

IUE Newsletter Note

IUE Merged Log - Exposure Start Times

A Guest Observer recently expressed some confusion concerning the way the date of observation is recorded in the IUE merged log. How to interpret the exposure information and how to convert from the dates given in the merged log to Julian date is summarized in this note.

The starting time (year, day, hour, minute) of the exposure is listed in the IUE merged log for each observation. The day number is the number of days since the beginning of the year, with Day 1 = Jan 1. Table 1 gives a listing of the day number versus date for both normal and leap years. The day starts at 0<sup>h</sup> UT (midnight) and the exposure time is given in UT.

To convert from the time given in the merged log to Julian Date, first determine what the JD is for 0<sup>h</sup> UT on Jan 0. (Refer to the Astronomical Almanac). Add to this the day number of the observation plus the fraction of a day elapsed since UT=0. For example, suppose you had an exposure which was started on day 307 (Nov 3), 1982 at UT=6:00. The JD is given by:

JD at Jan 0, 0 <sup>h</sup> UT	2444969.50
Day number	307.0
fraction of day (6/24)	.25
Julian Date of exposure start	2445276.75

It should be mentioned that a few of the dates in the IUE merged log are incorrect. We are working to identify and correct these errors. These incorrect exposure dates are believed to be primarily for spectra taken during the first two months of 1980. If you are uncertain about the merged log entry, the time can be verified by referring to the science header. (see Figure #1)

The first 11 digits of line 10 of the science header give the start time of the read. Digits 1 and 2 give the year, digits 3 to 5 give the day, while digits 6 through 11 give the hour, minute and second of the read start time. The exposure start time can be gotten from the events listing in the science header, where

EXPOSURE START TIME	EVENT	CAMERA NUMBER	EXPOSURE (MIN)	LENGTH (SEC)
HR, MIN, SEC	EXPOBC	#		

Note that the exposure start time from the events listing differs from the time of the :OBC command that is written on the scripts, by a few seconds. The camera numbers are LWP=1, LWR=2, SWP=3, SWR=4.

I hope that this information will help to clear up any questions.

Nancy A. Oliverson  
November 10, 1982

DAY NUMBER												DAY NUMBER														
LEAP YEARS												NON LEAP YEARS														
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			
1	001	032	061	092	122	153	183	214	245	275	306	336	1	001	032	060	091	121	152	182	213	244	274	305	335	1
2	002	033	062	093	123	154	184	215	246	276	307	337	2	002	033	061	092	122	153	183	214	245	275	306	336	2
3	003	034	063	094	124	155	185	216	247	277	308	338	3	003	034	062	093	123	154	184	215	246	276	307	337	3
4	004	035	064	095	125	156	186	217	248	278	309	339	4	004	035	063	094	124	155	185	216	247	277	308	338	4
5	005	036	065	096	126	157	187	218	249	279	310	340	5	005	036	064	095	125	156	186	217	248	278	309	339	5
6	006	037	066	097	127	158	188	219	250	280	311	341	6	006	037	065	096	126	157	187	218	249	279	310	340	6
7	007	038	067	098	128	159	189	220	251	281	312	342	7	007	038	066	097	127	158	188	219	250	280	311	341	7
8	008	039	068	099	129	160	190	221	252	282	313	343	8	008	039	067	098	128	159	189	220	251	281	312	342	8
9	009	040	069	100	130	161	191	222	253	283	314	344	9	009	040	068	099	129	160	190	221	252	282	313	343	9
10	010	041	070	101	131	162	192	223	254	284	315	345	10	010	041	069	100	130	161	191	222	253	283	314	344	10
11	011	042	071	102	132	163	193	224	255	285	316	346	11	011	042	070	101	131	162	192	223	254	284	315	345	11
12	012	043	072	103	133	164	194	225	256	286	317	347	12	012	043	071	102	132	163	193	224	255	285	316	346	12
13	013	044	073	104	134	165	195	226	257	287	318	348	13	013	044	072	103	133	164	194	225	256	286	317	347	13
14	014	045	074	105	135	166	196	227	258	288	319	349	14	014	045	073	104	134	165	195	226	257	287	318	348	14
15	015	046	075	106	136	167	197	228	259	289	320	350	15	015	046	074	105	135	166	196	227	258	288	319	349	15
16	016	047	076	107	137	168	198	229	260	290	321	351	16	016	047	075	106	136	167	197	228	259	289	320	350	16
17	017	048	077	108	138	169	199	230	261	291	322	352	17	017	048	076	107	137	168	198	229	260	290	321	351	17
18	018	049	078	109	139	170	200	231	262	292	323	353	18	018	049	077	108	138	169	199	230	261	291	322	352	18
19	019	050	079	110	140	171	201	232	263	293	324	354	19	019	050	078	109	139	170	200	231	262	292	323	353	19
20	020	051	080	111	141	172	202	233	264	294	325	355	20	020	051	079	110	140	171	201	232	263	293	324	354	20
21	021	052	081	112	142	173	203	234	265	295	326	356	21	021	052	080	111	141	172	202	233	264	294	325	355	21
22	022	053	082	113	143	174	204	235	266	296	327	357	22	022	053	081	112	142	173	203	234	265	295	326	356	22
23	023	054	083	114	144	175	205	236	267	297	328	358	23	023	054	082	113	143	174	204	235	266	296	327	357	23
24	024	055	084	115	145	176	206	237	268	298	329	359	24	024	055	083	114	144	175	205	236	267	297	328	358	24
25	025	056	085	116	146	177	207	238	269	299	330	360	25	025	056	084	115	145	176	206	237	268	298	329	359	25
26	026	057	086	117	147	178	208	239	270	300	331	361	26	026	057	085	116	146	177	207	238	269	299	330	360	26
27	027	058	087	118	148	179	209	240	271	301	332	362	27	027	058	086	117	147	178	208	239	270	300	331	361	27
28	028	059	088	119	149	180	210	241	272	302	333	363	28	028	059	087	118	148	179	209	240	271	301	332	362	28
29	029	060	089	120	150	181	211	242	273	303	334	364	29	029		088	119	149	180	210	241	272	302	333	363	29
30	030		090	121	151	182	212	243	274	304	335	365	30	030		089	120	150	181	211	242	273	303	334	364	30
31	031		091		152		213	244		305		366	31	031		090		151		212	243		304		365	31

TABLE 1

*****FILE 11*****				
	0001000107680768	1 2 013015458	1	C
5571*	3*TUESOC		2	C
SWP 15458, FTA URSAE MAJORIS, 6 SEC. EXPO., LGAP, HI DISP.			3	C
			4	C
			5	C
OBSERVER: HOLM	PROGRAM: PHCAI	1981/313/09 NOV.	6	C
			7	C
Year Day No. at Start of Read; Exposure started at 05:00:23			8	C
			9	C
81313052807*	9 * 21A * UPSPROC28 * 052536CAMON, LWP		* 10	C
040218	TLM, FES2ROM	*052622 HEATER WARM UP	* 11	C
040541	S/C MANEUVERING	*052725 TLM, SWPRM .200000E 02	* 12	C
040619	TLM, SWPRM	*052809 READPREP 3 IMAGE 15458	* 13	C
040654	MODE SWH	*052844 SCAN READLO SS 1 G3 44	* 14	C
040948	SPREP 3	*052857 X 60 Y 76 G1 82 HT 105	* 15	C
042336	TLM, FES2ROM	*052835	* 16	C
042411	MODE LWH	*052856	* 17	C
043954	TLM, FES2ROM .200000E 02	*020554 FESIMAGE 0 0 81	* 18	C
045419	TARGET IN LWLA	*021754 TARGET IN SWLA	* 19	C
045530	EXPURE 2 0 0 MAXG NOL	*021940 FESTRK TRACKING	* 20	C
045609	FIN 2 T 5 S 98 U 109	*022031 EXPURE 3 87 0 MAXG NOL	* 21	C
045702	TARGET FROM LWLA	*022739 TLM, LWRROM	* 22	C
045909	TARGET IN SWLA	*022948 READPREP 2 IMAGE 11947	* 23	C
045924	FESCT 4886 IN 664 1 0	*023414 SCAN READLO SS 1 G3 58	* 24	C
050023	EXPURE 3 0 0 MAXG NOL	*023428 X 56 Y 72 G1 99 HT 106	* 25	C
050132	FIN 3 T 5 S 97 U 109	*025453 TLM, FES2ROM	* 26	C
050219	TARGET FROM SWLA	*034734 FIN 3 T 5219 S 97 U 109	* 27	C
050246	TLM, LWRROM .200000E 02	*034829 TARGET FROM SWLA	* 28	C
050321	READPREP 2 IMAGE 11948	*035342 TLM, SWPRM	* 29	C
050352	SCAN READLO SS 1 G3 58	*035414 READ 3 IMAGE 15457	* 30	C
050409	X 56 Y 72 G1 99 HT 106	*035450 SCAN READLO SS 1 G3 44	* 31	C
052340	TLM, FES2ROM .200000E 02	*035507 X 60 Y 76 G1 82 HT 105	* 32	C
			33	C
			34	C
			35	C
PHCAI *1*02*HOLM	* 25*	*H*00120315*0*0*1* 21	36	C
1345343+493344*990*H3*5* 1.8* 0.02*		* * 999.99* *	37	C
			38	C
			39	C
			40	C
			41	C
			42	C
			43	C
			44	C
			45	C
			46	C
			47	C
			48	C
			49	C
			50	C
			51	C
			52	C
			53	C
			54	C
			55	C

→ Exposure start time

FIGURE 1