

Table 1

File	Object	RA set	DEC set	Filter	Date	UT-STRT	Log Differences	Comments (N left E up, rotate 90 CCW)
cr89a073.fits	YANR2			OG530	01/15/89	+13:16:09		No log; unknown object
cr89a074.fits	YANR2			OG530	01/15/89	+13:22:53		No log; unknown object
ff89aij1.fits	"FLAT FIELD"			IJ	"Fri Jan 13 1989"	07:13:47		No log
ff89aik1.fits	"FLAT FIELD"			IK	"Fri Jan 13 1989"	07:08:20		No log
ff89ar1.fits	"FLAT FIELD"			R	"Fri Jan 13 1989"	07:01:50		No log
ff89avr1.fits	"FLAT FIELD"			V+R	"Fri Jan 13 1989"	06:54:37		No log
fr89a001.fits	Flat Field			v+r	"Thu Jan 12 1989"	06:17:21		Unknown object; In log as "field 1s"
fr89a002.fits	Flat Field			v+r	"Thu Jan 12 1989"	06:35:58		Unknown object; In log as "field 2s"
fr89a003.fits	Flat Field			v+r	"Thu Jan 12 1989"	06:48:50		Unknown object; In log as "field 3s"
fr89a004.fits	Flat Field			ik	"Thu Jan 12 1989"	07:05:46		Unknown object; In log as "field 1s"
fr89a005.fits	Flat Field			ij	"Thu Jan 12 1989"	07:20:05		Unknown object; In log as "field 1s"
fr89a006.fits	Flat Field			ij	"Thu Jan 12 1989"	07:34:16		Unknown object; In log as "F2s"
fr89a007.fits	Flat Field			ik	"Thu Jan 12 1989"	07:49:02		Unknown object; In log as "F2s"
fr89a008.fits	SA 76-280	08:21:00.96	+14:45:25.2	IK	"Thu Jan 12 1989"	08:21:35	xName	
fr89a009.fits	SA 76-280	08:21:00.96	+14:45:25.2	IK	"Thu Jan 12 1989"	08:23:25	xName	
fr89a010.fits	SA 76-280	08:21:00.96	+14:45:25.2	IJ	"Thu Jan 12 1989"	08:25:56	xName	
fr89a011.fits	SA 76-280	08:21:00.96	+14:45:25.2	IJ	"Thu Jan 12 1989"	08:27:42	xName	
fr89a012.fits	SA 76-280	08:21:00.96	+14:45:25.2	R	"Thu Jan 12 1989"	08:31:40	xName	
fr89a013.fits	SA 76-280	08:21:00.96	+14:45:25.2	R	"Thu Jan 12 1989"	08:33:20	xName	
fr89a014.fits	SA 76-280	08:21:00.96	+14:45:25.2	V+R	"Thu Jan 12 1989"	08:34:50	xName	
fr89a015.fits	SA 76-280	08:21:00.96	+14:45:25.2	V+R	"Thu Jan 12 1989"	08:36:25	xName	
fr89a016.fits	Flat Field			ik	"Thu Jan 12 1989"	08:42:12		Unknown object; in log as "F3"

File	Object	RA set	DEC set	Filter	Date	UT-STRT	Log Differences	Comments (N left E up, rotate 90 CCW)
fr89a018.fits	Flat Field			ij	"Thu Jan 12 1989"	08:55:46		Unknown object; in log as "F3"
fr89a019.fits	Flat Field			ij	"Thu Jan 12 1989"	09:17:25		Unknown object; in log as "F4"
fr89a020.fits	Flat Field			ik	"Thu Jan 12 1989"	09:30:11		Unknown object; in log as "F4"
fr89a021.fits	Flat Field			ik	"Thu Jan 12 1989"	09:44:09		Unknown object; in log as "F5"
fr89a022.fits	Flat Field			ij	"Thu Jan 12 1989"	09:56:58		Unknown object; in log as "F5"
fr89a023.fits	Flat Field			v+r	"Thu Jan 12 1989"	10:31:13		Unknown object; in log as "F1"
fr89a024.fits	Flat Field			v+r	"Thu Jan 12 1989"	10:50:42		Unknown object; in log as "F2"
fr89a025.fits	Flat Field			v+r	"Thu Jan 12 1989"	11:04:36		Unknown object; in log as "F3"
fr89a026.fits	Flat Field			ij	"Thu Jan 12 1989"	11:21:28		Unknown object; in log as "F6"
fr89a027.fits	Flat Field			ik	"Thu Jan 12 1989"	11:36:16		Unknown object; in log as "F6"
fr89a028.fits	DARK			V+R	"Fri Jan 13 1989"	06:41:40		
fr89a029.fits	DARK			V+R	"Fri Jan 13 1989"	06:46:29		
fr89a030.fits	Flat Field			V+R	"Fri Jan 13 1989"	06:54:37	xName	
fr89a031.fits	Flat Field			V+R	"Fri Jan 13 1989"	06:56:10	xName	
fr89a032.fits	Flat Field			V+R	"Fri Jan 13 1989"	06:57:09	xName	
fr89a033.fits	Flat Field			V+R	"Fri Jan 13 1989"	06:57:51	xName	
fr89a034.fits	Flat Field			R	"Fri Jan 13 1989"	07:01:50		
fr89a035.fits	Flat Field			R	"Fri Jan 13 1989"	07:03:20		
fr89a036.fits	Flat Field			R	"Fri Jan 13 1989"	07:04:11		
fr89a037.fits	Flat Field			R	"Fri Jan 13 1989"	07:04:53		
fr89a038.fits	Flat Field			IK	"Fri Jan 13 1989"	07:08:20		

File	Object	RA set	DEC set	Filter	Date	UT-STRT	Log Differences	Comments (N left E up, rotate 90 CCW)
fr89a039.fits	Flat Field			IK	"Fri Jan 13 1989"	07:09:51		
fr89a040.fits	Flat Field			IK	"Fri Jan 13 1989"	07:10:36		
fr89a041.fits	Flat Field			IK	"Fri Jan 13 1989"	07:11:21		
fr89a042.fits	Flat Field			IJ	"Fri Jan 13 1989"	07:13:47		
fr89a043.fits	Flat Field			IJ	"Fri Jan 13 1989"	07:15:01		
fr89a044.fits	Flat Field			IJ	"Fri Jan 13 1989"	07:15:47		
fr89a045.fits	Flat Field			IJ	"Fri Jan 13 1989"	07:16:33		
fr89a046.fits	C/1989 A1 Yanaka	14:10:29.24	+13:06:37.53	V+R	"Fri Jan 13 1989"	12:04:32	xName	Tycho-2 908-694-1 is one of the stars in the field found using <a href="#">astrometry.net</a> . RA/DEC obtained using <a href="#">astrometry.net</a> and field matches.
fr89a047.fits	C/1989 A1 Yanaka			V+R	"Fri Jan 13 1989"	12:58:47	xName	Unknown object;
fr89a048.fits	FF			V+R	"Sat Jan 14 1989"	13:07:10	xName	Couldn't get RA/DEC from <a href="#">astrometry.net</a> ; Listed as Cert or Cent in log
fr89a049.fits	SA 76-280	08:21:00.96	+14:45:25.2	V+R	"Sun Jan 15 1989"	08:39:02	xName	
fr89a050.fits	SA 76-280	08:21:00.96	+14:45:25.2	V+R	"Sun Jan 15 1989"	08:42:32	xName	
fr89a051.fits	SA 76-280	08:21:00.96	+14:45:25.2	R	"Sun Jan 15 1989"	08:33:02	xName; xFilter	
fr89a052.fits	SA 76-280	08:21:00.96	+14:45:25.2	IK	"Sun Jan 15 1989"	08:34:29	xName; xFilter	
fr89a053.fits	SA 76-280	08:21:00.96	+14:45:25.2	IK	"Sun Jan 15 1989"	08:36:37	xName	
fr89a055.fits	SA 76-280	08:21:00.96	+14:45:25.2	V+R	"Sun Jan 15 1989"	08:45:55	xName	
fr89a056.fits	SA 76-280	08:21:00.96	+14:45:25.2	V+R	"Sun Jan 15 1989"	08:46:43	xName	
fr89a057.fits	SA 76-280	08:21:00.96	+14:45:25.2	R	"Sun Jan 15 1989"	08:47:45	xName	
fr89a058.fits	SA 76-280	08:21:00.96	+14:45:25.2	R	"Sun Jan 15 1989"	08:48:42	xName	
fr89a059.fits	SA 76-280	08:21:00.96	+14:45:25.2	IK	"Sun Jan 15 1989"	08:49:42	xName	
fr89a060.fits	SA 76-280	08:21:00.96	+14:45:25.2	IK	"Sun Jan 15 1989"	08:50:29	xName	

File	Object	RA set	DEC set	Filter	Date	UT-STRT	Log Differences	Comments (N left E up, rotate 90 CCW)
fr89a061.fits	SA 76-280	08:21:00.96	+14:45:25.2	IJ	"Sun Jan 15 1989"	08:51:29	xName	
fr89a062.fits	SA 76-280	08:21:00.96	+14:45:25.2	IJ	"Sun Jan 15 1989"	08:52:18	xName	
fr89a063.fits	SA 76-280	08:21:00.96	+14:45:25.2	V+R	"Sun Jan 15 1989"	08:55:29	xName	
fr89a064.fits	SA 76-280	08:21:00.96	+14:45:25.2	R	"Sun Jan 15 1989"	08:57:38	xName	
fr89a065.fits	SA 76-280	08:21:00.96	+14:45:25.2	R	"Sun Jan 15 1989"	09:00:23	xName	
fr89a066.fits	SA 76-280	08:21:00.96	+14:45:25.2	V+R	"Sun Jan 15 1989"	09:02:45	xName	
fr89a067.fits	SAO 98464	09:16:07.68	+14:07:33.2	IK	"Sun Jan 15 1989"	09:15:34	xName	RA/DEC obtained using astrometry.net and field matches. SAO 98464 is the star in the field
fr89a068.fits	Flat Field			IK	"Sun Jan 15 1989"	09:18:50		
fr89a069.fits	Flat Field			IJ	"Sun Jan 15 1989"	09:32:08		
fr89a070.fits	Flat Field			IJ	"Sun Jan 15 1989"	09:45:47		
fr89a071.fits	Flat Field			IK	"Sun Jan 15 1989"	09:59:27		
fr89a072.fits	Flat Field			IK	"Sun Jan 15 1989"	10:12:15		
fr89a073.fits	Flat Field			IJ	"Sun Jan 15 1989"	10:24:59		
fr89a074.fits	Comet C/ 1989 A1 (Yanaka)	14:14:14.84	+13:51:48.6	V+R	"Sun Jan 15 1989"	12:44:26	xName	Only name listed in log;
fr89a075.fits	Comet C/ 1989 A1 (Yanaka)	14:14:15.22	+13:51:53.3	V+R	"Sun Jan 15 1989"	12:48:45		Only name listed in log;
fr89a076.fits	C/1988 Y1 Yanaka	14:37:19.31	-23:05:18.9	V+R	"Sun Jan 15 1989"	13:23:24		Time is ahead by a few minutes; Only name listed in log;
fr89a077.fits	C/1988 Y1 Yanaka	14:37:14.30	-23:06:13.9	V+R	"Sun Jan 15 1989"	13:23:24		Only name listed in log;
fr89a078.fits	C/1988 Y1 Yanaka	14:37:11.80	-23:06:41.3	V+R	"Sun Jan 15 1989"	13:30:54		Only name listed in log;
fr89a079.fits	Flat Field			IJ	"Sun Jan 15 1989"	13:44:47		
fr89a080.fits	Flat Field			IJ	"Sun Jan 15 1989"	13:46:14		
fr89a081.fits	Flat Field			IJ	"Sun Jan 15 1989"	13:47:51		

File	Object	RA set	DEC set	Filter	Date	UT-STRT	Log Differences	Comments (N left E up, rotate 90 CCW)
fr89a082.fits	Flat Field			IJ	"Sun Jan 15 1989"	13:48:41		
fr89a083.fits	Flat Field			IJ	"Sun Jan 15 1989"	13:49:37		
fr89a084.fits	Flat Field			IJ	"Sun Jan 15 1989"	13:49:37		
fr89a085.fits	Flat Field			IK	"Sun Jan 15 1989"	13:53:41		
fr89a086.fits	Flat Field			IK	"Sun Jan 15 1989"	13:54:46		
fr89a087.fits	Flat Field			IK	"Sun Jan 15 1989"	13:55:38		
fr89a088.fits	Flat Field			IK	"Sun Jan 15 1989"	13:56:25		
fr89a089.fits	Dark			IK	"Sun Jan 15 1989"	13:57:15	xName	
sp89a001.fits	Flat Field				01/13/89	+07:41:20		Time written as MST in log
sp89a002.fits	Flat Field				01/13/89	+07:43:30		Time written as MST in log
sp89a003.fits	DARK				01/13/89	+07:46:26		Time written as MST in log
sp89a004.fits	Flat Field				01/13/89	+07:48:33		Time written as MST in log
sp89a005.fits	Flat Field				01/13/89	+07:51:01		Time written as MST in log
sp89a006.fits	Flat Field				01/13/89	+07:53:19		Time written as MST in log
sp89a007.fits	Flat Field				01/13/89	+07:54:26		Time written as MST in log
sp89a008.fits	C/1989 A1 Yanaka	14:10:30.72	+13:06:52.6		01/13/89	+12:31:48	xName	
sp89a009.fits	MARS	01:40:05.02	+11:14:23.6		01/14/89	+02:34:03		
sp89a010.fits	MARS	01:40:05.02	+11:14:23.6		01/14/89	+02:35:23		
sp89a011.fits	MARS	01:40:05.44	+11:14:26.2		01/14/89	+02:39:47		
sp89a012.fits	MARS	01:40:05.44	+11:14:26.2		01/14/89	+02:40:47		
sp89a013.fits	MARS	01:40:05.44	+11:14:26.2		01/14/89	+02:41:35		
sp89a014.fits	MARS	01:40:05.44	+11:14:26.2		01/14/89	+02:42:21		
sp89a015.fits	MARS	01:40:05.86	+11:14:28.9		01/14/89	+02:44:58		
sp89a016.fits	MARS	01:40:05.86	+11:14:28.9		01/14/89	+02:45:42		
sp89a017.fits	BS 1662	05:07:38.31	+09:28:18.4		01/14/89	+04:38:28		
sp89a018.fits	BS 1662	05:07:38.31	+09:28:18.4		01/14/89	+04:42:57		
sp89a019.fits	BS 1662	05:07:38.31	+09:28:18.4		01/14/89	+04:44:41		
sp89a020.fits	BS 1662	05:07:38.31	+09:28:18.4		01/14/89	+04:45:28		
sp89a021.fits	BS 1662	05:07:38.31	+09:28:18.4		01/14/89	+04:49:42		
sp89a022.fits	BS 1662	05:07:38.31	+09:28:18.4		01/14/89	+04:50:23		
sp89a023.fits	BS 1662	05:07:38.31	+09:28:18.4		01/14/89	+04:51:04		
sp89a024.fits	BS 1662	05:07:38.31	+09:28:18.4		01/14/89	+04:51:46		
sp89a025.fits	BS 1662	05:07:38.31	+09:28:18.4		01/14/89	+04:52:32		
sp89a026.fits	BS 1662	05:07:38.31	+09:28:18.4		01/14/89	+04:56:42		
sp89a027.fits	BS 1662	05:07:38.31	+09:28:18.4		01/14/89	+04:57:57		
sp89a028.fits	BS 1662	05:07:38.31	+09:28:18.4		01/14/89	+04:59:18		
sp89a029.fits	BS 1662	05:07:38.31	+09:28:18.4		01/14/89	+05:00:38		

File	Object	RA set	DEC set	Filter	Date	UT-STRT	Log Differences	Comments (N left E up, rotate 90 CCW)
sp89a030.fits	BS 1662				01/14/89	+07:34:02		Unknown object; Log lists object as FK 1211, spectral imagery looks different than that of BS 1662
sp89a031.fits	BS 1662				01/14/89	+07:35:09		Unknown object; Log lists object as FK 1211, spectral imagery looks different than that of BS 1662
sp89a032.fits	BS 1662				01/14/89	+07:36:50		Unknown object; Log lists object as FK 1211, spectral imagery looks different than that of BS 1662
sp89a033.fits	BS 1662				01/14/89	+07:38:16		Unknown object; Log lists object as FK 1211, spectral imagery looks different than that of BS 1662
sp89a034.fits	BS 1662				01/14/89	+07:40:29		Unknown object; Log lists object as FK 1211, spectral imagery looks different than that of BS 1662
sp89a035.fits	BS 4030	10:16:32.29	+23:30:11.1		01/14/89	+09:01:25		
sp89a036.fits	BS 4030	10:16:32.29	+23:30:11.1		01/14/89	+09:03:12		
sp89a037.fits	BS 4529	11:48:23.49	-10:18:47.2		01/14/89	+09:49:53		
sp89a038.fits	BS 4529	11:48:23.49	-10:18:47.2		01/14/89	+09:51:02		
sp89a039.fits	BS 4529	11:48:23.49	-10:18:47.2		01/14/89	+09:52:32		
sp89a040.fits	BS 4529	11:48:23.49	-10:18:47.2		01/14/89	+09:54:43		
sp89a041.fits	BS 4529	11:48:23.49	-10:18:47.2		01/14/89	+09:57:09		
sp89a042.fits	BS 5183	13:46:57.12	+06:21:01.3		01/14/89	+10:18:30		
sp89a043.fits	BS 5183	13:46:57.12	+06:21:01.3		01/14/89	+10:20:41		
sp89a044.fits	BS 5183	13:46:57.12	+06:21:01.3		01/14/89	+10:23:25		
sp89a048.fits	"COMMET 1"				01/14/89	+12:20:37	xName	Unknown object; in log as "Comet #1"
sp89a049.fits	"COMMET 1"				01/14/89	+13:02:52	xName	Unknown object; in log as "Comet #1"
sp89a050.fits	"COMMET 1"				01/14/89	+13:16:03	xName	Unknown object; in log as "Comet #1"
sp89a051.fits	"COMMET 1"				01/14/89	+13:27:18	xName	Unknown object; in log as "Comet #1"
sp89a052.fits	Phobos	01:42:10.09	+11:27:20.0		01/15/89	+02:48:50	xName	
sp89a053.fits	Phobos	01:42:10.88	+11:27:25.4		01/15/89	+02:57:10	xName	
sp89a054.fits	Phobos	01:42:10.88	+11:27:25.4		01/15/89	+03:00:46	xName	
sp89a055.fits	Phobos	01:42:11.66	+11:27:30.7		01/15/89	+03:06:50	xName	
sp89a056.fits	Phobos	01:42:12.43	+11:27:35.9		01/15/89	+03:15:24	xName	
sp89a057.fits	BS 2067	05:56:03.43	+13:55:29.7		01/15/89	+04:04:22		
sp89a058.fits	BS 2067	05:56:03.43	+13:55:29.7		01/15/89	+04:07:16		
sp89a059.fits	BS 2067	05:56:03.43	+13:55:29.7		01/15/89	+04:09:12		
sp89a060.fits	BS 2067	05:56:03.43	+13:55:29.7		01/15/89	+04:10:47		
sp89a061.fits	BS 2067	05:56:03.43	+13:55:29.7		01/15/89	+04:13:57		
sp89a062.fits	BS 2067	05:56:03.43	+13:55:29.7		01/15/89	+04:14:41		
sp89a063.fits	BS 2067	05:56:03.43	+13:55:29.7		01/15/89	+04:16:42		
sp89a064.fits	BS 2067	05:56:03.43	+13:55:29.7		01/15/89	+04:17:51		
sp89a065.fits	BS 2067	05:56:03.43	+13:55:29.7		01/15/89	+04:35:19		
sp89a066.fits	BS 2067	05:56:03.43	+13:55:29.7		01/15/89	+04:38:53		
sp89a067.fits	BS 2067	05:56:03.43	+13:55:29.7		01/15/89	+04:39:55		
sp89a068.fits	BS 2067	05:56:03.43	+13:55:29.7		01/15/89	+04:42:38		
sp89a069.fits	Comet C/ 1989 A1 (Yanaka)	14:14:09.16	+13:50:37.8		01/15/89	+11:30:50		
sp89a070.fits	Comet C/ 1989 A1 (Yanaka)	14:14:13.71	+13:51:34.4		01/15/89	+12:27:38		

File	Object	RA set	DEC set	Filter	Date	UT-STR	UT-STR	Comments (N left E up, rotate 90 CCW)
Above output obtained by running: <code>hselect *.fits \$!,object,ra,dec,filter,date,ut-str, yes &gt; 89a_hselect</code> The Log Differences and Comments columns are the observations noted after comparing the FITS header with log sheets.								
sp89a071.fits	Comet C/ 1989 A1 (Yanaka)	14:14:13.71	+13:51:34.4		01/15/89	+12:30:04		
sp89a072.fits	Comet C/ 1989 A1 (Yanaka)	14:14:14.47	+13:51:43.9		01/15/89	+12:42:40		
sp89a073.fits	Comet C/ 1988 Y1 (Yanaka)	14:37:19.31	-23:05:18.9		01/15/89	+13:16:09		
sp89a074.fits	Comet C/ 1988 Y1 (Yanaka)	14:37:16.81	-23:05:46.4		01/15/89	+13:22:53		
sp89a075.fits	Comet C/ 1988 Y1 (Yanaka)	14:37:11.80	-23:06:41.3		01/15/89	+13:29:01		