01.0		06/01/87	+21:43:23		
fr87i204.fits	MERCURY	06:17:12.40	+25:25:58.2		06/01/87	+21:45:36		
fr87i205.fits	MERCURY	06:17:12.40	+25:25:58.2		06/01/87	+21:47:08		
fr87i206.fits	MERCURY	06:17:12.40	+25:25:58.2		06/01/87	+21:49:23		
fr87i207.fits	Alpha Gem	07:34:35.87	+31:53:17.8		06/01/87	+22:30:31		Alpha Gem
fr87i208.fits	Alpha Gem	07:34:35.87	+31:53:17.8		06/01/87	+22:31:53		Alpha Gem

File	Object	RA set	DEC set	Filter	Date	UT-STRT	Log Differences	Comments (N left E up, rotate 90 CC)
fr87i209.fits	Alpha Gem	07:34:35.87	+31:53:17.8		06/01/87	+22:32:52		Alpha Gem
fr87i210.fits	Alpha Gem	07:34:35.87	+31:53:17.8		06/01/87	+22:47:32		Alpha Gem
fr87i211.fits	Alpha Gem	07:34:35.87	+31:53:17.8		06/01/87	+22:51:15		Alpha Gem
fr87i212.fits	Alpha Gem	07:34:35.87	+31:53:17.8		06/01/87	+22:52:07		Alpha Gem
fr87i213.fits	Alpha Gem	07:34:35.87	+31:53:17.8		06/01/87	+22:53:02		Alpha Gem
fr87i214.fits	Alpha Gem	07:34:35.87	+31:53:17.8		06/01/87	+22:54:17		Alpha Gem
fr87i215.fits	Alpha Gem	07:34:35.87	+31:53:17.8		06/01/87	+22:56:46		Alpha Gem
fr87i216.fits	Alpha Gem	07:34:35.87	+31:53:17.8		06/01/87	+22:57:40		Alpha Gem
fr87i217.fits	Alpha Gem	07:34:35.87	+31:53:17.8		06/01/87	+22:58:25		Alpha Gem
fr87i218.fits	FF				06/02/87	+02:15:15		
fr87i219.fits	FF				06/02/87	+02:16:48		
fr87i220.fits	FF				06/02/87	+02:18:16		
fr87i221.fits	FF				06/02/87	+02:19:57		
fr87i222.fits	FF				06/02/87	+02:21:29		
fr87i223.fits	MERCURY	06:18:15.46	+25:24:39.2		06/02/87	+02:23:24		Log RA set at 8:...; ephemeris say 6...; spectra cannot verify. frames 223-233
fr87i224.fits	MERCURY	06:18:15.46	+25:24:39.2		06/02/87	+02:24:49		
fr87i225.fits	MERCURY	06:18:17.80	+25:24:26.2		06/02/87	+02:25:57		
fr87i226.fits	MERCURY	06:18:17.80	+25:24:26.2		06/02/87	+02:28:52		
fr87i227.fits	MERCURY	06:18:17.80	+25:24:26.2		06/02/87	+02:30:29		
fr87i228.fits	MERCURY	06:18:17.80	+25:24:26.2		06/02/87	+02:31:25		
fr87i229.fits	MERCURY	06:18:17.80	+25:24:26.2		06/02/87	+02:32:39		
fr87i230.fits	MERCURY	06:18:20.14	+25:24:33.2		06/02/87	+02:36:02		
fr87i231.fits	MERCURY	06:18:20.14	+25:24:33.2		06/02/87	+02:37:14		
fr87i232.fits	MERCURY	06:18:20.14	+25:24:33.2		06/02/87	+02:38:19		
fr87i233.fits	MERCURY	06:18:24.82	+25:24:27.1		06/02/87	+02:58:01		
fr87i234.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/02/87	+04:22:36		Log RA set at 16:...; ephemeris say 14...; spectra cannot verify. frames 234-247
fr87i235.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/02/87	+04:23:56		
fr87i236.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/02/87	+04:27:32		
fr87i237.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/02/87	+04:29:03		
fr87i238.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/02/87	+05:04:17		
fr87i239.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/02/87	+05:05:42		
fr87i240.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/02/87	+05:07:05		
fr87i241.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/02/87	+05:08:18		
fr87i242.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/02/87	+05:09:18		
fr87i243.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/02/87	+05:10:24		
fr87i244.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/02/87	+05:11:40		
fr87i245.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/02/87	+05:12:39		
fr87i246.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/02/87	+05:16:01		
fr87i247.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/02/87	+05:17:02		
fr87i248.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/02/87	+05:28:02		Log RA set at 11:...; ephemeris say 9...; spectra cannot verify. frames 248-255
fr87i249.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/02/87	+05:29:02		
fr87i250.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/02/87	+05:34:38		
fr87i251.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/02/87	+05:37:04		
fr87i252.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/02/87	+05:38:29		

File	Object	RA set	DEC set	Filter	Date	UT-STRT	Log Differences	Comments (N left E up, rotate 90 CC)
fr87i253.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/02/87	+05:39:47		
fr87i254.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/02/87	+05:44:24		
fr87i255.fits	"BS 3626"	09:08:47.33	+26:37:44.8		06/02/87	+05:45:33		
fr87i256.fits	DARK				06/02/87	+07:13:42		
fr87i257.fits	DARK				06/02/87	+07:14:28		
fr87i258.fits	FF2	16:41:51.68	+59:30:33.8	"H A"	06/02/87	+07:20:14		Object unknown,RA/DEC from astrometry, Near Draco
fr87i259.fits	FF2	16:41:51.68	+59:30:33.8	R	06/02/87	+07:51:52		Object unknown,RA/DEC from astrometry, Near Draco
fr87i260.fits	"DRA F22"	16:50:39.22	+60:53:15.9	R	06/02/87	+08:02:12		Object unknown,RA/DEC from astrometry, Near Draco
fr87i261.fits	"DRA F22"	16:50:39.22	+60:53:15.9	"H A"	06/02/87	+08:14:59		Object unknown,RA/DEC from astrometry, Near Draco
fr87i262.fits	DARK				06/02/87	+08:47:23		
fr87i263.fits	DARK				06/02/87	+08:48:17		
fr87i264.fits	"DRA F22"	16:50:39.22	+60:53:15.9	"H A"	06/02/87	+08:49:47		Object unknown,RA/DEC from astrometry, Near Draco
fr87i265.fits	"DRA F22"	16:50:39.22	+60:53:15.9	"H A"	06/02/87	+09:22:04		Object unknown,RA/DEC from astrometry, Near Draco
fr87i266.fits	"DRA F22"	16:50:39.22	+60:53:15.9	"H A"	06/02/87	+09:53:36		Object unknown,RA/DEC from astrometry, Near Draco
fr87i267.fits	"DRA F22"	16:50:39.22	+60:53:15.9	"H A"	06/02/87	+10:25:26		Object unknown,RA/DEC from astrometry, Near Draco
fr87i268.fits	DARK				06/02/87	+10:57:18		
fr87i269.fits	DARK				06/02/87	+10:58:00		
fr87i270.fits	DARK				06/02/87	+10:58:59		
fr87i271.fits	MERCURY	06:22:20.32	+25:19:13.8		06/02/87	+20:04:03		
fr87i272.fits	MERCURY	06:22:29.26	+25:19:00.6		06/02/87	+20:36:11		
fr87i273.fits	MERCURY	06:22:29.26	+25:19:00.6		06/02/87	+20:38:53		
fr87i274.fits	MERCURY	06:22:31.49	+25:18:57.3		06/02/87	+20:46:31		
fr87i275.fits	MERCURY	06:22:31.49	+25:18:57.3		06/02/87	+20:51:20		
fr87i276.fits	MERCURY	06:22:33.72	+25:18:54.0		06/02/87	+20:58:19		
fr87i277.fits	MERCURY	06:22:35.96	+25:18:50.7		06/02/87	+21:06:35		
fr87i278.fits	MERCURY	06:22:35.96	+25:18:50.7		06/02/87	+21:11:18		
fr87i279.fits	MERCURY	06:22:38.19	+25:18:47.3		06/02/87	+21:20:41		
fr87i280.fits	MERCURY	06:22:40.42	+25:18:44.0		06/02/87	+21:30:16		
fr87i281.fits	MERCURY	06:22:40.42	+25:18:44.0		06/02/87	+21:33:26		
fr87i282.fits	MERCURY	06:22:42.65	+25:18:40.6		06/02/87	+21:35:55		
fr87i283.fits	Dark				06/02/87	+21:38:44	xName	
fr87i284.fits	DARK				06/02/87	+21:40:05		
fr87i285.fits	"FLAT FIELD"				06/02/87	+21:42:31		
fr87i286.fits	"FLAT FIELD"				06/02/87	+21:43:45		
fr87i287.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/02/87	+22:04:02		
fr87i288.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/02/87	+22:06:58		
fr87i289.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/02/87	+22:10:55		
fr87i290.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/02/87	+22:14:36		
fr87i291.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/02/87	+22:20:08		
fr87i292.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/02/87	+22:25:56		
fr87i293.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/02/87	+22:30:52		

File	Object	RA set	DEC set	Filter	Date	UT-STRT	Log Differences	Comments (N left E up, rotate 90 CC)
fr87i294.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/02/87	+22:37:16		
fr87i295.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/02/87	+22:42:09		
fr87i296.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/02/87	+22:44:31		
fr87i297.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/02/87	+22:47:27		
fr87i298.fits	"FLAT FIELD"				06/03/87	+02:17:45		
fr87i299.fits	"FLAT FIELD"				06/03/87	+02:18:57		
fr87i300.fits	"FLAT FIELD"				06/03/87	+02:19:42		
fr87i301.fits	MERCURY	06:23:47.24	+25:16:58.9		06/03/87	+02:29:11		Log RA set at 8:...; ephemeris say 6...; spectra cannot verify. frames 301-309
fr87i302.fits	MERCURY	06:23:47.24	+25:16:58.9		06/03/87	+02:30:33		
fr87i303.fits	MERCURY	06:23:47.24	+25:16:58.9		06/03/87	+02:31:36		
fr87i304.fits	MERCURY	06:23:49.47	+25:16:55.3		06/03/87	+02:35:05		
fr87i305.fits	MERCURY	06:23:49.47	+25:16:55.3		06/03/87	+02:36:16		
fr87i306.fits	MERCURY	06:23:49.47	+25:16:55.3		06/03/87	+02:37:24		
fr87i307.fits	MERCURY	06:23:49.47	+25:16:55.3		06/03/87	+02:38:36		
fr87i308.fits	MERCURY	06:23:49.47	+25:16:55.3		06/03/87	+02:39:56		
fr87i309.fits	MERCURY	06:23:49.47	+25:16:55.3		06/03/87	+02:41:00		
fr87i310.fits								Log is written
fr87i311.fits	DARK				06/03/87	+02:45:21		
fr87i312.fits	DARK				06/03/87	+02:44:25		
fr87i313.fits	"BS 2141"	06:06:08.54	+35:23:15.9		06/03/87	+03:01:15		Log RA set at 8:...; ephemeris say 6...; spectra cannot verify. frames 313-317
fr87i314.fits	"BS 2141"	06:06:08.54	+35:23:15.9		06/03/87	+03:03:41		
fr87i315.fits	"BS 2141"	06:06:08.54	+35:23:15.9		06/03/87	+03:06:00		
fr87i316.fits	"BS 2141"	06:06:08.54	+35:23:15.9		06/03/87	+03:07:51		
fr87i317.fits	"BS 2141"	06:06:08.54	+35:23:15.9		06/03/87	+03:10:21		
fr87i318.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/03/87	+03:39:11		
fr87i319.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/03/87	+03:41:05		
fr87i320.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/03/87	+05:13:51		
fr87i321.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/03/87	+05:15:33		
fr87i322.fits	Dark				06/03/87	+05:19:14	xName	
fr87i323.fits	DARK				06/03/87	+05:21:28		
fr87i324.fits	URANUS	17:40:05.43	-23:30:43.4	R	06/03/87	+06:24:27		
fr87i325.fits	URANUS	17:40:05.43	-23:30:43.4	R	06/03/87	+06:32:06		
fr87i326.fits	OBERON	17:40:06.73	-23:31:18.5		06/03/87	+07:38:09		
fr87i327.fits	OBERON	17:40:06.65	-23:31:18.6		06/03/87	+07:49:48		
fr87i328.fits	DARK				06/03/87	+08:01:21		
fr87i329.fits	OBERON	17:40:06.49	-23:31:18.7		06/03/87	+08:09:01		
fr87i330.fits	OBERON	17:40:06.24	-23:31:18.8		06/03/87	+08:38:52		
fr87i331.fits	OBERON	17:40:06.08	-23:31:18.9		06/03/87	+08:56:49		
fr87i332.fits	OBERON	17:40:05.92	-23:31:19.0		06/03/87	+09:21:37		
fr87i333.fits	BS 6269	16:53:25.22	-20:24:56.0		06/03/87	+09:24:36	xName	BS 6269
fr87i334.fits	BS 6269	16:53:25.22	-20:24:56.0		06/03/87	+09:25:43	xName	BS 6269
fr87i335.fits	BS 6269	16:53:25.22	-20:24:56.0		06/03/87	+09:26:58	xName	BS 6269
fr87i336.fits	BS 6269	16:53:25.22	-20:24:56.0		06/03/87	+09:30:01	xName	BS 6269
fr87i337.fits	Dark				06/03/87	+09:31:36	xName	
fr87i338.fits	"BS 6269"	16:53:25.22	-20:24:56.0		06/03/87	+10:20:45		



File	Object	RA set	DEC set	Filter	Date	UT-STRT	Log Differences	Comments (N left E up, rotate 90 CC)
fr87i339.fits	"BS 6269"	16:53:25.22	-20:24:56.0		06/03/87	+10:24:35		
fr87i340.fits	"BS 6269"	16:53:25.22	-20:24:56.0		06/03/87	+10:28:03		
fr87i341.fits	"BS 6269"	16:53:25.22	-20:24:56.0		06/03/87	+10:29:36		
fr87i342.fits	OBERON	17:40:05.26	-23:31:19.4		06/03/87	+10:37:08		
fr87i343.fits	OBERON	17:40:05.10	-23:31:19.5		06/03/87	+10:55:38		
fr87i344.fits	DARK				06/03/87	+11:19:28		
fr87i345.fits	DARK				06/03/87	+11:20:15		
fr87i346.fits	"FLAT FIELD"				06/03/87	+11:49:03		
fr87i347.fits	"FLAT FIELD"				06/03/87	+11:50:30		
fr87i348.fits	"FLAT FIELD"				06/03/87	+11:52:01		
fr87i349.fits	MERCURY	06:27:51.10	+25:10:14.4		06/03/87	+21:00:27		
fr87i350.fits	MERCURY	06:27:51.10	+25:10:14.4		06/03/87	+21:02:11		
fr87i351.fits	MERCURY	06:27:51.10	+25:10:14.4		06/03/87	+21:04:34		
fr87i352.fits	MERCURY	06:27:53.22	+25:10:10.5		06/03/87	+21:05:37		
fr87i353.fits	MERCURY	06:27:53.22	+25:10:10.5		06/03/87	+21:06:42		
fr87i354.fits	MERCURY	06:27:53.22	+25:10:10.5		06/03/87	+21:07:40		
fr87i355.fits	MERCURY	06:27:53.22	+25:10:10.5		06/03/87	+21:08:34		
fr87i356.fits	MERCURY	06:27:55.35	+25:10:06.6		06/03/87	+21:15:07		
fr87i357.fits	MERCURY	06:27:55.35	+25:10:06.6		06/03/87	+21:17:40		
fr87i358.fits	MERCURY	06:27:55.35	+25:10:06.6		06/03/87	+21:19:03		
fr87i359.fits	MERCURY	06:27:55.35	+25:10:06.6		06/03/87	+21:23:37		
fr87i360.fits	MERCURY	06:27:55.35	+25:10:06.6		06/03/87	+21:24:54		
fr87i361.fits	MERCURY	06:27:57.47	+25:10:02.7		06/03/87	+21:25:49		
fr87i362.fits	MERCURY	06:27:57.47	+25:10:02.7		06/03/87	+21:27:13		
fr87i363.fits	MERCURY	06:27:57.47	+25:10:02.7		06/03/87	+21:28:18		
fr87i364.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/03/87	+21:41:26		
fr87i365.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/03/87	+21:43:31		
fr87i366.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/03/87	+21:58:52		
fr87i367.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/03/87	+22:16:54		
fr87i368.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/03/87	+22:18:16		
fr87i369.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/03/87	+22:21:33		
fr87i370.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/03/87	+22:22:51		
fr87i371.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/03/87	+22:26:18		
fr87i372.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/03/87	+22:29:04		
fr87i373.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/03/87	+22:31:03		
fr87i374.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/03/87	+22:33:34		
fr87i375.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/03/87	+22:35:05		
fr87i376.fits	"BS 2891"	07:34:35.64	+31:53:18.5		06/03/87	+22:44:47		
fr87i377.fits	"FLAT FIELD"				06/04/87	+00:01:23		
fr87i378.fits	"FLAT FIELD"				06/04/87	+00:02:16		
fr87i379.fits	DARK				06/04/87	+00:06:44		
fr87i380.fits	DARK				06/04/87	+00:07:46		
fr87i381.fits	"FLAT FIELD"				06/04/87	+02:17:08		
fr87i382.fits	"FLAT FIELD"				06/04/87	+02:18:01		
fr87i383.fits	"FLAT FIELD"				06/04/87	+02:18:47		
fr87i384.fits	"FLAT FIELD"				06/04/87	+02:20:02		

File	Object	RA set	DEC set	Filter	Date	UT-STRT	Log Differences	Comments (N left E up, rotate 90 CC)
fr87i385.fits	MERCURY	06:29:07.34	+25:07:49.0		06/04/87	+02:56:59		Log RA set at 8:...; ephemeris say 6...; spectra cannot verify. frames 385-387
fr87i386.fits	MERCURY	06:29:07.34	+25:07:49.0		06/04/87	+02:58:45		
fr87i387.fits	MERCURY	06:29:07.34	+25:07:49.0		06/04/87	+02:59:55		
fr87i388.fits	Dark				06/04/87	+03:00:45	xName	
fr87i389.fits	"BS 2141"	06:06:08.54	+35:23:15.9		06/04/87	+03:16:25		Log RA set at 7:...; ephemeris say 6...; spectra cannot verify. frames 389-392
fr87i390.fits	"BS 2141"	06:06:08.54	+35:23:15.9		06/04/87	+03:18:28		
fr87i391.fits	"BS 2141"	06:06:08.54	+35:23:15.9		06/04/87	+03:20:20		
fr87i392.fits	"BS 2141"	06:06:08.54	+35:23:15.9		06/04/87	+03:22:39		
fr87i393.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/04/87	+03:58:37		
fr87i394.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/04/87	+04:01:17		
fr87i395.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/04/87	+04:03:15		
fr87i396.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/04/87	+04:06:06		
fr87i397.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/04/87	+04:08:50		
fr87i398.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/04/87	+05:19:19		
fr87i399.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/04/87	+05:22:49		
fr87i400.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/04/87	+05:25:35		
fr87i401.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/04/87	+05:31:55		Log RA set at 17:...; ephemeris say 14...; spectra cannot verify. frames 401-402
fr87i402.fits	"BS 5534"	14:50:15.86	+23:54:42.7		06/04/87	+05:36:21		

Above output obtained by running: `hselect fr*.fits $l,exptime,object,ra,dec,filter,date,ut-strl yes > 87i_hselect`  
The Log Differences and Comments columns are the observations noted after comparing the FITS header with log sheets.