

LORAN LOG

Cruise I.D. IG-23Year 1977Leg No. 2TZ +6

PI

MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
JAN	7	2305					1	12914	67539		
		2333					2	12903	67562		
JAN	8	0130					3	12868	67629		
		0200					4	12857	67652		
		0247					5	12840	67688		
		0300					6	12835	67697		
		0330					7	12823	67719	-Slew Lt	
		0400					8	12812	67742		
		0430					9	12801	67764		
		0500					10	12790	67787		
		0530					11	12779	67811		
		0600	28	32.2	-93	14.0	12	12769	67832		
		0630					13	12757	67855		
		0700	28	27.1	-93	03.8	14	12747	67877	- 0720 slew Lt. ON	
		0730					15	12735	67900		
		0800	28	21.8	-92	53.0	16	12723	67924		
		0843					17	12706	67958		
		0900	28	16.5	-92	43.2	18	12699	67970		
		0930					19	12687	67994		
		1000	28	12.1	-92	32.3	20	12678	68015		
		1100	28	11.2	-92	21.1	21	12668	68052		

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
JAN	8	1200	28	11.6	-92	18.0	22	12660	68092		MMH
"	"	1300	28	11.0	-91	56.2	23	12650	68131		MMH
"	"	1400	28	11.1	-91	43.6	24	12640	68173		MMH
"	"	1500	28	09.7	-91	32.8	25	12629	68214		TRH
"	"	1600	28	11.3	-91	23.5	26	12628	68237		TRH
"	"	1700	28	14.2	-91	15.0	27	12631	68259		TRH
"	"	1800	28	15.6	-91	10.2	28	12633	68271		TRH
"	"	1830	28	16.75	-91	6.8	29	12635	68279		
JAN	8	1900	28	13.25	-91	2.5	30	12637	68290		
"	"	1930	28	19.3	-90	57.6	31	12638	68303		
"	"	2000	28	15.7	-90	53.1	32	12639	68315		
"	"	2040	28	22.0	-90	47.2	33	12640	68332		
"	"	2100	28	22.6	-90	44.8	34	12640	68339		
"	"	2130	28	18.75	-90	40.2	35	12641	68352		
"	"	2200	28	19.5	-90	35.7	36	12641	68365		
"	"	2300	28	26.3	-90	27.0	37	12641	68392		MMH
JAN	9	0000	28	28.7	-90	17.1	38	12643	68421		MMH
"	"	0100	28	32.3	-90	08.0	39	12649	68444		MMH
"	"	0200	28	33.6	-89	58.9	40	12651	68474		MMH
"	"	0300	28	37.2	-89	49.1	41	12657	68500		MMH
JAN	9	0400	28	40.6	-89	41.3	42	12666	68521		MMH

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
JAN	9	0500	28	44.2	-89	32.5	43	12674	68543	slew light on	ML
"	"	0600	28	47.0	-89	25.0	44	12681	68564		ML
"	"	0700	28	50.2	-89	17.2	45	12688	68588		
"	"	0800	28	53.5	-89	8.75	46	12697	68611		
"	"	0900	28	56.75	-89	0.30	47	12705	68636		
"	"	1000	29	0.55	-88	51.0	48	12715	68663		
"	"	1100	29	03.7	-88	43.0	49	12725	68687		ML
"	"	1200	29	06.5	-88	34.8	50	12733	68712		ML
"	"	1300	29	09.4	-88	26.8	51	12741	68738		ML
"	"	1400	29	12.8	-88	12.9	52	12752	68765		ML
"	"	1500	29	26.0	-88	09.1	53	12763	68794		ML
"	"	1600	29	19.4	-87	59.3	54	12774	68826		ML
"	"	1700	29	24.3	-87	54.3	55	12795	68831		ML
"	"	1800	29	27.7	-87	51.2	56	12816	68833		ML
"	"	1845	29	31.7	-87	49.75	57	12831	68833	slow turn started	ML
"	"	1900	29	33.25	-87	49.75	58	12837	68829		ML
"	"	1928	29	32.5	-87	50.6	59	12834	68826		ML
"	"	2001	29	31.7	-87	50.75	60	12828	68830		ML
"	"	2100	29	27.5	-87	50.3	61	12811	68841		ML
"	"	2130	29	25.6	-87	49.6	62	12800	68849		ML
"	"	2200	29	23.0	-87	50.5	63	12789	68853		ML

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
Jan	9	2300	29	20.5	-87	51.5	64	12770	68857		MAH
Jan	10	0000	29	14.9	-87	52.8	65	12749	68866		MAH
Jan	10	0100	29	10.7	-87	53.5	66	12727	68876		MAH
Jan	10	0200	29	6.9	-87	55.3	67	12708	68885		MAH
"	"	0301	29	1.7	-87	56.0	68	12687	68894		
"	"	0400	28	57.5	-87	56.0	69	12665	68900		TRA
"	"	0500	28	52.1	-87	57.0	70	12644	68909		
"	"	0600	28	48.0	-87	59.0	71	12624	68914		
"	"	0700	28	44.0	-88	0.0	72	12604	68922		ML
"	"	0800	28	39.2	-88	0.0	73	12583	68933		ML
"	"	0900	28	32.1	-88	0.40	74	12561	68945		ML
"	"	1000	28	29.75	-88	0.6	75	12538	68958		
"	"	1100	28	24.1	-88	00.6	76	12514	68970		MAH
"	"	1204	28	18.9	-88	01.0	77	12488	68982		MAH
"	"	1300	28	14.0	-88	01.8	78	12469	68992		MAH
"	"	1400	28	10.5	-88	01.9	79	12448	69002		MAH
"	"	1500					80	12428	69015	Port Angel	
"	"	1514					81	12422	69014		MAH
"	"	1600					82	12408	69022		
"	"	1647					83	12392	69038	maggie wrapped around streamer lead slow	
"	"	1715					84	12383	69045	Resumed 600 RPM speed maggie separated	

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
JAN	10	1800	27	52.5	-88	2.5	85	12369	69061		
"	"	1830						12359	69072		
"	"	1900	27	49.8	-87	54.4	86	12349	69082		
		2000	27	45.7	-87	51.6	87	12330	69102		
JAN	10	2100	27		-87		88	12311	69122		
"	"	2200	27	37.9	-87	46.7	89	12293	69140		
"	"	2230						12284	69149		MLH
"	"	2300	27	35.5	-87	43.8	90	12278	69157		MLH
JAN	11	0000	27	33.2	-87	40.8	91	12265	69175		MLH
"	"	0100	27	31.0	-87	37.3	92	12251	69193		MLH
"	"	0200	27	28.0	-87	35.0	93	12236	69210		
"	"	0300	27	25.1	-87	31.1	94	12221	69230		JUL
"	"	0400	27	22.8	-87	28.3	95	12203	69252		TRH
"	"	0500	27	19.8	-87	24.7	96	12187	69274		
"	"	0600	27	17.8	-87	20.4	97	12173	69295		
"	"	0700	27	16.1	-87	16.5	98	12158	69314		ML
JAN	11	0800	27	13.9	-87	12.2	99	12143	69335		
"	"	0900	27	7.4	-87	11.4	100	12127	69358		
"	"	0930	27	10.0	-87	05.6	101	12118.4	69368.5		
"	"	1000	27	09.1	-87	03.9	102	12110	69378		MLH
"	"	1100	27	05.2	-87	02.2	103	12093	69394		MLH

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
JAN	11	1200	27	03.0	-86	59.2	104	12076	69410		ML
"	"	1300	26	58.3	-86	57.9	105	12059	69422		ML
"	"	1411	26	54.1	-86	56.5	106	12038	69435		ML
"	"	1820	26	33.2	-86	51.4	107	11953	69496		ML
JAN	11	1900	26	32	-86	48.4	108	11939	69509		ML
"	"	2000	26	27.5	-86	45.5	109	11917	69527.4		
"	"	2100	26	23.4	-86	42.3	110	11896	69547		ML
"	"	2200	26	19.4	-86	39.0	111	11876.5	69566		
"	"	2300	26	16.4	-86	35.5	112	11858	69587		ML
		2352					113	11841	69606		
JAN	12	0000	26	13.5	-86	31.5	114	11839	69608		
"	"	0100	26°	09.7	-86	27.4	115	11820	69628		
"	"	0130	26°	08.0	-86	25.1	116	11809	69638	Begin slow turn to 055°/GT2-11 ^{1500h.}	
"	"	0144					117	11808	69641	On course 055°	
"	"	0200	26°	08.4	-86	23.7	118	11807	69644		
"	"	0300	26°	08.0	-86°	21.5	119	11802	69655	0305 Z ON COURSE 050°	
"	"	0400	26°	09.6	-86°	19.2	120	11799	69665		
"	"	0500	26°	12.1	86°	14.2	121	11796	69678		
JAN	12	0600	26°	10.9	86	8.6	122	11790	69702		
"	"	0700	26°	11.6	86	5.8	123	11786	69713		
"	"	0801	26	12.2	-86	3.2	124	11784	69722		

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
JAN	12	0900	26	13.0	-86	0.5	125	11782.0	69731.5		MHA
"	"	1000	26	14.0	-85	58.2	126	11780	69740		MHA
"	"	1100	26	15.1	-85	56.1	127	11780	69749	looks like the L-C pos has jumped	MHA
"	"	1230		15.0	-85	56.0	128	11780	69750	lost lock - regained.	MHA
"	"	1300	26	16.5	-85	53.5	129	11780	69754		MHA
"	"	1330					130	11781	69758		
"	"	1400	26	17.1	-85	51.6	131	11779	69762		
"	"	1500	26	17.9	-85	48.2	132	11776	69773		
"	"	1600	26	20.0	-85	45.4	133	11774	69783		
"	"	1700	26	20.6	-85	42.5	134	11773	69794		
"	"	1730	26	21.2	-85	41.3	135	11774	69799		
"	"	1800	26	22.3	-85	40.8	136	11779	69800		
"	"	1900	26	24.0	-85	40.9	137	11785	69797		
"	"	2005	26	22.7	-85	42.4	138	11783	69792.	PICKING UP CABLE	
"	"	2100	26		-85		139	11778	69781		
JAN	12	2200	26		-86		140	11774	69767		MHA
"	"	2305	26°	13.5	-85	56.0	141	11775	69753		
"	"	2332					142	11773	69756	Begin shootn again	
JAN	13	0000	26	14.8	-85	53.1	143	11772	69760		MHA
		0100	26	15.7	-85	50.0	144	11770	69771		MHA
JAN	13	0200	26	16.9	-85	46.8	145	11770	69782		MHA

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
I	13	0300	26°	19.5	-85°	43.2	146	11773	69792	3.7 Km.	TRH
JAN	13	0410	26°	24.7	-85°	36.4	147	11779	69815	waited for ^{6.8 km} lost signal, regained	TRH
"	"	0500	26°	26.9	-85°	33.4	148	11782	69824		
"	"	0613	26°	28.9	-85°	31.0	149	11779.3	69844		
"	"	0700	26°	27.1	-85°	23.8	150	11777	69859		ML
"	"	0800	26°	33.2	-85°	17.9	151	11773	69879		ML
"	"	0900	26°	33.3	-85°	12.3	152	11766	69901		ML
"	"	0930	26°	34.4	-85°	10.0	153	11763	69911		
"	"	1000	26°	35.1	-85°	06.9	154	11760	69922		ML
Jan	13	1100	26°	36.8	-85°	02.0	155	11756	69942		ML
"	"	1200	26°	38.3	-84°	56.1	156	11752	69963		ML
"	"	1300	26°	39.9	-84°	51.3	157	11748	69983		ML
"	"	1355	26°	41.8	-84°	46.0	158	11745	70002		ML
"	"	1417	26°	43.3	-84°	45.8	159	11750	70002	Steady on 323	
"	"	1500	26°	46.2	-84°	48.2	160	11770	69985		
"	"	1600	26°		-84°		161	11800	70014	very poor fix lost signal N-G.	TRH
"	"	1614	26°	49.0	-84°	54.2	162	11807	69956	good signal, improved fix	
"	"	1700	26°	55.5	-84°	57.0	163	11831	69939		
"	"	1800	27°	02.4	-84°	59.2	164	11861	69920		
"	"	1900	27°	06.5	-85°	01.4	165	11888	69905		
JAN	13	2000					166	11918.5	69886.5		

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
JAN	13	2013	27	10.8	-85	8.1	166	11922	69870	CHANGED ST. #2 to hold - 10ms from before	
		2030					167	11921	69864		
JAN	13	2100	27°	08.6'	-85	13.0	168	11920.4	69853		
"	"	2200	27°	05.0'	-85	18.2	169	11914	69835		
Jan	13	2300	27°	00.9'	-85°	23.5	170	11905	69817		MMH
Jan	14	0000	26°	55.9'	-85°	29.1	171	11892	69802		MMH
"	"	0100	26°	50.6	-85°	33.7	172	11880	69788		
"	"	0200	26°	46.3	-85°	39.0	173	11871	69774		
"	"	0300	26°	43.5	-85°	43.3	174	11867	69758		TRH
"	"	0400	26°	40.0	-85°	49.5	175	11865	69736		
"	"	0500	26°	37.4	-85	56.0	176	11865	69715		TRH
"	"	0600	26°	34.3	-86	01.8	177	11864	69696		
"	"	0700								Stew lights on, overheated turned off	
"	"	0800	26°	26.9	-86	11.7	178	11843	69667	? may be 10ms off (11853)?	
"	"	0900	26°	23.0	-86	16.1	179	11847	69654	Added +10ms to sta. #1	
"	"	1000	26°	19.3	-86	20.8	180	11842	69640		MMH
"	"	1100	26°	15.2	-86	29.5	181	11836	69626		
"	"	1133					182	11833	69619		↓
"	"	1200	26°	11.0	-86	28.1	183	11824	69624		MMH
Jan	14	1300	26°	07.2	-86	23.9	184	11804	69647		MMH

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
Jan	14	1400	26°	03.1	-86°	19.8	185	11783	69670		MMH
"	"	1500	25°	59.0	-86	15.4	186	11760	69692		TRH
"	"	1600	25°	52.8	-86	12.3	187	11734	69715		
"	"	1700	25°	47.4	-86	8.0	188	11706	69736		
		1800	25°	40.6	-86	5.4	189	11678	69759		
		1830						11685	69779.5	?	
"	"	1900					190	11670	69793	? Not good - will use Loran A.	turned
"	"	2002	25°	29.4	-85°	55.0	191	11624	69812	(Lat. 25° 33.6, Long. 86° 1.5)	OFF
"	"	2100	25°	25.9	-85°	49.8	192	11604	69836		
JAN	14	2200	25°	22.0	-85°	44.6	193	11582	69861		MMH
Jan	14	2300	25°	27.9	-85°	40.5	194	11562	69883		
Jan	15	0000	25°	13.4	-85	35.2	195	11541	69907		
"	"	0100	25°	10.9	-85°	29.8	196	11521	69930		
"	"	0200	25°	07.1	-85°	24.5	197	11501	69953		
"	"	0400	24°	58.2	-85°	17.3	198	11463	69989	* no fix at 0300Z due to lost signal + slow light on, could not relocate sig. not turned off	
"	"	0500	24°	52.2	-85°	15.6	199	11445	70003		
"	"	0600	24°	46.6	-85	11.0	200	11421	70026		MMH
"	"	0700	24°	41.5	-85	7.0	201	11402	70053(43)	slew stat. 2 - 10 ms to match satellite	
"	"	0800	24	35.5	-85	4.0	202	11383.4	70060		
"	"	0900	24	30.3	-85	0.0	203	11364	70080		
Jan	15	1000	24	25.4	-84	55.5	204	11344	70100		

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
JAN	15	1100	24°	19.1	-84°	50.8	205	11325	70122		MMH
"	"	1155	24°	14.8	-84°	46.3	206	11309	70141		
"	"	1300	24°	09.6	-84°	42.0	207	11291	70161		↓
"	"	1400	24°	04.1	-84°	38.1	208	11275	70178		MMH
"	"	1500	23°	59.2	-84°	34.8	209	11261	70194		TRH
"	"	1600	23°	55.0	-84°	30.9	210	11246	70212		TRH
"	"	1700	23°	39.8	-84°	26.3	211	11231	70230		TRH
"	"	1800	23°	45.9	-84°	20.6	212	11217	70248		ML
"	"	1900	23°	40.6	-84°	17.4	213	11202	70267		ML
"	"	2000	23°	34.0	-84°	13.0	214	11188	70285		ML
"	"	2030						11181	70294		DB
"	"	2100	23°	29.2	-84°	08.7	215	11175	70304		ML
JAN	15	2200	23°	23.8	-84°	04.0'	216	11162	70322		MMH
		2300	23°	19.8	-83°	59.1	217	11150.5	70340		
JAN	16	0000	23°	14.8	-83°	54.3	218	11139	70359		
"	"	0032					219	11133	70368		
"	"	0100	23°	09.0	-83°	49.8	220	11127	70377		
"	"	0117	23°	07.7	-83°	49.1	221	11125	70379		↓
"	"	0200	23°	07.7	-83°	49.1	222	11125	70379		MMH
"	"	0300	23°	06.0	-83°	50.3	223	11125	70376		JL
"	"	0400	23°	03.5	-83°	54.0	224	11128	70365		

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
JAN	16	0500	23°	0.7	-83°	59.7	225	11132	70349		TRW
"	"	0600	22°	58.2	-84°	03.4	226	11135	70334		
"	"	0700	22°	55.8	-84°	10.5	227	11142	70315		
"	"	0800	22°	55.2	-84°	16.3	228	11149	70296.5		
"	"	0900	22°	52.4	-84°	22.5	229	11155	70277		
		0930						11157	70268		
"	"	1000	22°	49.3	-84°	28.6	230	11160	70258		
"	"	1100	22°	46.4	-84°	35.1	231	11166	70238		MMH
Jan	16	1200	22°	42.4	-84°	42.0	232	11172	70218		↓
"	"	1300	22°	39.8	-84°	48.3	233	11177	70200		
"	"	1324	22°	39.5	-84°	50.2	234	11180	70193	Steady on 322° (GT2-15)	↓
Jan	16	1400	22°	42.1	-84°	52.5	235	11186	70184		MMH
"	"	1500	22°	46.3	-84°	55.9	236	11196	70169		
"	"	1600					—			slew light on stations <u>not</u> alternating at all locked up, turned off TRW	
"	"	1700	22°	57.2	-85°	04.9	237	11219	70133	6.6 knots	JL
"	"	1800	22°	58.2	-85°	07.0	238	11230	70116		
"	"	1900	23°	01.7	-85°	13.5	239	11239	70102	4 kts.	
"	"	2000	23°	04.7	-85°	16.3	240	11247	70090		
"	"	2100	23°	08.6	-85°	18.8	241	11257	70079.6		
"	"	2200	23°	13.8	-85°	21.3	242	11268	70067		
Jan	16	2300	23°	18.6	-85°	24.5	243	11281	70052		MMH

LORAN LOG

Cruise I.D. IG-23-2 Year 1977Leg No. 2 TZ +6

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
Jan	17	0000	23°	24.6	-85°	27.5	244	11295	70037		MHA
"	"	0100	23°	29.0	-85°	31.8	245	11309	70018		MHA
"	"	0200	23°	34.3	-85°	36.2	246	11324	69999		MHA
"	"	0300	23°	38.9	-85°	45.8	247	11340	69980		
"	"	0326	23°	40.3	-85°	42.6	248	11346	69972	change to 24 fold *	
"	"	0400	23°	42.0	-85°	43.9	249	11351	69965		
"	"	0500	23°	45.0	-85°	46.4	250	11361	69952		
"	"	0600	23°	46.75	-85°	49.8	251	11369	69941		
"	"	0606	23°	47.7	-85°	49.7	252	11370.5	69939.7		
"	"	0700	23°	49.4	-85°	52.2	253	11378.5	69931.1		
"	"	0800	23°	53.1	-85°	52.75	254	11386.8	69924.6		ML
"	"	0900	23°	56.75	-85°	54.0	255	11395.6	69916.9		
"	"	1000	24°	0.0	-85°	56.35	256	11405.6	69905.0		
Jan	17	1030	24°	0.8	-85°	58.10	257	11410.5	69898.6		MHA
"	"	1100	24°	01.5	-86°	00.0	258	11415	69891		
"	"	1119	24°	01.75	-86°	00.04		11419	69887		
"	"	1130	24°	02.70	-86°	01.20	259	11420.0	69885.6		
Jan	17	1200	24°	04.30	-86°	02.30	260	11424.4	69880.4		
		1230					261	11429	69874.9		
Jan	17	1300	24°	06.5	-86°	05.0	262	11434.3	69868.4		
		1330					263	11440.0	69862.0		

LORAN LOG

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
JAN	17	1400	24°	17.0	-86°	12.7	264	11445.8	69855.6		
JAN	17	1500	24°	13.1	-86°	10.5	265	11457.0	69841.9		
"	"	1530	24°	14.8	-86°	11.9	266	11463.4	69835.9		
"	"	1600	24°	15.0	-86°	13.6	267	11467.0	69829.8		
"	"	1630	24°	14.1	-86°	14.9°	268	11467.1	69825.3		
"	"	1700	24°	12.7	-86°	16.7	269	11468.0	69819.9		OK
"	"	1730	24°	11.6	-86°	18.9	270	11469.5	69814.0		
"	"	1800	24	11.0	-86	20.4	271	11471.1	69808.2		
"	"	1830	24	10.0	-86	22.5	272	11473.0	69802.0		
"	"	1900	24	09.1	-86	24.3	273	11473.9	69797		
		1930	24	8.1	-86	25.7	274	11474.3	69792.5		
JAN	17	2000	24	6.5	-86	24.7	275	11469.3	69797.7		
"	"	2030	24°	5.0	-86°	24.0	276	11464.0	69803.1		
"	"	2100	24°	3.8	-86°	22.8	277	11459.6	69807.8		
"	"	2130	24°	4.9	-86°	21.7	278	11454.8	69813.1		
"	"	2200	24°	1.0	-86°	20.5	279	11449.7	69819.3		
"	"	2230	23°	58.5	-86°	19.1	280	11444.3	69826.1		MMH
"	"	2300	23°	58.0	-86°	17.7	281	11438.5	69833.1		
JAN	17	2330	23°	56.5	-86°	16.1	282	11433.2	69839.7		
JAN	18	0000	23°	54.7	-86°	14.9	283	11427.7	69846.2		
"	"	0030	23°	53.2	-86°	13.1	284	11421.8	69853.2		MMH

LORAN LOG

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Leg No. 2

TZ +6

MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
JAN	18	0100	23°	52.0	-86	11.8	285	11416.7	69859.3		MMH
"	"	0130	23°	50.0	-86	10.4	286	11410.9	69866.0		MMH
"	"	0200	23°	48.6	-86	9.5	287	11405.9	69872.0		MMH
"	"	0230	23°	47.3	-86°	07.8	288	11401.00	69877.6		TRH
"	"	0300	23°	45.5	-86°	07.0	289	11396.4	69882.9		TRH
"	"	0330	23°	43.7	-86°	05.7	290	11391.3	69888.6		TRH
"	"	0400	23°	42.2	-86°	04.5	291	11386.4	69894.9		TRH
"	"	0430	23°	40.7	-86°	03.0	292	11381.1	69901.3		JRW
"	"	0500	23°	39.0	-86°	01.7	293	11375.9	69907.7		TRH
"	"	0530	23°	37.5	-86°	00.0	294	11370.2	69914.4		TRH
"	"	0600	23°	35.8	-85°	58.75	295	11365.0	69920.7		ML
JAN	18	0630	23°	34.4	-85°	57.50	296	11359.9	69926.8		ML
"	"	0700	23°	32.7	-85°	56.3	297	11355.3	69932.1		ML
"	"	0733	23°	31.7	-85°	55.1	298	11350.5	69937.8		ML
"	"	0800	23°	29.8	-85°	54.0	299	11346.5	69942.6		
"	"	0830	23°	28.0	-85°	52.6	300	11341.8	69947.9		
		0900	23°	26.4	85	51.5	301	11337.3	69953		
JAN	18	0930	23	24.7	-85	50.6	302	11333.0	69957.9		
		1000	23	23.1	-85	49.5	303	11328.9	69963.4		MMH
		1030	23	21.6	-85	48.3	304	11324.0	69969.9		MMH
JAN	18	1100	23	20.9	-85	49.4	305	11324.7	69966.1		MMH

LORAN LOG

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Leg No. 2TZ +6

MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
Jan	18	1130	23°	22.3	-85	50.7	306	11329.2	69960.0		MAN
"	"	1200	23°	23.2	-85	52.1	307	11333.0	69954.3		
"	"	1230	23°	23.8	-85	53.4	308	11336.5	69948.2		
"	"	1300	23°	24.0	-85	55.7	309	11339.9	69941.7		
"	"	1330	23°	24.5	-85°	57.5	310	11343.3	69935.5		↓
Jan	18	1400	23°	25.7	-85°	59.0	311	11347.1	69929.6		MAN
"	"	1430	23°	26.1	-86°	00.5	312	11350.9	69923.6		
"	"	1500	23°	27.4	-86°	02.0	313	11355.2	69917.0		
"	"	1530	23°	28.3	-86	03.8	314	11359.7	69910.1		
"	"	1600	23°	29.0	-86	03.3	315	11364.5	69902.4		
JAN	18	1630	23°	30.3	-86°	07.3	316	11369.3	69897.2		
"	"	1700	23°	32.1	-86°	08.0	317	11374.1	69892.1		
"	"	1730	23°	33.8	-86°	09.9	318	11378.7	69887.4		
JAN	18	1800	23	34.6	-86	10.2	319	11383.3	69882.0		
"	"	1830	23°	36.5	-86°	11.6	320	11387.8	69875.9		
"	"	1900	23°	38.0	-86°	12.8	321	11392.4	69870.2		
"	"	1930	23°	39.5	-86°	13.8	322	11397.0	69864.4		
"	"	2000	23°	41.0	-86	14.9	323	11401.0	69859.3		
"	"	2030	23°	42.0	-86°	16.1	324	11405.2	69854.0		
"	"	2100	23°	43.1	-86°	18.0	325	11409.5	69848.9		
		2130					326	11413.9	69843.3		

LORAN LOG

Cruise I.D. IG 23-2Year 1977Leg No. 2TZ +6Loran C

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
Jan	18	2153			-		327	11417.4	69838.9	Start slow turn to 040	
"	"	2200	23°	44.9	-86	19.6	328	11418.3	69838.1		MWD
"	"	2213					329	11419.0	69839.0	Steady on 040°	
"	"	2230	23°	47.5	-86°	18.0	330	11418.7	69842.2		
"	"	2300	23°	49.1	-86°	16.2	331	11419.0	69847.0		
"	"	2332	23°	51.0	-86°	14.0	332	11418.9	69852.4		
JAN	19	0001	23	52.4	-86	12.2	333	11418.3	69857.6		
JAN	19	0030	23°	54.4	-86°	10.0	334	11417.6	69863.0		
"	"	0100	23°	55.1	-86°	08.2	335	11416.4	69868.4		
"	"	0130	23°	55.6	-86°	06.6	336	11414.8	69874.0		
"	"	0200	23°	56.6	-86	04.8	337	11413.3	69879.4		
"	"	0230	23°	57.3	-86°	03.0	338	11411.4	69885.0		
"	"	0300	23°	58.1'	-86°	01.3'	339	11410.3	69889.9		
"	"	0330	23	58.9	-86	0.0'	340	11409.2	69894.2		
"	"	0400	23°	59.6	-85°	58.7'	341	11408.98	69898.0		
"	"	0430	24	00.3	-85	58.0	342	11409.1	69900.8		
"	"	0500	24	01.3	-85	55.4	343	11406.4	69909.8		
"	"	0530	24°	00.3	-85°	53.1'	344	11400.1	69916.5		
"	"	0600	23°	58.7'	-85°	50.8'	345	11394.3	69925.6		
"	"	0630	23°	56.8	-85	49.25	346	11387.6	69933.7		
		0700	23	55.1	-85	48.2	347	11382.7	69938.4		

LORAN LOG

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
JAN	19	0730	23°	53.4	-85°	49.4	348	11381.9	69935.6		
"	"	0800	23°	52.25	-85°	51.0	349	11381.9	69932.7		
"	"	0830	23°	51.0	-85	52.1	350	11381.5	69929.2		
"	"	0900	23°	49.9	-85	53.6	351	11382.4	69924.6		
"	"	0930	23°	49.1	-85	55.3	352	11383.5	69919.8		
"	"	1000	23°	48.4	-85	56.7	353	11384.1	69915.5		
JAN	19	1033	23°	47.5	-85	58.2	354	11386.1	69909.3		MMH
"	"	1100	23°	46.4	-86	00.8	355	11387.8	69903.1		
"	"	1130	23°	45.5	-86	03.0	356	11389.7	69896.8		
"	"	1200	23°	44.4	-86°	04.8	357	11390.4	69891.7		
"	"	1230	23°	43.3	-86°	06.4	358	11391.2	69886.7		
"	"	1300	23°	41.8	-86°	08.2	359	11391.6	69881.6		
"	"	1333	23°	39.9	-86°	10.3	360	11392.2	69875.8		
"	"	1400	23°	38.1	-86°	12.9	361	11392.9	69871.3		
"	"	1434	23°	37.3	-86°	14.3	362	11394.0	69865.2		
"	"	1500	23°	36.4	86°	16.1	363	11395.1	69860.1		
"	"	1530	23°	35.9	86°	16.7	364	11394.3	69857.2		
"	"	1600	23°	34.0	86°	16.25	365	11389.5	69862.3		
"	"	1630	23°	31.4	86°	15.5	366	11384.7	69867.5		
"	"	1700	23°	30.0	86°	14.6	367	11380.8	69871.8		
"	"	1730	23	28.1	86	14.0	368	11376.9	69876.7		

LORAN LOG

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
I	19	1801	23°	27.4	-86	12.3	369	11372.6	69882.7		
Jan	19	1830	23°	28.6	-86°	10.3	370	11371.3	69887.3		
"	"	1900	23°	29.3	-86°	8.9	371	11370.6	69891.4		
"	"	1930	23°	30.7	-86°	7.6	372	11370.3	69895.5		
"	"	2000	23°	31.5	-86°	6.0	373	11369.6	69899.7		
"	"	2030	23°	32.3	-86°	4.5	374	11368.1	69904.5		
"	"	2100	23°	33.7	-86°	2.3	375	11367.5	69909.6		
"	"	2130	23°	34.75	-86°	0.6	376	11366.2	69914.7		
"	"	2200	23°	35.3	-85°	59.3	377	11365.0	69919.3		
"	"	2230	23°	35.6	-85°	58.2	378	11363.6	69922.3	?	
"	"	2304	23°	37.5	-85°	55.6	379	11362.8	69929.4		
Jan	19	2333	23°	39.1	-85°	54.5	380	11363.3	69932.6		
Jan	20	0000	23°	40.3	-85°	53.0	381	11363.7	69936.1		
"	"	0030	23°	41.8	-85°	51.5	382	11363.8	69940.3		
"	"	0100	23°	43.6	-85°	49.8	383	11363.8	69944.9		
Jan	20	0130	23°	45.3	-85°	47.5	384	11362.2	69951.3		
"	"	0202	23°	46.0	-85°	44.8	385	11359.1	69959.9		
"	"	0230	23°	47.0	-85°	42.3	386	11356.7	69967.1		
"	"	0300	23°	48.0	-85°	40.0	387	11355.0	69973.8	changing to 12-fold plotting on original chart	GT2-23 cont'd TRH
"	"	0330	23°	50.0	-85°	37.1	388	11353	69983		
"	"	0358	23°		-85°		389			power out — LORAN C out	

LORAN LOG

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
JAN	20	0425	23	51.2	-85	32.3				LORAN A	
"	"	0500	23	52.0	-85	29.2	390	11343.96	70007.6	LORAN C back on line	
"	"	0550			-85		391	11341.2	70015.1		
"	"	0600	23°	53.1	-85°	25.5	392	11339.0	70021.2		
"	"	0630	23°	53.3	-85	23.4	393	11336.3	70028.1		
"	"	0703	23°	52.8	-85°	21.0	394	11331.3	70035.8		
"	"	0730	23°	50.0	-85°	20.0	395	11326.4	70041.4		
"	"	0800	23°		-85°		396	11324.9	70039.8	} Plotted these with -10 min	
"	"	0830	23°		-85°		397	11324.8	70036.4		
"	"	0900	23°	43.4	-85°	27.0	398	11324.8	70032.6		
"	"	0933					399	11324.7	70018		
"	"	1000	23°		-85°		400	11324.95	70014.4		
"	"	1107	23°		-85°		401	11325	70015		
"	"	1132	23°		-85°		402	11325.3	70012.6		
"	"	1200	23°		-85°		403	11326.2	70007.7		
"	"	1230	23°		-85°		404	11326.8	70009.9		
"	"	1200	23°		-85°		405	11324.8	70013.6		
"	"	1330	23°		-85°		406	11322.5	70014.8		
"	"	1400					407	11320	70020	location No 500d.	
"	"	1400	23	37.9	-85	28.9	-			LORAN A	
JAN	20	1500					408	11320.7	70032.2		

LORAN LOG

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Loran C

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MONTH	DAY	TIME (Z)	LAT. DEGR.	LAT. MIN.	LONG. DEGR.	LONG. MIN.	FIX NO.	ST. #1	ST. #2	COMMENTS	WATCH I.D.
Jan	20	1522	23°	46.8	-85°	20.0	409	11321	70038		TRH
"	"	1548	23°	49.8	85	19.0	410	11322.0	70045.5		TRH
"	"	1600	23°	51.0	-85°	17.8	411	11322.4	70048.6		TRH
"	"	1700	23°	58.8	-85°	11.2	412	11324.0	70066.3		TRH
"	"	1742	24°	04.4	-85°	06.7	413	11326.1	70078.1	Sat. sync.	TRH
"	"	1800	24°	06.7	-85°	04.5	414	11326.8	70083.0		TRH
"	"	1900	24°	13.8	-84°	58.6	415	11329.6	70101.1		TRH
"	"	2000	24°	23.2	-84°	51.0	416	11333.9	70118.1		TRH
"	"	2100	24°	32.0	-84°	43.6	417	11337.9	70137.2		M
Jan	20	2200	24°	40.4	-84°	36.0	418	11341.4	70158		TRH
Jan	20	2300	24°	49.9	-84°	29.3	419	11348.4	70176.4		TRH
JAN	21	0000	25°	00.0	-84°	36.1	420	11359.2	70189.5		
JAN	21	0100	25°	32.2	-84°	41.9	421	11370.6	70202.1		
JAN	21	0200	25°	17.8	-84°	14.0	422	11382.5	70214.4		
"	"	0300	25°	28.0	-84°	08.6	423	11396	70226		TRH
"	"	0405	25°	36.8	-84°	03.2	424	11409	70241		TRH
"	"	0500	25°	44.3	-83°	58.8	425	11422	70251		TRH
Jan	21	0600	25°	53.1	-83°	54.0	426	11437	70264		
"	"	0700	26°	0.9	-83°	49.4	427	11454.5	70276.4		
"	"	0800	26°	9.5	-83°	44.7	428	11473	70287.7		
"	"	0900	26°	17.5	-83°	39.8	429	11492.5	70301.3		

LORAN LOG

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