

PROCESSED OBSERVATIONAL DATA FOR USSR SATELLITES 1957 ALPHA AND 1957 BETA

1. Introduction

The information contained in this report is presented in partial fulfillment of obligations of research contracts of the Astrophysical Observatory of the Smithsonian Institution with the U. S. National Committee for the International Geophysical Year of the National Academy of Sciences, and the National Science Foundation. This report presents a collection of observational data, received and processed by the Smithsonian Astrophysical Observatory, for the two Soviet artificial earth satellites, launched on October 4, 1957 and November 3, 1957 respectively. The data cover the total lifetime of the components α_1 , α_2 , and probably α_3 from the Satellite 1957 Alpha launching. For the second Soviet Satellite, 1957 Beta, the data extend from the day of launching to the middle of February 1958. At the time of this report, 1957 Beta is still in orbit and is expected to stay in orbit until mid April 1958.

2. Sources of Data

Since the first Soviet satellites were launched before all precision optical tracking stations were activated, the task of providing the observations, necessary to compute ephemerides and predictions, has fallen to a large extent on the MOONWATCH network and other observing agencies, such as astronomical observatories, radar stations, and various other organizations and individuals.

Observations are received by the Smithsonian Astrophysical Observatory in a number of ways. MOONWATCH observations made in the United States are normally telephoned in and then confirmed by letter. Observations made in foreign countries are sent by the IGY communications system (AGIWARN), if possible. When this is not possible, the observations are sent by air mail. Observations made by civilian, industrial, and military research institutions are received through teletype channels as well. A considerable number of observations are also furnished through Project Space Track of the Geophysics

Research Directorate at the Air Force Cambridge Research Center, ARDC, as well as by interested amateurs and private individuals.

3. Processing of Data

As observational data are received, they are sifted, processed, and put into form for use in IBM 704 programs. The limited staff makes it impossible to process all observations which are received. A major portion of the usable observations have been processed, however, and it is planned to process others as time permits.

As of this date approximately 4500 visual and photographic observations of the Russian earth satellites have been received at the Smithsonian Astrophysical Observatory. About 2980 of these have been processed for use in the IBM computer programs.

The unprocessed observations fall into two groups:

- (a) those that will be processed as soon as time permits;
- (b) those that are not accurate enough to be used.

The unprocessed observations in group (a) are, in general, additional sightings on days for which a large number of observations have already been processed. To be usable, an observation must be accurate to at least one second of time and the position given must be exact to one degree of arc.

The following is a breakdown of all observations:

	1957 $\alpha 1$	1957 $\alpha 2$ and $\alpha 3$	1957 β
Processed :	1320	50*	1610
Unprocessed:			
Usable	470	0	500
Not usable	300	--	250
Total :	2090	50	2360

* 14 of the observations were rejected after processing.

Twelve reports of falling objects seen between 30 November and 11 December, and twenty-six reports of similar objects seen between 20 December and 8 January, have been received. These have been investigated as possible observations of burnouts of $\alpha 1$ and $\alpha 2$, but analysis makes it highly unlikely that any of these observations could have been of the demise of $\alpha 1$ or $\alpha 2$.

No attempt has been made to process radio and radar sightings unless they were made during a period when there were no visual sightings. In the following lists, all radar and radio observations are labeled as such.

The observations of 1957 $\alpha 2$ have been analyzed by Dr. Luigi Jacchia and published on Harvard Announcement Card 1402. The results of this analysis have been noted in the column preceding the observation number in Section 4.2 of this report. Observations labeled $\alpha 2$ appear to be of the satellite itself. Those labeled $\alpha 3$ are observations that do not lie on the $\alpha 2$ curve but instead seem to form an orbit of their own. Possibly these " $\alpha 3$ " observations are of the nose cone of the carrier rocket. In both cases, doubtful observations have been designated by a question mark.

4. Catalogue of Observations

All processed observations have been listed by date of observation. The report is subdivided into three sections containing the observations of 1957 $\alpha 1$, 1957 $\alpha 2$ and 1957 β respectively. The possible observations of $\alpha 3$ have been grouped with the $\alpha 2$ data.

A serial number is assigned to the observation at the time that it is processed. Observation numbers for 1957 $\alpha 1$ begin with 00100 and continue in numerical order, skipping the numbers from 00138 to 00199 and from 00261 to 00299. Observation numbers for 1957 $\alpha 2$ begin with 00100. For 1957 β , the numbering of observations made in 1957 begins with 00001; for observations made in 1958, the numbering begins again with 00001. A few observations have been discarded as obviously incorrect; their numbers have not been re-assigned.

Some observers have corrected their data for atmospheric refraction. These observations are indicated by an asterisk before the altitude. All MOONWATCH observations

are uncorrected,

All positions are given in the form used for the IBM computers. The headings of the tables have the following meanings;

<u>Symbol</u>	<u>Term</u>	<u>Units</u>
α	Right ascension	Hours, minutes, seconds.
δ	Declination	Degrees, minutes, seconds.
Z	Azimuth	Degrees, minutes, seconds; measured clockwise from north.
h	Angular elevation	Degrees, minutes, seconds; measured upward from the horizon.
MAG.	Apparent magnitude	Dimensionless.

Some stations report their data in degrees and fractions of a degree; in these instances conversions have been made. It is important to note the manner in which three particular stations report their data, since these stations have provided a large fraction of the observations received.

Pic du Midi gives time to 1^s and positions to $0^{\circ}1$.

White Sands records time to units and the error does not exceed one millisecond. Positions are given to $0^{\circ}001$.

Cape Canaveral also reports time to units and gives positions to $0^{\circ}01$.

1957 α1

October 5, 1957

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	i	"	MAG.
00980	Terre Haute	0025	00:50:46							180				47			
00981	Terre Haute	0025	01:46:00							180				40			

October 7, 1957

00102	Boulder-Radio	8035	15:11:05							232				44			2.0
00103	Mt. Stromlo	2600	09:39:27	23	40				-37								
00112	Melbourne	0604	09:34							90				85			
00481	Mt. Stromlo	2600	09:38:21.5	00	00				-55								
00482	Mt. Stromlo	2600	09:38:49.2	23	40				-37								
00483	Mt. Stromlo	2600	09:38:53	23	40				-37								

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October 8, 1957

00105	Sydney	0602	09:39:08	15	50	42			-62	48+0:3							
00106	Sydney	0602	09:40:43.4	20	15				-28	30+0:5							
00107	Mt. Stromlo	2600	09:36:34	12	38				-60								
00108	Mt. Stromlo	2600	09:38:28	15	25				-69								
00109	Mt. Stromlo	2600	09:38:52	16	45				-69								
00110	Mt. Stromlo	2600	09:39:43	20	10				-55								
00111	Mt. Stromlo	2600	09:40:14	21	40				-16	42							
00113	Melbourne	0604	09:38:15+1m											183			48
00114	Melbourne	0604	09:39:15+1m											106			68
00115	Melbourne	0604	09:40:15+1m											53	30		45
00116	Melbourne	0604	09:41:15+1m											43			25
00117	Melbourne	0604	09:45:15+1m											139			61
00135	Fort Churchill	3450	10:15	13	45	52			49	31	30						
00136	Mt. Stromlo	2600	09:37:31	13	37				-65								
00137	Weemera	2601	11:15:25											226	17	52	2

October 8, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	α	δ	"	Z	"	h	"	MAG
00258	Sydney	0602	09:40:42.25	20	15			-28	30					
00484	Mt. Stromlo	2600	09:36:32	12	41			-58	10					
00485	Mt. Stromlo	2600	09:36:37	12	35			-61						
00569	Mt. Stromlo	2600	09:37:31	13	36	54		-64	53					
October 9, 1957														
00120	Mt. Stromlo	2600	09:39:54	16	50			-41						
00121	Mt. Stromlo	2600	09:40:08	17	21			-38						
00122	Mt. Stromlo	2600	09:40:13	17	26			-36						
00123	Mt. Stromlo	2600	09:40:41	18	24			-24						
00124	Mt. Stromlo	2600	09:40:47	18	28			-22						
00125	Mt. Stromlo	2600	09:41:33	19	50			6						
00126	Mt. Stromlo	2600	09:41:38	19	57			5						
00127	Mt. Stromlo	2600	09:42:23	20	45			22						
00129	Sydney	0602	09:41:25.5	18	30	16		-10	40					
00130	Sydney	0602	09:41:30.5	18	35			-9	00					
00132	Sydney	0602	09:41:18.52	18	11	13.4		-14	46	17				
00259	New Brook	5451	11:52:11	15	37			49	06					
00260	Dominion Obs.	2450	10:21:51					82				3	50	2
00486	Mt. Stromlo	2600	09:40:16	17	25			-36						
00487	Mt. Stromlo	2600	09:41:35	20	00			4						
00488	Mt. Stromlo	2600	09:41:44	19	54			5						
00489	Mt. Stromlo	2600	09:42:06	20	31			17	30					
00586	Perth	0601	11:17:14											
00587	Perth	0601	11:18:15											
01009	Edinburgh, Scot.	2653	05:30:28											
								101	20	00	*36	08	00	
								66	56	00	*20	26	25	
								91			*39			

1957 α1

October 10, 1957

MAG.

OBS. NO.	STATION	STA. NO.	U.T.	α h m s	δ ° ' "	Z ° ' "	h i "	MAG.
00128	New Haven	0087	10:23			45	40	3
00204	Ft. Churchill	3450	11:53:21			258 50	44 00	3
00205	Ft. Churchill	3450	11:53:40			234 20	48 00	
00206	Ft. Churchill	3450	11:54:01			214 00	50 00	
00207	Ft. Churchill	3450	11:54:23			201 00	50 00	
00208	Ft. Churchill	3450	11:54:31			185 00	42 40	
00209	Ft. Churchill	3450	11:54:56			171 00	35 00	
00588	Perth	0601	11:17:24.8			66 03	*44 00 20	
00589	Perth	0601	11:17:30.5			63 53	*43 49 19	
00590	Perth	0601	11:17:53.5			55 35	*35 20 00	
00591	Perth	0601	11:19:16			41 30	*15 59 00	
01120	Skalnate Pleso	2711	03:55:32			59 06	24 24	

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October 11, 1957

00202	Armagh	2651	05:28:31			9 48	49 18	0
00203	Armagh	2651	05:30:27			116 18	26 06	0
00211	Woomera	3601	09:40:27.93			25 12 28	10 16 52	
00220	Dominion Obs.	2450	10:17:34	16 25	61 30			
00221	Pic du Midi	2705	05:29:20			190	18	1 to 2
00222	Woomera	3601	09:39:03.37			24 19 00	33 11 04	
00223	Woomera	3601	09:39:35.01			24 45 20	23 34 36	
00224	Vienna	2700	03:52:00.5			356 36	12 36	2
00225	Vienna	2700	03:53:28.2			27 12	21 24	2
00226	Vienna	2700	03:55:59			86 00	16 00	2
00227	Woomera	3601	09:38:21.6			23 04 02	53 19 08	
00230	Woomera	3601	09:40:27.93			24 57 26	13 40 16	
00243	Perth	0601	11:16:30			19 33 00	*48 19 29	
00244	Perth	0601	11:16:45.8			21 15 00	*40 09 52	

1957 al

October 11, 1957 (cont'd.)

OB. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	'	"	MAG.
00245	Perth	0601	11:16:55							21	29	40		*36	02	41	
00246	Perth	0601	11:16:59.5							21	52	00		*34	15	15	
00247	Perth	0601	11:17:16.8							22	13	00		*28	38	14	
00248	Adelaide	0600	09:39:12.5	20	18	39.15	-14	54	55.6								
00326	Mt. Stromlo	2600	09:40:14	17	33		12	30									
00327	Mt. Stromlo	2600	09:40:44	18	00		22										
00328	Mt. Stromlo	2600	09:40:58	18	16		24	30									
00490	Mt. Stromlo	2600	09:39:25.0	16	20		-7										
00677	Salisbury	3602	09:38:54.9	19	48		-29	32									
00678	Salisbury	3602	09:39:11.7	20	17		-17	11									
00679	Salisbury	3602	09:39:11.7	20	05		-14	11									
00680	Salisbury	3602	09:39:03.8	29	05		-22	46									
00681	Salisbury	3602	09:39:09.4	20	14		-18	49									
00682	Salisbury	3602	09:39:11.1	20	16		-17	43									
01121	Skalnate Pleso	2711	03:54:13							41	36			33	42		

October 12, 1957

00200	Herstmonceux	2650	05:29:04	8	15		32										2.5
00201	Cordoba	2800	00:04:17	16	55	38	9	26	26								2
00228	Utrecht	2707	03:50	14	30		52	00									0
00229	Armagh	2651	05:25:54.1	22	27	36.347	58	11	59.08								2
00234	Nilgata	0238	19:53:39							65				17	30		
00236	Perth	0601	11:11:50.5							231	35	00		*30	05	20	
00237	Perth	0601	11:12:39.5							240	52	00		*43	45	59	
00239	Perth	0601	11:16:12.7							7	36	10		*13	47	49	
00309	Cordoba	2800	00:04:17	16	55	38	9	26	26								2.5
00469	Pic du Midi	2705	05:28:55							7	54			24	30		

1957 a1

October 12, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	δ	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00470	Pic du Midi	2705	05:30:33								61	30			33	54			
00556	Bratislava	2701	03:52:19.2	13	21	34		55	13	48									
00582	Armagh	2651	05:26:11.8	22	48	30		65	47										
00592	Perth	0601	11:13:27.3								293	10	20	*52	54	16			
00593	Perth	0601	11:14:43.5								350	46	20	*33	10	31			
00594	Perth	0601	11:15:57								5	52	00	*16	23	25			
00683	Salisbury	3602	09:37:10.0	18	28			-4	33										
00684	Salisbury	3602	09:37:12.5	18	33			-33	03										
00685	Salisbury	3602	09:37:15.0	18	36			-1	55										
00687	Salisbury	3602	09:37:01.9	18	16			-8	37										
00688	Salisbury	3602	09:37:03.6	18	19			-17	54										
00689	Salisbury	3602	09:37:05.1	18	21			-7	10										
00690	Salisbury	3602	09:37:07.2	18	24			-5	55										
00691	Salisbury	3602	09:37:09.5	18	28			-4	44										
00692	Salisbury	3602	09:37:11.2	18	31			-3	49										
00693	Salisbury	3602	09:38:27.1	20	05			26	48										
00694	Salisbury	3602	09:38:29.2	20	07			27	26										
00695	Salisbury	3602	09:38:30.2	20	07			27	26										
00696	Salisbury	3602	09:38:30.2	20	08			27	41										
00697	Salisbury	3602	09:38:32.4	20	10			28	16										
00698	Salisbury	3602	09:38:33.6	20	11			28	31										
00699	Salisbury	3602	09:38:36.5	20	14			29	17										
00726	Sydney	0602	15:26:13	17	10			-67											
01010	Edinburgh, Scot.	2653	05:29:22								146	30		*	24	08			
01122	Skalnate Pleso	2711	03:51:40								1	06			33	54			
01123	Skalnate Pleso	2711	03:52:05								16	42			40	36			
01124	Skalnate Pleso	2711	03:52:35								46	12			47	18			

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1957 al

October 13, 1957

OBS. NO.	STATION	STA. NO.	U.T.	α h m s	δ ° ' "	Z ° ' "	h ° ' "	MAG
00210	Swarthmore	2038	10:15:50			74	25	
00233	Dominion Obs.	2450	10:13:51.0	11 41 36.5	58 39 00	(1950 position)	49 17 24	
00240	Woomera	3601	09:34:03.73			255 17 58	17+1	
00255	Naval Obs.	2011	10:17			90+1		
00304	Helsinki B	6701	02:10:42	8 32	42			
00305	Helsinki B	6701	02:11:47	8 38	15			
00312	Perth	0601	11:08:08.81				*19 18 16	
00313	Perth	0601	11:09:21.6				*28 25 53	
00314	Perth	0601	11:09:59.0				*30 39 22	
00315	Perth	0601	11:10:57.8				*31 41 46	
00316	Perth	0601	11:11:25.8				*27 44 10	
00329	Takada	0250	19:49:06	13 37	51 18	235 44 20		
00330	Takada	0250	19:50:11.9	12 05	38 42	255 40 00		
00331	Osaka Yomiuri	0241	19:47:28	13 19	68 09	274 54 30		
00365	U. of Michigan	2020	10:15:28.5	12 14	24 18	310 35 40		
00366	U. of Michigan	2020	10:15:39.4	11 49	14 12	324 44 00		
00367	U. of Michigan	2020	10:16:32.5	11 35	4 54			
00557	Bratislava	2701	03:49:30.9	13 11 04	67 35 06			
00558	Bratislava	2701	03:52:40.5	10 28 07	3 39 00			
00598	Jockis	6700	03:48:18			41 00	24 42 36	

2 4 3

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October 14, 1957

00252	Princeton	2025	10:10:10.9	14 42	75 30	{ Epoch 1950.0 }		
00253	Princeton	2025	10:11:05.9	11 34	55 00	{ Epoch 1950.0 }		
00254	Princeton	2025	10:16:00.7	12 10	58	{ Epoch 1950.0 }		
00300	Washington, D.C.	8032	10:10:55+1	15 48+7	70+1			
00301	Washington, D.C.	8032	10:11:09+1	13 00+4	56+1			
00302	Washington, D.C.	8032	10:11:39	11 18+4	20+1			
00306	Washington, D.C.	6001	10:09:00	17 10	65			

1957 al

October 14, 1957 (cont'd).

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00307	Agassiz	2052	10:07:58+3	22	44		65	54													3
00308	Agassiz	2052	10:11:46+3	9	30		-	7													3
00310	Woomera	3601	09:32:29										346	10	44		19	42	26		
00311	Woomera	3601	09:33:17										352	14	58		15	19	36		
00319	Perth	0601	11:07:03.47										307	44	00		*21	16	52		
00320	Perth	0601	11:07:46.2										323	33	00		*17	19	11		
00321	Perth	0601	11:08:01.3										328	03	40		*15	33	45		
00324	Naval Obs.	2011	10:11:25.6										56	36			29	27	24		2
00332	Musashino	0233	19:46:13	13	12		54	10					54	06			27	24			1.5
00334	Shizuoka	0247	19:45:49																		2
00335	Nagoya	0236	19:47:49																		1.5
00336	Otaru	0243	19:45:30																		2
00337	Toyama	0254	19:45:36																		3
00459	Takaoka	0270	19:46:04																		1.5
00460	Akita	0200	19:44:18	14	58		74	11					90				16	42			2
00461	Akita	0200	19:45:14	11	40		56	16					63	30			51	36			3
00471	Pic du Midi	2705	05:26:08										50	18			21	30			2
00542	Bedford	3002	10:09:17.9	22	40	48	64	54					54	30			22				2
00543	Bedford	3002	10:09:38.1	23	08	48	70	41									25	24			2
00544	Bedford	3002	10:10:33.6	6	31	54	75	47													2
00545	Bedford	3002	10:06:40.1	7	26	30	23	12													2
00546	Bedford	3002	10:07:40.4	8	24	06	-	4	19												2
00554	Ondrejov	2702	03:46:36	9	52	30	19	40													2
00555	Ondrejov	2702	03:52:42	4	07	00	88	17													2
00559	Bratislava	2701	03:45:07.4	15	42	30	85	15	48												2
00560	Bratislava	2701	03:45:59.7	10	42	36	72	32	30												2
00561	Bratislava	2701	03:47:15.2	9	55	02	21	10	42												2
00570	Perth	0601	11:06:25.0																		2
00571	Perth	0601	11:06:29.5																		2
00575	Stockholm	2708	03:44:32	4	32	48	50	51					292	01			23	05			3
00576	Stockholm	2708	03:44:40	4	47	06	4	08					293	09			23	06			3
00577	Stockholm	2708	03:44:54	5	12	36	1	03													3

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1957 α1

October 14, 1957 (cont'd).

OBS. NO.	STATION	STA. NO.	U.T.	α h m s	δ ° ' "	z ° ' "	h ° ' "	MAG.
00595	Perth	0601	11:06:29.5					
00730	North Canton	0053	10:07:47					
00731	State College	0060	10:10:25	12 52		293 08 40	*23 06 04	
01106	Boston U.	2054	10:10:42.05	6 48 44	56 15		*11 12	
01107	Boston U.	2054	10:10:43.27	6 56 13	73 53 24			
01108	Boston U.	2054	10:10:44.50	7 03 04	73 12 04			
01109	Boston U.	2054	10:10:46.88	7 15 08	72 30 11			
01110	Boston U.	2054	10:10:48.26	7 21 23	71 05 17			
					70 14 46			

1957 a1

October 15, 1957

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	α	δ	Z	h	o	"	MAG.
00317	Meanook	5450	11:38:00	8	34			32 36	90 54	37	57	18	1
00322	Naval Obs.	2011	10:07:43+17 ^s	11	45+5			58+1/4°					1
00338	Washington, D.C.	8032	10:06:04+1 ^s	10	46+5			33+1/2°					1
00339	Washington, D.C.	8032	10:06:55+1	10	40+5			21+1/2°					1
00340	Washington, D.C.	8032	10:07:31+1	10	12	35.3		24-29 27	(1950.0)				
00361	Lick Obs.	2005	13:19:04.3+08.5	10	11	56.6		22 08 19	(1950.0)				
00362	Lick Obs.	2005	13:19:09.2+08.5	10	02			43 30	(1950.0)				
00368	Athens Obs.	2706	03:44:31	9	58			22 30	53 54	36			2
00369	Athens Obs.	2706	03:45:24						54 30	23			
00370	Musashino	0233	19:40:53.5	16	00			74 00					
00373	Takaoka	0270	19:39:43	12	15			57 14					
00374	Takada	0250	19:38:50	11	44			48 00					
00375	Takada	0250	19:39:59	12	45			57 22					
00376	Takada	0250	19:40:25	11	10			16 20					
00378	Kanazawa	0221	19:39:48	9	12			2 30	0	45	06		2
00379	Kanazawa	0221	19:41:42										
00404	Colgate U.	2044	10:03:53	11	46			53 28	159 00	63	24		
00406	Millbrook	0045	10:08:12	11	19	10		20 50					
00407	Cambridge	0099	10:06:47										
00408	Washington, D.C.	0014	10:06:09										
00409	Harrisonburg	0703	10:07:18										
00472	Pic du Midi	2705	05:16:35						328 06	17	18		
00473	Pic du Midi	2705	05:17:23						328 36	27	42		
00474	Pic du Midi	2705	05:17:50						328 48	38	36		
00475	Pic du Midi	2705	05:18:22						329 48	52	06		
00476	Pic du Midi	2705	05:18:24						329 54	53	48		
00527	State College	0060	10:04:10	8	27			72 15					
00528	State College	0060	10:05:41	11	27			54 30					
00529	Schenectady	0081	10:05:59	8	11			43 06					
00578	Stockholm	2708	03:39:37	3	51	24		4 03					
00579	Stockholm	2708	03:39:50	4	11	36		1 48					
00580	Stockholm	2708	03:40:05	4	07	00		- 1 03					

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OBS. NO.	STATION	STA. NO.	U.T.	α		δ		Z	h		MAG.
				h	m s	°	' "	°	' "	' "	
00581	Stockholm	2708	03:40:18	4	58 00	- 3 30					
00700	Bratislava	2701	03:41:16.3	6	47 06	78 05 12					
00701	Bratislava	2701	03:42:42.8	8	56 00	12 04 30					
00732	NYC B	8510	10:04:38	23	00	65 36					
00733	NYC B	8510	10:05:36	4	08	87 42					
00734	NYC B	8510	10:07:34	9	33	23 39					
00735	NYC B	8510	10:08:16	9	34	- 1 00					
00736	NYC B	8510	10:08:40	9	38	- 8 18					
00737	NYC B	8510	10:08:47	9	37	-10 00					
01008	Hastings	6011	10:06:10.5					32		36	
01125	Skalnate Pleso	2711	02:05:12.8	11	22 00	17 11					
01126	Skalnate Pleso	2711	03:41:06.4	2	58 36	53 45					
01127	Skalnate Pleso	2711	03:41:34.4	5	02 00	44 22					
01128	Skalnate Pleso	2711	03:42:44.5	7	37 18	5 30					

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00341	Colgate U.	2044	10:58:40	1	59 48:174	72 13 10:09					1
00342	Princeton Obs.	2053	09:59:08.5	1	20	79 30					1
00343	Princeton Obs.	2053	09:00:46.3	8	28	31 18					1
00344	Princeton Obs.	2053	09:01:29.6	8	52	6 12					
00347	Dominion Obs.	2450	09:58:59.5	5	55 41.4	42 37 57					
00364	Dover	0039	10:00:08.4	10	30	49 45 00					3 to 1
00371	Naval Obs.	2011	10:00:52+5s					37	48		
00372	Fort Monmouth	3006	10:00:18					51+5	75 30+30'		3 or 2
00380	Lincoln	0038	11:36:25.4	7	01	20 36					
00381	Cambridge	0099	09:59:50.2					275	59 30		
00382	Cambridge	0099	10:00:23.4					227	64 30		
00383	Cambridge	0099	10:00:35.6					208	60 30		

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October 16, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00384	Cambridge	0099	10:00:37.6							205	30			58	30			
00385	Bedford	3002	09:57:44							312	21			32	45			
00386	Bedford	3002	09:58:55							267	50			60	38			
00387	Bedford	3002	10:01:32							173	40			39	57			
00388	Bedford	3002	10:03:23							161	10			17	47			
00389	Bedford	3002	10:05:00							158	10			8	22			
00390	Cambridge	0099	09:59:30	5	20													
00391	Milton	6003	09:59:07	2	28													
00392	Milton	6003	09:59:48	3	01													
00393	Milton	6003	10:00:05	4	51													
00394	Milton	6003	10:00:45	6	20													
00395	Milton	6003	10:01:29	7	21													
00396	Milton	6003	10:02:31	8	05													
00397	Milton	6003	10:03:09	8	21													
00398	Dover	0039	10:00:08.4	10	30													
00399	Milbrook	0045	10:00:02	2	03													
00400	Milbrook	0045	10:00:45	7	22													
00401	Schenectady	8038	09:59:46	5	47													
00402	Sacramento	0007	13:13:02.9	8	42	30												
00403	Red Bank	0040	10:00:18							51				75	30			
00477	Lick	2005	13:12:46.7	9	01	54.0												
00478	Lick	2005	13:12:50.7	9	03	22.8												
00479	Lick	2005	13:12:52.7	9	03	59.3 ^s												
00480	Lick	2005	13:12:56.7	9	05	20.4												
00494	Pic du Midi	2705	05:11:03							313	24			35	00			
00495	Pic du Midi	2705	05:12:27							303	30			53	36			
00496	Pic du Midi	2705	05:13:08							261	42			69	12			
00497	Pic du Midi	2705	05:13:17							242	06			71	24			
00498	Pic du Midi	2705	05:14:20							175	54			53	18			
00499	Pic du Midi	2705	05:15:13							160	54			35	18			
00500	Pic du Midi	2705	05:15:31							160	12			30	12			
00501	Pic du Midi	2705	05:15:59							158	24			26	36			

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October 16, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	m	s	MAG.
00502	Pic du Midi	2705	05:17:24							156	36			15	18		
00540	Mansfield	8034	09:59:19	2	39		56	36									
00541	Mansfield	8034	09:59:59	5	08		43	18									
00547	Bedford	3002	10:00:24.4	5	46	36	21	33									
00548	Bedford	3002	10:05:35.8	6	08	42	15	29									
00710	Athens Obs.	2706	03:40:58	9	19		-11	24									
01129	Skalnate Pleso	2711	03:35:06.6	2	01	36	41	22									
01130	Skalnate Pleso	2711	03:35:25.6	2	59	00	37	44									
01131	Skalnate Pleso	2711	03:36:28.1	5	50	36	12	42									
01132	Skalnate Pleso	2711	03:39:20.1	8	12	00	-23	57									

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00351	Westover	3011	09:51:12				312	13		29	33			29	33		
00352	Westover	3011	09:51:18				311	49		31	15			31	15		
00353	Westover	3011	09:51:22				310	24		32	29			32	29		
00354	Westover	3011	09:51:30				308	13		35	40			35	40		
00355	Westover	3011	09:54:48				166	06		30	08			30	08		
00356	Westover	3011	09:54:49				165	32		29	18			29	18		
00357	Westover	3011	09:54:57				164	48		27	48			27	48		
00358	Westover	3011	09:55:11				163	43		25	00			25	00		
00363	Pasacal	8008	13:05:57.550														
00466	Las Cruces	0042	11:28:15	5	45	48	42	26		12							2.5
00467	Lincoln	0038	11:29:34.5	6	30	00	7	30									
00468	Lincoln	0038	11:29:46.2	6	42		2	00									
00503	Pic du Midi	2705	05:04:47				305	12		27	54			27	54		
00504	Pic du Midi	2705	05:05:08				299	42		33	54			33	54		
00505	Pic du Midi	2705	05:05:36				288	06		42	24			42	24		
00506	Pic du Midi	2705	05:05:51				278	54		47	24			47	24		

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October 17, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	m	"	MAG.
00507	Pic du Midi	2705	05:06:14							255	42			53	54		
00508	Pic du Midi	2705	05:06:35							233	12			54	24		
00509	Pic du Midi	2705	05:06:41							228	30			54	06		
00510	Pic du Midi	2705	05:06:57							210	42			50	54		
00511	Pic du Midi	2705	05:07:14							198	48			46	48		
00512	Pic du Midi	2705	05:07:24							192	12			43	24		
00513	Pic du Midi	2705	05:07:28							191	48			43	06		
00514	Pic du Midi	2705	05:07:50							181	48			36	06		
00515	Pic du Midi	2705	05:08:18							175	06			29	24		
00516	Pic du Midi	2705	05:08:47							170	30			24	18		
00517	Pic du Midi	2705	05:08:53							170	12			23	24		
00518	Pic du Midi	2705	05:08:56							170	00			23	24		
00519	Pic du Midi	2705	05:09:02							169	06			21	36		
00520	Pic du Midi	2705	05:09:08							168	18			20	24		
00521	Pic du Midi	2705	05:09:26							167	18			18	54		
00522	Pic du Midi	2705	05:09:36							166	06			17	06		
00523	Pic du Midi	2705	05:09:56							164	18			14	42		
00524	Pic du Midi	2705	05:10:33							162	30			10	54		
00525	Pic du Midi	2705	05:11:02							161	18			8	54		
00526	Pic du Midi	2705	05:11:43							160	06			5	54		
00530	Manhattan	0027	11:29:34	5	56		21	40									
00531	Manhattan	0027	11:30:11	7	01		4	05									
00532	Manhattan	0027	11:30:20	7	15		00	40									
00533	Manhattan	0027	11:31:55	8	16		-23	20									
00534	Milton	6003	09:52:55	3	39		27	36									
00535	Milton	6003	09:55:11	6	57		-18	48									
00536	Schenectady	0081	09:53:02	5	35		21	00									
00537	Sacramento A	0007	13:05:05.0	6	43	30	27	06									
00538	Cambridge	0099	09:52:51.2							268				47			
00539	Bedford	3002	09:51:25.8							301	24			31			
00549	Bedford	3002	09:52:40.0	3	43	18	26	52									

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OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00550	Bedford	3002	09:52:55.6	4	26	06	19	04										
00551	Bedford	3002	09:54:45	6	50	24	-16	38										
00563	Higashimatsuyama	0210	19:29:03	9	24	54	-	8	34									
00564	Osaka Yomiuri	0241	19:34:08	18	28		70											
00565	Hofu	0213	19:29:15	12	47		15											
00566	Kiryu	0223	19:25:15	6	32		88											
00702	Bratislava	2701	03:28:36.1	3	10	04	47	50	54									4
00703	Bratislava	2701	03:29:56.0	6	43	55	8	39	12									3
00711	Athens Obs.	2706	03:30:22	00	50		68	30										2
00712	Athens Obs.	2706	03:30:49	3	15		67	00										
00713	Athens Obs.	2706	03:31:55	5	28		48	36										
00714	Athens Obs.	2706	03:33:26	6	50		9	36										
00715	Athens Obs.	2706	03:33:54	7	54		-12	30										
01133	Skalnate Pleso	2711	03:28:39.6	2	47	06	27	41										
01134	Skalnate Pleso	2711	03:28:49.6	3	14	48	24	25										
01135	Skalnate Pleso	2711	03:29:09.6	3	59	06	19	21										
01136	Skalnate Pleso	2711	03:29:19.6	4	22	36	14	20										
01137	Skalnate Pleso	2711	03:29:29.6	4	43	54	10	38										
01138	Skalnate Pleso	2711	03:29:39.6	5	02	42	6	57										
01139	Skalnate Pleso	2711	03:29:49.6	5	21	00	3	15										
01140	Skalnate Pleso	2711	03:30:09.6	5	50	00	-	2	53									
01141	Skalnate Pleso	2711	03:31:29.6	7	08	12	-19	07										
01142	Skalnate Pleso	2711	03:31:49.6	7	20	54	-21	39										

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OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	'	"	MAG.
00491	U. of Kansas	8037	11:21:16.5	4	26	11	19	05	18	215	86	30	45	12	30		
00492	Portland	0076	12:56:30	6	23		-17	42		89	30	11	12	30			
00552	Milwaukee	0074	09:45:46.5	9	47		-	3	20	92	42	10	10	30			
00573	Manhattan	0027	11:20:37	3	56		39	12		95	00	9	9	30			
00583	Manazuru	0228	19:18:15.7	9	20		53	18		96	48	8	8	30			
00584	Kanagawa	0219	19:21:00							97	30	8	8	06			
00615	Pic du Midi	2705	03:22:33							99	00	8	8	00			
00616	Pic du Midi	2705	03:22:55							100	24	7	7	00			
00617	Pic du Midi	2705	03:23:14							100	36	6	6	48			
00618	Pic du Midi	2705	03:23:28							102	12	6	6	30			
00619	Pic du Midi	2705	03:23:40							103	30	5	5	30			
00620	Pic du Midi	2705	03:23:50							104	30	5	5	00			
00621	Pic du Midi	2705	03:23:55							106	42	4	4	00			
00622	Pic du Midi	2705	03:24:05							108	30	3	3	18			
00623	Pic du Midi	2705	03:24:12							109	24	2	2	24			
00624	Pic du Midi	2705	03:24:20							110	42	1	1	30			
00625	Pic du Midi	2705	03:24:33							101	12	00	00	30			
00626	Pic du Midi	2705	03:24:50							112	30	00	00	06			
00627	Pic du Midi	2705	03:25:05							292	18	29	29	06			
00628	Pic du Midi	2705	03:25:26							283	06	34	34	24			
00629	Pic du Midi	2705	03:25:37							275	36	37	37	30			
00630	Pic du Midi	2705	03:25:52							275	06	38	38	00			
00631	Pic du Midi	2705	03:26:05							266	48	42	42	36			
00632	Pic du Midi	2705	03:26:15							265	48	40	40	54			
00633	Pic du Midi	2705	04:57:14							256	24	42	42				
00634	Pic du Midi	2705	04:57:36														
00635	Pic du Midi	2705	04:57:50														
00636	Pic du Midi	2705	04:57:54														
00637	Pic du Midi	2705	04:58:05														
00638	Pic du Midi	2705	04:58:07														
00639	Pic du Midi	2705	04:58:19														

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OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00640	Pic du Midl	2705	04:58:39	240	06		44	18		06				44	18			
00641	Pic du Midl	2705	04:58:48	234	42		40	24		42				40	24			
00642	Pic du Midl	2705	04:58:57	226	12		226	12		12				43	24			
00643	Pic du Midl	2705	04:59:09	216	42		216	42		42				41	48			
00644	Pic du Midl	2705	04:59:19	211	18		211	18		18				40	42			
00645	Pic du Midl	2705	04:59:33	204	48		204	48		48				37	54			
00646	Pic du Midl	2705	04:59:35	202	42		202	42		42				37	06			
00647	Pic du Midl	2705	04:59:59	193	18		193	18		18				32	54			
00648	Pic du Midl	2705	05:00:22	186	48		186	48		48				28	24			
00649	Pic du Midl	2705	05:00:22	187	00		187	00		00				28	36			
00650	Pic du Midl	2705	05:00:33	184	30		184	30		30				26	42			
00651	Pic du Midl	2705	05:00:37	184	06		184	06		06				25	24			
00652	Pic du Midl	2705	05:00:42	182	30		182	30		30				25	06			
00653	Pic du Midl	2705	05:00:55	178	12		178	12		12				21	54			
00654	Pic du Midl	2705	05:00:59	179	24		179	24		24				22	24			
00655	Pic du Midl	2705	05:01:11	177	42		177	42		42				20	42			
00656	Pic du Midl	2705	05:01:21	176	18		176	18		18				19	36			
00657	Pic du Midl	2705	05:01:23	175	24		175	24		24				18	54			
00658	Pic du Midl	2705	05:01:31	175	00		175	00		00				18	00			
00659	Pic du Midl	2705	05:01:36	173	54		173	54		54				17	24			
00660	Pic du Midl	2705	05:01:45	173	42		173	42		42				16	36			
00661	Pic du Midl	2705	05:01:55	173	24		173	24		24				15	24			
00662	Pic du Midl	2705	05:01:57	171	54		171	54		54				15	06			
00663	Pic du Midl	2705	05:02:07	171	30		171	30		30				14	24			
00664	Pic du Midl	2705	05:02:13	170	36		170	36		36				13	24			
00665	Pic du Midl	2705	05:02:20	170	36		170	36		36				13	00			
00666	Pic du Midl	2705	05:02:33	169	06		169	06		06				11	48			
00667	Pic du Midl	2705	05:02:38	168	42		168	42		42				11	24			
00668	Pic du Midl	2705	05:02:46	168	12		168	12		12				11	00			
00669	Pic du Midl	2705	05:02:52	167	48		167	48		48				8	06			

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OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	°	'	"	•	'	"	MAG.
00670	Pic du Midi	2705	05:03:11				167	18					8	12		
00671	Pic du Midi	2705	05:03:16				166	54					8	24		
00672	Pic du Midi	2705	05:03:27				166	18					7	30		
00673	Pic du Midi	2705	05:03:41				165	42					6	24		
00674	Pic du Midi	2705	05:04:26				163	54					3	54		
00675	Pic du Midi	2705	05:05:02				163	00					1	54		
00676	Pic du Midi	2705	05:05:18				162	54					0	54		
00707	Port Worth	0069	11:22:45	7	47											
00982	White Sands B	5011	11:21:46				243	03	04				*60	23	06	
00983	White Sands B	5011	11:22:02				250	35	13				*60	48	40	
00984	White Sands B	5011	11:22:18				257	32	53				*61	40	44	
00985	White Sands B	5011	11:22:28				261	38	42				*62	22	12	
00986	White Sands B	5011	11:22:40				266	13	26				*63	25	34	
00987	White Sands B	5011	11:22:54				271	13	08				*64	45	11	
00988	White Sands B	5011	11:23:12				276	43	37				*66	31	30	
00989	White Sands B	5011	11:23:32				281	56	24				*68	38	38	
00990	White Sands B	5011	11:23:34				282	24	54				*68	51	07	
00991	White Sands B	5011	11:23:46				285	11	31				*69	59	38	
00992	White Sands B	5011	11:23:58				287	40	30				*71	11	28	
00993	White Sands B	5011	11:24:10				289	58	01				*72	23	35	
00994	White Sands B	5011	11:24:22				292	05	28				*73	31	05	
00995	White Sands B	5011	11:24:36				294	17	10				*74	49	05	
00996	White Sands B	5011	04:24:48				295	55	16				*75	53	42	
00997	White Sands B	5011	11:25:16				299	23	02				*78	10	37	

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OBS. NO.	STATION	STA. NO.	U.T.	α h m s	δ ° ' "	Z ° ' "	h ° ' "	MAG.
00427	Lick	2005	12:48:01.99	5 34 34.88	10 40 25.8			
00428	Lick	2005	12:48:05.41	5 39 50.66	8 57 52.9			
00429	Lick	2005	12:48:08.14	5 43 44.88	7 38 18.4			
00430	Lick	2005	12:48:16.16	5 55 06.55	3 52 29.1			
00431	Lick	2005	12:48:19.75	5 59 22.94	2 14 57.6			
NOTE: Estimated uncertainties in above Lick Observations are 0.1 in time and 10" of arc in each coordinate.								
00462	Bryan	0065	11:13:20	5 49	42 08			
00463	Bryan	0065	11:14:10	7 03	18 09			
00464	Bryan	0065	11:15:10	7 40	- 0 48			
00465	Bryan	0065	11:16:30	8 25	-22 09			
00533	Kansas City	0036	11:12:43	4 34	- 2 30			
00567	Yokkaichi	0258	19:07:38			39 48	57 24	
00574	Lincoln	0038	11:12:53	5 42	-14 48			
00704	Bratislava	2701	03:15:19.8	7 04 48	-23 49 00			
00705	Bratislava	2701	03:15:20.9	7 05 38	-24 00 00			
00706	Bratislava	2701	03:15:50.4	7 18 42	-26 44 12			
00708	Fort Worth	0069	11:12:27	6 25	30 30			
00716	Athens Obs.	2706	03:14:02	1 28	46 00			
00717	Athens Obs.	2706	03:14:43	3 00	35 54			
00718	Athens Obs.	2706	03:15:16	3 47	27 42			
00719	Athens Obs.	2706	03:15:45	5 21	5 42			
00720	Athens Obs.	2706	03:16:58	6 32	-15 12			
01003	C. Canaveral D	8017	09:37:54.170			48 38 24	29 52 29	
01004	C. Canaveral D	8017	09:38:00.690			51 38 55	30 13 31	
01005	C. Canaveral D	8017	09:38:58.180			79 52 27	29 30 29	
01006	C. Canaveral D	8017	09:39:08.175			83 54 44	28 47 34	
01007	C. Canaveral D	8017	09:39:14.180			86 16 05	28 17 59	

1957. α1

October 20, 1957

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	δ	h	°	′	″	MAG.
00562	Conally AFB	0093	11:02:30				180	28	31	30		
00568	Tulsa	0054	11:04:35				180	28	30			
00709	Fort Worth	0069	11:03:03	5	08		28 45					

October 21, 1957

00437	Musashino	0233	08:43:58				137	42	12	42		2
00439	Nagano	0234	08:48:29				155		9			1
00440	Honjo	0212	08:48:34				144		14			
00445	Philadelphia	0058	23:22:00				0		40			1.5
00572	Weston	6004	23:27:30+1 ^m	22	55							
00721	Athens Obs.	2706	16:45:04	20	40							

October 22, 1957

00414	Musashino	0233	08:36:38.7				135		21	24		1
00415	Musashino	0233	08:36:50				120	30	22	30		1
00417	Toyahashi	0255	08:31:08				90		16			1
00418	Suwa	0248	08:37:38	1	34							1
00420	Toyama	0254	08:36:15				90	00	12	30		1
00421	Manazuru	0228	08:36:40				123	30	21			3
00422	Manazuru	0228	08:36:52.4				108	30	21	40		
00423	Manazuru	0228	08:37:53.1				75		15			
00424	Takada	0250	08:37:23	23	15							1
00425	Higashimatsuyama	0210	08:36:29	22	33							0
00426	Sapporo	0245	08:37:52	22	38							3.5
00441	Millbrook	0045	22:54:05	23	03							2
00442	Millbrook	0045	22:54:34	0	02							

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October 22, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	°	'	"	h	'	"	MAG.
00443	Dover	0039	22:53:52	00	07		-10									0
00444	Marhattan	0027	00:43:04	22	48	30	-14	14								1
00722	Athens Obs.	2706	16:33:00	21	42		-13	48								
00723	Athens Obs.	2706	16:33:34	23	39		14	42								
00724	Athens Obs.	2706	16:33:44	00	08		21									
00725	Athens Obs.	2706	16:34:09	1	30		27	00								

October 23, 1957

00448	Kurume Machi	0227	09:24:25							315			17			4
00449	Mitaka	0229	08:23:26							105			22			1
00450	Nagano	0234	08:23:15							112			23			2
00456	Sendai	0246	08:24:49													1
00729	Kurume Machi	0227	08:23:34	1	36		22			98	06		23	54		1

October 24, 1957

00410	Whittier	0012	01:49:02	15	33		77	30								1
00411	Whittier	0012	01:49:07	15	03		77	45								
00412	Whittier	0012	01:49:08	14	55		78	30								
00413	St. Louis	0080	00:13:59	16	34	30	-10	24								
00432	Pasacal	8008	01:48:13.343	16	45	12	7	18								
00433	Pasacal	8008	01:48:23.352	16	44	12	19	00								
00434	Pasacal	8008	01:49:23.392	7	20		85	07								
00435	Pasacal	8008	01:49:27.395	6	33		82	50								
00436	Pasacal	8008	01:49:31.396	6	08		80	36								
00453	San Antonio	0089	00:12:12	18	45		28	34								
00458	Hofu	0213	09:44:43				314	30					9	12		2
																4

October 25, 1957

OBS. NO.	STATION	STA. No.	U.T.	α h m s	δ ° ' "	Z ° ' "	h ° ' "	MAG
00452	Whittier	0012	01:30:36	15 46	21 30			
01143	Skalnate Pleso	2711	17:25:46			272	19	
October 26, 1957								
01144	Skalnate Pleso	2711	17:09:26	11 01 06	62 00			
October 27, 1957								
01145	Skalnate Pleso	2711	16:49:49	13 45 48	49 48			
October 28, 1957								
00597	Woomera	3601	18:46:26			118 59 34	33 11 40	
00740	Armagh B	8036	18:04:48.2			111 36	47 06	
00741	Armagh B	8036	18:04:43.6			118 30	48 00	
01111	Skalnate Pleso	2711	16:29:24.4	13 54 12	50 40			
01012	Edinburgh, Scot.	2653	18:05:40			90 45	*44 20	
01011	Edinburgh, Scot.	2653	18:04:58			171 55	*49 20	
00861	Perth	0601	19:57:05			46 15	*51 17	
00862	Perth	0601	19:58:11			91 05	*51 01	
00863	Perth	0601	19:59:25			120 04	*36 57	
01112	Skalnate Pleso	2711	16:09:35	5 32	46			
October 31, 1957								
00614	Boyden Obs.	2400	01:54:42	12 30 00	-67 48			
00742	Armagh	8036	18:30:37.8			279 19	11 15	
00743	Armagh	8036	18:31:57.6			340 24	19 18	

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October 31, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h m s	° ' "	° ' "	Z ° ' "	h m s	° ' "	MAG.
00864	Perth	0601	19:09:09			63	58	*37	24	
00865	Perth	0601	19:09:40			77	51	*37	50	
00866	Perth	0601	19:10:18.5			93	36	*34	43	
00867	Perth	0601	19:15:51			140	13	*2	48	
01063	Mt. Stromlo	2600	17:36:21	6 43	-16 36					
01064	Mt. Stromlo	2600	17:37:18	8 02	-39 54					
01065	Mt. Stromlo	2600	17:39:47	12 36	-58 06					

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November 1, 1957

OBS. NO.	STATION	STA. NO.	U.T.	α h m s	δ ° ' "	Z ° ' "	h ° ' "	MAG
00599	Jodrell, Radar	4650	18:06:35			180	12 18	
00601	Woomera	3601	18:43:16.6			279	29 51 29	
00602	Woomera	3601	18:44:52.3			242	38 07 12	
00727	Dunsink	2652	18:04:47			310	17 54	
00728	Dunsink	2652	18:05:47			349	17 06	
00744	Armagh, B	8036	18:05:46.7			350	21 30	
00745	Armagh, B	8036	18:06:28.4			11	16 18	
01066	Mt. Stromlo	2600	17:09:55	6 59	-5 18			
01067	Mt. Stromlo	2600	17:10:41	7 55	-22 42			
01068	Mt. Stromlo	2600	17:11:42	9 29	-40 12			

November 2, 1957

01069	Mt. Stromlo	2600	16:43:15	8 27	-18 00			
01070	Mt. Stromlo	2600	16:45:15	10 13	-41 54			
01071	Mt. Stromlo	2600	18:20:04	0 24	-42 36			

November 3, 1957

00600	Jodrell, Radar	4650	18:45:55			164	8	
01013	Edinburgh, Scot.	2653	17:10:27			30	*14 56	

November 4, 1958

01014	Edinburgh, Scot.	2653	18:14:58			348	*13 56	
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November 6, 1958

01015	Edinburgh, Scot.	2653	17:07:58			335	*17 57	
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1957 al

November 7, 1957

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	δ	α	h	m	s	Δ	Z	o	"	h	o	"	MAG
01072	Mt. Stromlo	2600	17:15:18	21	54		-55 12												

November 9, 1957

01073	Mt. Stromlo	2600	15:58:16	20	45		-75 18												
01074	Mt. Stromlo	2600	16:00:27	15	41		-64 42												

November 18, 1957

00755	Jodrell, Radar	4650	19:04:17										00						90
01113	Skalnate Pleso	2711	15:53:00	6	11	42	42 42						(1855 position)						

November 19, 1957

00756	Jodrell, Radar	4650	11:44:59										00						90
00778	Armagh	2651	17:56:44.1										346 06						19 54
00779	Armagh	2651	17:56:58.4										351 30						22 36
01114	Skalnate Pleso	2711	16:26:32	7	59	18	56 37						(1855 position)						

November 21, 1957

00780	Armagh	2651	18:55:03.5										283 24						17 28
00781	Armagh	2651	18:55:48.1										264 54						23 42
00782	Armagh	2651	18:56:35.3										234 36						28 54
01115	Skalnate Pleso	2711	15:51:10	8	17	00	54 48												
01116	Skalnate Pleso	2711	15:22:17	5	10	00	46 36												

13001

1957 al

November 22, 1957

OBS. NO.	STATION	STA. NO.	U.T.	α m s			δ ° ' "			Z ° ' "			h ° ' "			MAC
				h	m	s	°	'	"	°	'	"	h	°	'	
00809	Armagh	2651	17:45:58.0							320	48		27	18		
00810	Armagh	2651	17:46:25.1							323	42		40	12		
01096	Dunsink B	2654	17:46:38.5	13	44		67	30								
01097	Dunsink B	2654	17:46:45.5	14	00		72	15								
01098	Dunsink B	2654	17:48:00	0	24	30	30	36								
01099	Dunsink B	2654	17:48:17	0	30		18	42								
01100	Dunsink	2652	17:48:45	0	42		1	36								
01101	Dunsink	2652	19:20:50	18	57		-	5	18							
01117	Skalnate Pleso	2711	16:16:15	11	32	36	69	36								
01118	Skalnate Pleso	2711	16:18:17	1	28	42	15	48								

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November 23, 1957

00785	Sydney	0602	11:00:19	8	30		-62	30		323	00		11	45		
01017	Pic du Midi	2705	18:08:51							319	45		21	33		
01018	Pic du Midi	2705	18:09:47							314	59		35	15		
01019	Pic du Midi	2705	18:10:29							291	35		62	27		
01020	Pic du Midi	2705	18:11:12							167	29		45	15		
01021	Pic du Midi	2705	18:12:16							162	00		36	09		
01022	Pic du Midi	2705	18:12:36													
01093	Bratislava-Koliba	2701	16:39:39.8	23	39	48	-	1	46	42						
01102	Dunsink	2652	18:07:54	16	25		29	24								
01103	Dunsink	2652	18:08:29	19	07		16	36								
01104	Dunsink	2652	18:09:19	21	16		-	3	06							
01105	Dunsink	2652	18:11:59	23	38		-26	54								
01119	Skalnate Pleso	2711	16:39:16	21	23	18	1	00								

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November 24, 1957

OBS. NO.	STATION	STA. NO.	U. T.	h	m	s	α	δ	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00746	Columbus	0051	00:16:40	17	54		19													
00747	Columbus	0051	00:16:43	18	05		19													
00748	Columbus	0051	00:16:48	18	08		16													
00749	Portland	0076	01:46:13	1	22	30	60													
00750	Boise	0018	01:46:25									270								
00751	Phoenix	0002	01:48:27	13	15		68													
00752	Phoenix	0002	01:48:57	17	00		85													
00753	Phoenix	0002	01:49:12	0	15		61													
00754	Oakland	0006	01:48:56	3	16		25	30												
00760	Arlington	0071	23:02:16	20	35	30	36	25												
00761	Arlington	0071	23:02:39	23	50	18	14	45												
00762	Bryn Athyn	0055	23:01:36	19	35		44													
00763	Bryn Athyn	0055	23:02:39	22	24		-	1												
00764	Springfield, Va.	8509	23:02:21	23	40		28	30												
00766	Silver Spring	0032	23:02:43.5	00	36		30	42												
00773	Sacramento B	8500	01:45:23.6	10	12	18	65	14												
00774	Sacramento B	8500	01:47:19.1	3	42	06	47	27												
00775	Sacramento_B	8500	01:47:19.9	3	39	54	47	33												
00776	North Canton	0053	23:01:31	1	12	03	35	30												
00786	Portland	0076	01:45:53	1	23		60	01												
00787	Perth	0601	14:18:37																	
00788	Perth	0601	14:19:00																	
00789	Washington	6001	23:02:48	23	20		28	00												
00790	Washington	6001	23:03:47	0	50		17	00												
00791	Utrecht B	8002	16:54:23	19	11		42	12												
00792	Utrecht B	8002	16:56:40	20	53		30	36												
00793	Utrecht A	2707	16:54:30	20	09		37	30												
00827	Cambridge	0099	23:03:13																	
00828	Cambridge	0099	23:04:23.4																	

246 43 00 7 20 00
241 16 00 8 20 00
197 23
176 12

1957 α1

November 24, 1957 (cont'd)

OBS. NO.	STATION	STA. NO.	U.T.	α		δ	Z		h		MAG.
				h	m		°	'	°	'	
00829	Cambridge	0099	23:04:32.8	18	35	21 30	174	30	11		
00960	Mitaka	0229	09:24:22	20	37	15 00					
00961	Yokkaichi	0258	09:24:52	22	26	77 00					
00962	Hiroshima	0211	09:23:33	20	55	47 00					
00963	Kanayamachi	0220	09:24:41	20	41	- 10 00					
00964	Takada	0250	09:25:06	20	10	- 14 00					
00965	Sendai	0246	09:25:04	20	10	50 00					
00966	Miyazaki	0230	09:24:56	2	24						
00971	Musashino	0233	09:24:32.7				270	00	32	00	
00972	Niigata	0238	09:24:52				240	00	30	00	
00973	Hofu	0213	09:23:25				0		34	00	
00974	Sendai	0246	09:25:19				208	48	23	18	
00978	Columbus	0051	23:01:49	2	12	22					
01023	Pic du Midi	2705	18:26:54				298	47	10	15	
01024	Pic du Midi	2705	18:27:35				288	53	14	39	
01025	Pic du Midi	2705	18:28:13				275	23	18	57	
01026	Pic du Midi	2705	18:28:54				254	52	22	33	
01027	Pic du Midi	2705	18:29:43				228	35	21	39	
01028	Pic du Midi	2705	18:30:12				215	16	19	39	
01029	Pic du Midi	2705	18:30:43				204	17	16	27	
01030	Pic du Midi	2705	18:31:12				196	49	13	27	
01031	Pic du Midi	2705	18:31:43				190	26	10	45	
01032	Pic du Midi	2705	18:32:15				185	29	8	15	
01033	Pic du Midi	2705	18:32:40				182	41	6	33	
01034	Pic du Midi	2705	18:32:58				181	26	5	45	
01094	Bratislava-Koliba	2701	16:57:48.6	21	14	12	-20	42	12		

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November 25, 1957

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00757	Sacramento A	0007	02:03:50	20	40	36	50	10	12									
00758	Sacramento A	0007	02:04:36.3	22	51	42	8	53										
00759	Sacramento A	0007	02:05:19.2	23	40	48	-14	48										
00765	Milwaukee B	0198	00:36:28	19	30		-18											
00767	Lemont	0022	00:34:09	19	44		-17	30										
00768	Oakland	0006	02:03:15	22	19		58	05										
00769	Oakland	0006	02:03:54.4	22	10	07	62											
00770	Oakland	0006	02:04:27.8	23	35		28	25										
00771	Whittier	0012	02:05:54	22	48		8	18										
00772	Walnut Creek	0011	02:04:17	22	32		38											
00777	Tucson	0003	00:44:42							314								36
00783	North Canton	0053	00:35:24	19	32		21	48										
00784	North Canton	0053	00:21:17	19	27		-22	24										
00794	College	6450	01:57:20							180								22
00798	Sunnyvale B	8508	02:04:15	0	30		62											
00802	Bristol	0097	23:15:23							270								87
00806	Greensboro A	0049	23:15:10							0								46
00812	Danville	0021	23:14:10							90								49
00820	Springfield, Va.	8509	23:15:12	19	15		11											
00824	St. Louis	0080	23:13:41	2	56		49	18										
00825	Rantoul	0092	23:14:06.5	2	05		44	48										
00826	Terre Haute	0025	23:14:26							90								43
00831	Sydney	0602	09:59:22	4	03		-13											28
00832	Washington, D. C.	6001	23:15:10	17	13		25	06										
00833	Washington, D. C.	6001	23:16:35	20	15		-13	00										
00834	C. Canaveral F	8020	23:17:51							101	44	49						*39 48 04
00835	C. Canaveral F	8020	23:17:55							105	46	12						*38 28 41

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November 25, 1957 (cont'd)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00836	C. Canaveral F	8020	23:18:02							110	11	56			*36	09	14	
00837	C. Canaveral F	8020	23:18:07							113	01	34			*34	31	34	
00838	C. Canaveral F	8020	23:18:10							114	34	26			*33	34	05	
00923	Woomera	3601	11:30:32.8							192	46	44			37	48	52	
00967	Mitaka	0229	08:07:47	3	10													
00958	Asahigawa	0201	08:05:34	20	52													
00969	Sendai	0246	08:09:06	1	34													
00970	Takada	0250	09:39:03	17	38													
00975	Kurumemachi	0227	08:06:59							45	00				24	00		
00977	Akron-Canton	0053	00:35:24	19	32													
01035	Pic du Midi	2705	17:09:29							14	27				35	38		
01036	Pic du Midi	2705	17:10:03							47	45				43	32		
01037	Pic du Midi	2705	17:10:28							77	43				41	26		
01038	Pic du Midi	2705	17:11:03							104	27				31	32		
01039	Pic du Midi	2705	17:11:29							115	15				24	14		
01040	Pic du Midi	2705	17:11:55							121	33				19	08		
01041	Pic du Midi	2705	17:12:28							126	30				14	08		
01042	Pic du Midi	2705	17:12:54							129	28				10	38		
01043	Pic du Midi	2705	17:13:25							131	54				7	56		
01044	Pic du Midi	2705	17:13:48							133	15				5	44		
01045	Pic du Midi	2705	17:14:17							134	41				3	38		
01075	Canberra	7000	09:59:59.7	5	26													
01076	Canberra	7000	10:00:50	6	18													

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November 26, 1957

OBS. NO.	STATION	STA. NO.	U. T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00795	Walnut Creek	0011	02:17:25.5	20	22		-17	30		180								
00796	College	6450	02:10:12															
00797	Sunnyvale	0078	02:11:30	22	22	27	37	22	48									12
00799	Waco	0093	00:47:44	21	05		9	18										
00800	Los Alamos	0043	00:46:16	0	30		20											
00801	Los Angeles	0100	02:18:59	19	04		-5											
00803	Fort Worth	0069	00:47:54	20	12		-17											
00804	Big Spring	0083	00:32:43							59								70
00805	Yankton	0061	00:44:29	17	48		6											
00807	Whittier	0012	02:17:24	18	19	00	10	18										
00808	Santa Barbara	0009	02:20:18							180								14
00811	Kansas City	0036	00:45:07	17	25		10											
00813	Bryan	0065	00:49:42	21	42	00	-33	32										
00814	Bryan	0065	00:47:59.5	19	34	00	7	24										
00815	Oakland	0006	02:16:53	19	18	00	-1	15										
00816	Oakland	0006	02:17:22.5	20	22	00	-17	30										
00817	San Angelo	0105	00:42:29	20	40	00	31	27	19									
00818	San Angelo	0105	00:48:50	0	05	00	-29	30										
00819	Tulsa	0054	00:46:14	18	06		9	30										
00821	Sacramento A	0007	02:15:46.2	17	32	34	16	32	24									
00822	Sacramento A	0007	02:17:11.7	20	35	10	-25	09	36									
00823	Manhattan	0027	00:46:13	18	57	32	-8	02										
00830	Organ Pass	9001	00:46:27	2	06	00	42	18										
00839	Peoria	0023	23:22:28							270								63 30
00840	Redbank	0040	21:50:16							43								33 30
00844	Sylacauga B	8506	23:24:31							90								81 33 54
00845	Rantoul	0092	23:21:32.5	17	55		40	18										
00848	Arlington	0071	23:35:05	17	52	30	12	23										
00849	St. Louis	0080	23:22:03	22	13		37	24										

1957 al.

November 26, 1957 (cont'd)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00850	Terre Haute	0025	23:22:55							180				42				
00852	Wilmore	0029	23:23:25							214	06			34				
00853	Harrisonburg	0072	23:15:52							270				51				
00854	Roanoke	0073	23:22:07	19	28		24											
00855	Evansville	0094	23:22:16							270				62				
00856	Cleveland	0052	23:05:20							270				22				
00859	Organ Pass	9001	00:46:36	1	51	48	41	30		Epoch	1855							
00860	San Antonio	0089	00:47:55	20	12		25	30										
00881	Sydney	0602	10:10:01	20	15		-48											
00883	Adelaide	0600	11:42:57	6	20		-66	30										
00887	Amarillo AFB	0064	00:46:07.8							270				61	30			
00888	C. Canaveral G	8039	23:29:44							213	29	28		*47	49	37		
00889	C. Canaveral G	8039	23:29:49							208	17	28		*45	56	38		
00890	C. Canaveral G	8039	23:29:56							201	46	12		*42	59	17		
00891	C. Canaveral G	8039	23:30:04							195	44	49		*39	34	08		
00892	C. Canaveral G	8039	23:30:19							187	30	40		*33	35	24		
00924	Big Spring	0083	00:47:07							270				85				
00925	Kumamoto	0225	09:52:05	19	34		-24											
00926	Kagoshima	0218	09:52:18	19	35		-23											
00956	Near Adelaide	8507	11:43:18							191	06	40		14	32	20		
00976	Asahikawa	0201	08:17:57	20	14		-16	00										
00979	U. of Ill.	2014	23:23:18.0							169	46			24	29			
01001	Albuquerque	0041	00:45:46	0	43	21	57	33	30									
01046	Pic du Midi	2705	17:18:11							315	42			24	18			
01047	Pic du Midi	2705	17:18:49							308	52			36	48			
01048	Pic du Midi	2705	17:19:44							217	20			64	48			
01049	Pic du Midi	2705	17:20:20							171	53			41	48			
01050	Pic du Midi	2705	17:20:49							163	20			28	48			

November 26, 1957 (cont'd)

OBS. NO.	STATION	STA. NO.	U.T.	h m s	° '	"	Z ° '	"	h ° '	MA u
01051	Pic du Midi	2705	17:21:12				159 44		22 18	
01052	Pic du Midi	2705	17:21:41				157 07		16 18	
01053	Pic du Midi	2705	17:22:10				155 41		12 18	
01054	Pic du Midi	2705	17:22:36				155 03		9 18	
01055	Pic du Midi	2705	17:23:13				154 09		6 00	
01062	College, Alaska	6450	02:10:10	20 15 43	-12 40 36					
01077	Mt. Stromlo	2600	10:09:19	3 13	-9 00					
01078	Mt. Stromlo	2600	10:09:29	3 45	-23 24					
01079	Mt. Stromlo	2600	10:09:37	4 16	-33 54					
01095	Bratislava	2701	15:47:14.2	18 57 40	50 43					
November 27, 1957										
00596	Mt. Stromlo	2600	17:29:38.2	10 10 30	15					
00841	Sacramento A	0007	02:25:02.2	19 21 12	-25 52 48					
00842	Waco	0093	00:51:42	00 42	57 36					
00843	Lawton	0110	00:55:02							
00846	Manhattan	0027	00:53:06	17 31	1 57					
00851	Walnut Creek	0011	02:22:43.5	16 56	10 42					
00857	Los Alamqs	0043	00:53:51	19 53	-3					
00858	Phoenix	0002	00:53:16				88		40 30	
00868	Organ Pass	9001	00:53:56.043	18 55	37 50					
00869	Organ Pass	9001	00:54:20.041	20 13	19 24					
00872	U. of Ill.	2014	23:23:43.2				256 16		*24 04	
00873	U. of Ill.	2014	23:25:25.0				198 27		*16 29	
00874	Cambridge	0099	21:53:06.8				244		44	
00875	Cambridge	0099	21:53:49.8				203 30		36	
00876	Cambridge	0099	21:54:13.6				176 30		28	
00877	Los Alamos	0043	22:56:12	19 04	-21 30					

1957 **α1**

November 27, 1957 (cont'd)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	α	δ	Z	h	MAG.
00878	Sylacauga	0001	23:25:32						270 00 00	49 09 14	
00884	Woomera	3601	10:11:50.4						26 21 46	25 34 02	
00885	Woomera	3601	10:13:55.3						105 38 59	26 17 01	
00886	Woomera	3601	10:14:33.7						119 38 56	19 32 54	
00899	Terre Haute	0025	23:23:36.2						270 00	24 00	
00900	Jodrell, Radar	4650	14:15:22						17	9	
00902	Milwaukee	0074	23:23:20						270	24	
00903	Peoria	0023	23:24:30						0	63	
00904	Greensboro A	0049	22:58:10						38 30	77	
00905	Red Bank	0040	21:53:56						305	50	
00906	New Haven	0087	21:52:10						60	53	
00907	Bryn Athyn	0055	21:58:38						280	75	
00908	New Haven	0087	21:52:45								
00927	Mitaka	0229	08:23:52	17	05		31				
00928	Mitaka	0229	08:24:05	17	37		27				
00929	Mitaka	0229	08:24:08	17	50		26				
00930	Toyohashi	0255	08:25:26	22	15		-13				
00931	Hiroshima	0211	08:23:23	9	38		83				
00932	Kanayamachi	0220	08:24:19	21	39		63				
00933	Takada	0250	08:25:54	22	24		-36				
00934	Kyoto	0259	08:24:26	21	52		33				
00935	Higashimatsuyama	0210	08:25:06	20	17		-12				
00936	Manazuru	0228	08:24:30	18	47		22				
00937	Manazuru	0228	08:24:54	19	45		5				
00938	Manazuru	0228	08:26:11	22	05		-32				
00939	Sendai	0246	08:24:00						254 42	25 36	
00940	Sendai	0246	08:25:21						205 18	20	

1957 α1
November 27, 1957 (cont'd)

OBS. NO.	STATION	STA. NO.	U. T.	α h m s	δ ° ' "	Z ° ' "	h ° ' "	MAG.
00941	Musashino	0233	08:24:17			270	38	
00942	Musashino	0233	08:24:57.4			225	41	
00943	Nagoya	0236	08:25:22			180	41	
00944	Takamatsu	0251	08:23:57			6 30	45	48
00945	Shizuoka	0247	08:24:29			270	43	
00946	Honjo	0212	08:25:50			196 30	31	30
00947	Otsu	0269	08:25:00			162	40	
00948	Himeji	0262	08:25:24			141 06	36	06
00949	Mizusawa	0267	08:23:31			267 12	21	36
00950	Mizusawa	0267	08:25:26			202 06	16	24
00951	Mizusawa	0267	08:25:56			194 12	13	
00952	Mizusawa	0267	08:26:11			190 36	11	18
00957	Adelaide	8507	10:12:07			10 26 00	17	45 40
00959	Adelaide	8507	10:14:50			99 13 00	27	29 50
01080	Pic du Midi	2705	17:22:53			261 26	25	18
01081	Pic du Midi	2705	17:24:18			202 56	20	48
01082	Pic du Midi	2705	17:24:30			196 11	18	18
01083	Pic du Midi	2705	17:25:52			177 44	8	18

November 28, 1957

00870	Adelaide	0600	10:13:09			60 15	62	
00871	Adelaide	0600	10:15:00	6 22	-52 40			
00879	Sacramento A	0007	00:53:38.1	00 58 13	24 24			
00880	San Angelo	0105	00:59:00			205 56 30	6	13 45
00894	Albuquerque	0041	00:57:39	19 30 00	20 30			
00895	Phoenix	0002	00:55:03			270	57	
00896	Tucson	0003	00:56:39			1	33	

1957 α1

November 28, 1957 (cont'd)

OBS. NO.	STATION	STA. NO.	U.T.	α h m s	δ ° ' "	Z ° ' "	h ° ' "	MAG.
00897	New Orleans	0030	00:18:02					
00898	El Paso	0104	00:41:15			270	61	
00909	Mitaka	0229	08:25:38			0	48	
00910	Suwa	0248	08:23:55					
00911	Shizuoka	0247	08:23:46	-32 4				
00912	Manazuru	0228	08:25:01	12 15				
00913	Manazuru	0228	08:25:10	-19 59				
00914	Manazuru	0228	08:25:24	-21 12				
00915	Manazuru	0228	08:25:30	-25 38				
00916	Higashimatsuyama	0210	08:25:20	-27 44				
00917	Himeji	0262	08:23:54	-28 30				
00918	Musashino	0233	08:23:42	19 10				
00919	Musashino	0233	08:25:05					
00920	Konko	0224	08:23:56					
00921	Kiryu	0223	08:23:54					
00922	Mizukaido	0231	08:23:58					
00954	Organ Pass	9001	00:56:41.946	19 22 48	-21 26	(Epoch 1875)	17 30	
00955	Organ Pass	9001	00:55:57.969	18 12 18	- 0 49	(Epoch 1855)	20	
01084	Pic du Midi	2705	17:18:55				55	
01085	Pic du Midi	2705	17:19:08				23	
01086	Pic du Midi	2705	17:19:20				20	
01087	Pic du Midi	2705	17:19:34				30	
01088	Pic du Midi	2705	17:20:50				00	
01089	Pic du Midi	2705	17:21:07				00	
01090	Pic du Midi	2705	17:21:26				10	
01091	Pic du Midi	2705	17:22:44				11	
01092	Pic du Midi	2705	17:23:02				12	

1957 al

November 29, 1957

OBS. NO.	STATION	STA. NO.	U.T.	α h m s	δ ° ' "	Z ° ' "	h ° ' "	MAG.
00901	Jodrell, Radar	4650	12:35:30	Slant Range: 1300 km	4	155 30	3	30 30
00953	Adelaide	0600	10:06:55		155 30		7	48
01060	Pic du Midi	2705	17:12:24		211 46			
01061	Mt. Stromlo	2600	10:07:20	18 31 -35 54				

November 30, 1957

00998	Jodrell, Radar	4650	09:11:26	Slant Range: 540 km $\pm$ 30	321	19		
00999	Macclesfield, Radar	4650	13:46:57	Slant Range: 900 km $\pm$ 50	29	9		
01000	Macclesfield, Radar	4650	15:17:36	Slant Range: 240 km	189	40		

1957 α2

October 9, 1957

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	α	δ	"	z	"	h	"	MAG.
α2	00149 Sydney MW	0602	09:39:31	15	18			-44	48					Faint
October 14, 1957														
α2?	00119 Sendai	0246	19:56:43	13	11			55						4
α2	00127 State College	0060	10:18:12	12	17			57						
October 15, 1957														
α2?	00103 U.S. Naval Obs.	2011	10:20:40							111		41		
α3?	00105 Takada	0250	19:43:45	10	10			-16						
October 16, 1957														
α2	00101 Sacramento A	0007	13:27:27	7	25	30		0	54	36				6
October 17, 1957														
α3	00104 Westover	3011	09:55:18											
α2	00114 Sacramento A	0007	13:24:48	7	07	48		-21	18			308	13 35 40	α
October 18, 1957														
α2	00112 Sacramento A	0007	13:21:33.6	6	40	30		-31						6.5
α2	00116 Milwaukee A	0074	10:04:53.5	9	47			54						5
α3	00124 Kurume Machi	0227	19:28:41.9									270	81 30	
α2	00125 Hiroshima	0211	19:40:23	6	18			81						
October 19, 1957														
α2?	00117 Greensboro	0049	09:58:00	8	40			79						6

1957 α2

October 20, 1957

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	°	'	"	h	m	s	MAG.
α3	00118	Waco (Conally AFB)	0093	11:24:27						180			28	31	30	6

October 22, 1957

α2?	00106	Musashino	0233	09:23:51.7						315			22	30		7
α2?	00107	Kurume Machi	0227	09:24:21.8	14	07										6
α2	00120	Las Cruces	0042	01:20:56				55	54	122			70			
α3	00121	Bryn Athyn	0055	23:29:48			18	30		0			71			
α3	00122	Bryn Athyn	0055	23:30:09												
α3	00123	Bryn Athyn	0055	23:30:53			1	30	58							

October 23, 1957

α2	00109	Kurume Machi	0227	09:13:15						315			21			5
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October 24, 1957

α3	00102	San Antonio	0089	00:57:00	16	45		10	50				26			4
α2	00111	Ashigawa	0201	09:07:02						275			85	30		
α2	00130	Cambridge	0099	22:48:07.2						399			88			
α2	00131	Cambridge	0099	22:48:11						312						

October 25, 1957

α2	00144	Skalnate Pleso	2711	16:57:03						0			90			
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October 26, 1957

α2	00145	Skalnate Pleso	2711	16:47:33.6	17	37	18									
α2	00146	Skalnate Pleso	2711	16:47:53.4				55	17	0			52	42		

1957 α2

November 26, 1957

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	δ	"	°	'	"	Z	°	'	"	h	°	'	"	MAG.
α2 00129	Los Alamos	0043	01:25:01	21	14		10	48												
α2? 00132	Sacramento A	0007	03:05:05.6	21	15	28	-32	25	12											

November 27, 1957

α2? 00143	Amarillo AFB	3010	00:53:06.6																	4
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265

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November 29, 1957

α2 00138	Sac Peak	2043	01:14:59	19	09		-17	36												
α2 00139	Organ Pass	9001	01:14:13	18	25	36	15													
α2 00140	Organ Pass	9001	01:14:53	19	24	48	-	6	48											
α2 00147	Skalnate Pleso	2711	16:16:18	10	23	00	66	20												
α2 00148	Skalnate Pleso	2711	16:17:38	6	04	18	49	08												

1957 BETA

November 4, 1957

OBS. NO.	STATION	STA. NO.	U.T.	α			δ	ϵ			Z	θ			MAG.
				h	m	s	°	'	"		°	'	"		
00002	Quito, B	5801	09:29												
00011	Mitaka	0229	20:00:11	10	50		12				160				2
00012	Kiryu	0223	19:58:15	13	12		11	30							2
00178	Perth	0601	19:44:01								25	37		19 06	2
00179	Perth	0601	19:44:31								25	38		25 02	
00497	Canberra	7000	17:56:48.5	3	56		-13	36						20 55	
00498	Canberra	7000	17:56:55.5	4	47		6	54							
00499	Canberra	7000	17:59:03.5	5	35		21	06							

November 5, 1957

00001	Navy	8010	05:04:38												
00003	Vienna	2700	04:41:09.6								200			25	
00004	Vienna	2700	04:42:05.8								121	30		16 42	
00005	Mt. Vaca	8011	13:16:59+1s	12	39		-1	00			96	06		12 54	
00010	Los Altos	0005	13:15:58	11	20		-20								1
00013	Navy	8012	09:48								170			45	Bright
00014	Quito, B	5801	09:42:57	11	32		71								1 to 5
00017	Mitaka	0229	20:10:44	07	55		-4								
00018	Kurume Machi	0227	20:09:47								90	00		70	
00019	Kurume Machi	0227	20:11:15.9								90	00		74 18	
00020	Suwa	0248	20:11:04.5	10	32	00	11	00							1
00021	Kanaya Machi	0220	20:10:40	11	55		13								4
00022	Ichinomiya	0215	20:10:35	11	30		17								-1
00023	Yokkaichi	0258	20:10:48	11	32		16								0
00024	Shizuoka	0247	20:10:49												2
00025	Nagoya	0236	20:11:04								45	00		66 00	1
00026	Nagoya	0236	20:10:42	10	04		3				135	00		46 00	1
00027	Sendai	0246	20:10:19	10	03		22								1
00028	Sendai	0246	20:11:23												4
00029	Sendai	0246	20:12:37								189	30		45 42	1
00030	Sendai	0246	21:13:05								42	48		31 12	2
											38	00		19 24	3

1957 BETA
November 5, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00031	Sendai	0246	20:13:51							34	36			9	30			4
00032	Fukuoka I	0205	20:10:30							90	00			19	30			1
00033	Manazuru	0228	20:11:39	13	10		58											2
00034	Manazuru	0228	20:11:02	9	10		37											0
00035	Tohoku	0252	20:13:37	13	40		53											1
00037	Hofu	0213	20:11:16							87	18			23	30			2
00038	Kiryu	0223	20:10:41	08	24		- 5											1
00039	Chunichi	0204	20:10:48	11	35		8											2
00040	Kumamoto	0225	20:11:00	13	42		20											1
00041	Mitaka	0229	20:10:22.4	07	17		-18	30										0
00042	Mitaka	0229	20:10:29.0	07	27		-13	48										3
00043	Mitaka	0229	20:10:35	08	15		16	30										
00044	Mitaka	0229	20:11:09.9	09	12		27	30										
00045	Mitaka	0229	20:11:19.4	10	02		41	12										
00061	Sendai	0246	20:11:32	08	28		0			237	40			*37	29			2
00102	Perth	0601	19:50:13							239	01			*39	57			
00103	Perth	0601	19:50:30							270	32			*51	54			
00104	Perth	0601	19:51:49							330	19			*46	28			
00105	Perth	0601	19:53:30							347	45			*33	17			
00106	Perth	0601	19:54:33.5							352	48			*27	39			
00107	Perth	0601	19:55:02.6							06	56			*07	26			
00161	Perth	0601	19:57:36															
00169	Bratislava	2701	04:41:56.8	14	01	07	11	00	30									
00500	Mt. Stromlo	2600	16:22:20.6	09	06		-43	12										
00501	Mt. Stromlo	2600	16:23:21.6	09	08		-25	30										
00502	Mt. Stromlo	2600	16:24:19.6	09	21		- 9	18										
00503	Mt. Stromlo	2600	18:07:59.5	03	13		- 9	00										
00504	Mt. Stromlo	2600	18:09:46.5	03	56		12	36										
00505	Mt. Stromlo	2600	18:10:17.5	04	07		18	30										
00506	Mt. Stromlo	2600	18:10:30.3	04	18		21	42										

1957 BETA

November 6, 1957

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00057	China Lake	8013	13:27:18.05							270	10			34	35			1.1
00116	Perth	0601	20:04:11							303	23			*29	08			
00114	Perth	0601	20:02:16							267	12			*29	57			
00117	Perth	0601	20:05:16							321	40			*23	48			
00115	Perth	0601	20:02:28							269	13			*30	15			
00006	Lemont, Ill.	0022	11:46:18							0				32				-2
00008	Bryn Athyn, Pa.	0055	10:01:45	14	10					19								0
00009	St. Paul, Minn.	0035	11:45:59	12	02					16	30							1
00015	Yerkes	2042	11:46:19.0	06	12					11								0
00046	Kagoshima	0218	20:21:36	12	40					60								0
00047	Kumamoto	0225	20:21:37	12	34					50	18							0
00048	Kochi	0264	20:22:28	16	44					63	00							0
00049	Kanaya Machi	0220	20:33:27											8	00			0
00051	Chunichi	0204	20:33:52							355	00			8	00			2
00054	Yerkes	2042	11:46:19.0	06	13	27				356	36							
00055	Ondrejov	2702	04:53:44.7							302	36			25	42			0 to
00056	Princeton	2025	10:01:50	14	15					19								invisible
00058	Sydney Obs.	2601	16:37:53.4	08	26													
00059	Sydney	0602	16:34:36.5	07	07					24	12							
00060	Sydney	0602	16:36:25	08	30					-30	12							
00062	Musashino	0233	20:22:04.7							-09	30							
00063	Musashino	0233	20:22:25.4											26	54			0
00064	Kurume Machi	0227	20:21:37.9							294	48			27	00			0
00065	Niigata	0238	20:22:16							314	54			22	42			0
00066	Niigata	0238	20:22:40							270	00			35	42			0
00067	Kanaya Machi	0220	20:21:26	05	14					270	00			39	42			0
00068	Kanaya Machi	0220	20:22:07	20	30					300	00							0
00069	Inchinomiya	0215	20:21:31	04	13													1
00070	Hashimoto	0209	20:22:17	20	32													0
00071	Hashimoto	0209	20:21:24	04	48													0

1957 BETA

November 6, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	α	δ	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00072	Yokkaichi	0258	20:23:39	23	27			79				00				21				0
00073	Kashiwabara	0222	20:22:28																	1
00074	Asahigawa	0201	20:24:17	05	00			44												1
00075	Shizuoka	0247	20:21:33	04	02			25												1
00076	Isahaya	0217	20:20:52	11	10			22												1
00077	Nagoya	0236	20:22:47									00				20	00			0
00078	Sendai	0246	20:22:37	03	48			29												0
00079	Nagasaki I	0235	20:22:36	13	50			47												0
00080	Manazuru	0228	20:22:36									333	00			22	48			0
00081	Manazuru	0228	20:22:44									337	00			21	18			1
00082	Tokushima	0253	20:21:52									00	00			19				1
00083	Mizukaido	0231	20:22:16									316				24	30			2
00084	Fuchu	0214	20:22:06	11	10			65												0
00085	Oita	0239	20:21:24									43	00			31	48			
00086	Oita	0239	20:22:03									40	36			24	00			
00087	Kure	0226	20:21:36	11	10			56												
00088	Saga	0244	20:16:46	13	50			48												0
00089	Osaka-Yomiuri	0240	20:20:44	20	42			88												1
00090	Kiryu	0223	20:23:30	20	38			78				270	00			45	00			0
00091	Kanagawa	0219	20:21:58																	1
00092	Akita	0200	20:23:06	04	14			50												0
00093	Honjo	0212	20:21:50	04	18			14												1
00094	Otaru	0243	20:22:45	06	07			-20												1
00095	Kyoto	0259	20:22:18	22	22			88												0
00096	Osaka	0240	20:23:16									180				32	12			0
00097	Sapporo	0245	20:24:49	06	03			44												0
00098	Sapporo	0245	20:22:48	05	53			-05												0
00100	Sacramento A	0007	13:28:21.8	12	36	39		41		08										
00108	Perth	0601	18:17:47.3									109	02			*32	59			
00109	Perth	0601	18:18:02									103	27			*31	12			
00110	Perth	0601	18:18:25.5									96	45			*29	37			

1957 BETA
November 6, 1957 (cont'd.)

OBS NO.	STATION	STA. NO.	U.T.	h	m	s	δ	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00011	Perth	0601	18:20:34.6								71	53				*15	54		
00112	Perth	0601	18:20:52								69	29				*14	21		
00113	Perth	0601	20:01:16								253	20				*25	50		
00125	St. Louis	0080	11:44:38	4	52			32	42										-2
00126	Whittier	0012	13:26:54	4	17			20	12										0
00127	Whittier	0012	13:27:26	3	22			48	48										
00128	Whittier	0012	13:28:13	23	05			74	18										
00129	Santa Barbara	0009	13:28:13								0				31	30			1
00130	Los Altos	0005	13:27:33	10	05			15	20										0 to 5
00131	Los Altos	0005	13:28:20	13	44			47	20										
00132	Milwaukee A	0074	11:46:58.5	5	43			62	30										
00133	Milwaukee A	0074	11:47:24	5	57			54	20										
00134	Milwaukee A	0074	11:48:09	18	04			47	40										
00135	Milwaukee A	0074	11:49:25	18	06			44	55										
00150	Lick	2005	13:28:02.23	12	13	15.70		46	58	46.6									
00151	Lick	2005	13:28:04.55	12	27	17.15		48	08	42.5									
00152	Lick	2005	13:28:06.71	12	39	54.88		48	42	04.3									
00153	Lick	2005	13:28:09.98	12	58	09.44		50	02	55.6									
00154	Lick	2005	13:28:13.10	13	15	38.43		51	01	43.0									
00162	Armagh	2651	06:37:07.2								164	54			16	24			
00165	Armagh	2651	06:38:20.4	14	32			19	30										
00167	Dunsink	2652	06:37:37								297	30			29	42			
00170	Bratislava	2701	04:51:54.8	8	37	49	-12	19	18										

November 7, 1957

00016	Dahlgren	6008	10:11:53.2								51	14	42		15	20	00		
00101	New Haven A	0087	10:11:31.4	10	09	33	21	25	40										
00118	Perth	0601	18:25:08								176	29			*37	22			
00119	Perth	0601	18:26:46.8								145	21			*50	39			
00120	Perth	0601	18:28:04								99	38			*38	33			

November 7, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	α h m s	δ ° ' "	Z ° ' "	h ° ' "	MAG.
00121	Perth	0601	18:29:26.5			70 34	*36 27	
00122	Perth	0601	20:10:48.5			253 03	*15 11	
00123	Perth	0601	20:11:20.5			258 03	*16 20	
00124	Naval Obs.	2011	10:11:26			71 48	19 52	
00155	Salisbury	3602	16:43:33.1	8 36	-32 30			
00156	Salisbury	3602	16:43:49.1	8 38	-27 30			
00157	Salisbury	3602	16:44:11.05	8 40	-21			
00163	Armagh	2651	06:47:50.7			189 18	39 06	
00166	Armagh	2651	06:48:08.9	10 08	19 42			
00181	State College	0060	10:11:20			90	22	1 to 4
00182	N.Y.C.	0046	10:14:43	11 21	28			
00183	Baltimore	0088	10:11:11			90	34	1
00184	Bryn Athyn	0055	10:08:16	8 30	-44			4 to 0
00185	Harrisburg	0057	10:11:12.5			90	25	1 to 3
00186	Milton	6003	10:13:31					
00187	Millbrook	0045	10:12:11	14 31	57			
00507	Mt. Stromlo	2600	16:42:55.5	12 27	29 20			
00508	Mt. Stromlo	2600	16:43:54.5	4 26	-53 48			
00509	Mt. Stromlo	2600	16:46:50.0	4 46	-32 48			
				7 19	22 06			

November 8, 1957

00136	Woomera	3601	15:03:04.9	180	56	14	33	19	20
00137	Woomera	3601	16:51:32.8	165	49	06	41	17	08
00138	Woomera	3601	16:51:54.2	163	56	18	44	25	24
00139	Woomera	3601	16:53:07.4	131	34	16	52	21	20
00140	Woomera	3601	16:53:39.6	112	35	34	52	05	48
00141	Woomera	3601	16:54:25.3	06	33	12	46	33	36
00142	Woomera	3601	18:35:04.4	241	18	22	10	48	08
00143	Woomera	3601	18:36:14.8	249	47	38	13	34	48
00144	Woomera	3601	18:36:54.8	255	55	34	15	42	04

1957 BETA
November 8, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00145	Woomera	3601	18:37:32.6							262	22	56		17	06	37		
00146	Woomera	3601	18:37:46.6							264	57	34		16	25	24		
00147	Sydney	0602	16:54:49	01	10		-49											
00148	Sydney	0602	16:55:16	1	20		-43	30										
00173	Perth	0601	16:51:32							117	45			13	00			5 to 3
00174	Perth	0601	18:33:23							203	03			27	58			
00175	Perth	0601	18:34:12.8							201	39			34	57			
00176	Perth	0601	18:34:18.8							201	26			35	26			
00177	Perth	0601	18:34:40							200	49			38	11			

November 9, 1957

00149	Sydney Obs.	2601	16:59:12.6	0	09		-35	30										
00158	Salisbury	3602	17:01:37.08	4	15		-31	42										
00159	Sydney	0602	15:18:27	8	42		19	48										
00160	Sydney	0602	17:02:08	1	58	18	-13	38										
00164	Armagh	2651	07:07:14.3							304	06			27	36			-1

November 13, 1957

00168	Harestua	2709	05:54:51	21	28	08	70	22	34									
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November 23, 1957

00510	National Univ. Canberra	7001	10:53:18.6	6	48		-32	24										
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November 24, 1957

00171	Perth	0601	14:21:35.2							155	32			45	26			1.5
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1957 BETA

November 26, 1957

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	°	'	"	Z	°	'	"	h	m	s	°	'	"	MAG.	
00172	College, Alaska	6450	16:34:50											180										67
00491	College, Alaska	6450	16:35:59	14	05	31	19	05	57															

November 28, 1957

00180	College, Alaska	6450	16:27:30											180										58
00511	Mt. Stromlo	2600	10:45:21.1	5	34		-	9	12															
00512	Mt. Stromlo	2600	10:43:47.5	5	44		-	34	54															
00513	Mt. Stromlo	2600	12:27:44.0	22	31		-	11	24															

November 29, 1957

00188	College, Alaska	6450	16:22:34											180										52
00492	College, Alaska	6450	16:22:10	9	21		33	18																
00493	College, Alaska	6450	16:26:46	13	05		11	42																
00514	Mt. Stromlo	2600	10:39:10.0	5	09		-	35	18															
00515	Mt. Stromlo	2600	10:39:47.0	5	07		-	22	12															

November 30, 1957

00189	Woomera	3601	12:15:38.9											220	53	48	31	31	04					
00190	Woomera	3601	12:17:06											237	36	00	51	30	24					

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1957 BETA

December 3, 1957

OBS. NO.	STATION	STA. NO.	U.T.	α h m s	δ ° ' "	Z ° ' "	h ° ' "	MAG.
00191	College, Alaska	6450	15:56:30					
00283	Utrecht, B	8002	05:44:49	15 48	25 30			
00284	Hilversum	8003	05:44:14	21 20	64 30			
00285	Hilversum	8003	05:44:54	17 52	52 36			

December 4, 1957

00286	Hilversum	8003	05:34:03	0 04	57 36			
00287	Hilversum	8003	05:35:23	19 20	66 30			
00288	Steenwijk	8004	05:37:59	15 44	26 18			

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December 5, 1957

00564	Johannesburg	2401	18:28:39	21 48	-38 00			
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December 6, 1957

00192	Suwa	0248	20:41:05	17 18	37			
00193	Mizukaido	0231	20:37:44			8		9

December 7, 1957

00194	Takada	0250	20:29:40	17 40	40			
00195	Suwa	0248	20:29:11	18 12	52			
00196	Yamagata	0257	20:29:17	17 42	52			
00204	Whittier	0012	13:43:03	17 12	33			
00205	Whittier	0012	13:44:19	16 37	20			
00524	Pezinok	7002	05:07:58.0	03 46	30			
00525	Bratislava	2701	05:08:45.1	9 31	70			
00526	Bratislava	2701	05:09:50.8	13 26	81			

1957 BETA

December 8, 1957

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	°	'	"	h	'	"	MAG.
00197	Mitaka	0229	20:17:39	18	35		58									
00198	Toyohashi	0255	20:17:55	17	50		33									
00199	Shizuoka	0247	20:18:05	17	55		51									
00200	Mizukaïdo	0231	20:18:12	17	23		52			31	54		18			
00201	Mitaka	0229	20:17:41							61	54		21			
00202	Mitaka	0229	20:17:36							10			11			
00203	Mizukaïdo	0231	20:16:15													
00206	Whittier	0012	13:31:29	17	08		37	18								
00207	Whittier	0012	13:32:02	16	48		31	24								
00208	Whittier	0012	13:32:34	16	23		21	48								
00565	Johannesburg	2401	17:57:52							299	18		37	30		

153

December 9, 1957

00209	Whittier	0012	13:18:21	17	49		51	48								
00210	Whittier	0012	13:19:20	16	58		39	12								
00211	Whittier	0012	13:21:12	16	09		17	18								
00212	Sacramento	0007	13:19:22.4	16	10	25.8	23	30								
00213	Sacramento	0007	13:21:14.1	15	43	12	6	13	48							
00215	Mitaka	0229	20:09:00	15	53		16									
00216	Suwa	0248	20:05:27	18	03		55									
00217	Shizuoka	0247	20:05:56	17	30		50									
00218	Mizukaïdo	0231	20:07:31	16	40		35									
00219	Mitaka	0229	20:06:15													
00220	Mizukaïdo	0231	20:06:25													
00221	Musashino	0233	20:06:20.2													
00527	Bratislava	2701	04:45:06.7	3	47	30	65	22	30	43	03		20	50		
00528	Bratislava	2701	04:45:51.4	6	54	30	75	02	48	45			19	30		
00529	Bratislava	2701	04:49:22.8	13	33	35	-	0	19	45			22			
00530	Bratislava	2701	04:50:53.8	13	49	19	-12	45	00							
00566	Johannesburg	2401	17:47:56.5	23	36		45	18								
00567	Johannesburg	2401	17:48:17							348	36		13	42		

1957 BETA

December 10, 1957

OBS. NO.	STATION	STA. NO.	U.T.	α h m s	δ ° ' "	Z ° ' "	h ° ' "	MAG.
00222	Los Angeles	0100	13:09:48	15 40	6 30			
00223	Oakland	0006	13:06:44.6	19 48	44 20			
00224	Tucson	0003	13:06:00			20	25	
00225	Los Alamos	0042	13:07:57	14 20	38 30			
00226	Albuquerque	0041	13:06:47	15 00	72 18			
00227	Whittier	0012	13:06:45	16 38	39 18			
00228	Whittier	0012	13:08:15	15 57	22 42			
00229	Portland	0076	15:47:15			270	34	
00241	Suwa	0248	19:56:13	15 42	13			
00242	Sapporo	0245	19:52:17.3	15 32	55 18			
00243	Mitaka	0229	19:54:12			57	22 42	
00244	Sendai	0246	19:53:26			51	29 06	
00245	Kiryu	0223	19:54:45			70	23 30	
00246	Mizukaïdo	0231	19:53:32			45	22 30	
00249	Sacramento	0007	13:05:46.2	16 21 42	33 40 48			
00517	Pic du Midi	2705	04:34:00			69 45	29 15	
00518	Pic du Midi	2705	06:20:29			181 13	43 03	
00531	Pezinok	7002	04:35:36.2	12 44 20	19 21 24			

December 11, 1957

00230	Idaho Falls	0019	12:52:23			90	48	
00231	Denver	0013	12:57:00			149	36	
00232	Albuquerque	0041	12:55:38	14 38	28			
00233	Tucson	0003	12:53:39			38 30	29	
00234	Tucson	0003	12:55:13			70 30	31	
00235	St. Paul	0035	12:52:07	7 39 30	16			
00236	Milwaukee	0074	11:14:47	14 16	-14 25			
00237	Cambridge	0099	11:09:48.4			297	32	
00238	Cambridge	0099	11:11:49.6			228	51 30	
00239	Cambridge	0099	11:13:59.4			188	34 30	
00240	Cambridge	0099	11:15:23.8			178	24 30	

1957 BETA

December 11, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	α			δ	"	Z	"	h	"	MAG.
				h	m	s	°	'	°	'	°	'	"
00247	Whittier	0012	12:52:11	17	27		52	30					
00248	Los Alamos	0042	12:54:01	14	05		53	30					
00258	Mitaka	0229	19:41:34	15	30		28						
00259	Mizukaide	0231	19:39:54						45		24	30	
00267	Sapporo	0245	19:39:02.4	15	04	48	48	02					
00268	Manazuru	0228	19:40:38	16	14		40						
00269	Higashimatsuyama	0210	19:41:31.4	15	42	30	25	42					

December 12, 1957

00250	Harrisonburg	0072	10:58:12						90		74		
00251	Idaho Falls	0019	12:38:27						90		64		
00252	Albuquerque	0041	12:38:42.5	15	10		80						
00253	Albuquerque	0041	12:40:08.5	14	10		36						
00254	Albuquerque	0041	12:43:33	14	10		-10						
00255	Los Alamos	0042	12:40:03	13	50		49	12					
00256	Yerkes	2042	10:56:18	14	30		38	30	111	28	23	30	
00257	Univ. of Ill.	2014	10:59:27.7						61	30	32		
00260	Tucson	0003	12:40:49										
00261	Whittier	0012	12:39:23	16	10		37	54					
00262	Milwaukee	0074	10:56:08.3	14	23		47						
00263	Milwaukee	0074	10:59:14.1	14	02		-05	10					
00264	Milwaukee	0074	11:01:53.9	14	06		-20	55					
00265	Milwaukee	0074	12:38:53	07	50		26						
00266	Los Angeles	0100	12:45:49	15	44		26	24					
00270	Blossom Point	8014	10:57:26.25	10	31		57	30					
00271	Sacramento	0007	12:37:43.9	16	16	06	40	02			24		
00272	Sacramento	0007	14:22:07.6	9	15	42	26	40			48		
00281	Washington	6001	10:55:53	4	49		66	48					
00282	Washington	6001	10:59:57	12	46		-	0			30		
00336	Wright-Patterson AFB	3009	10:56:54						60	18	54	24	

1957 BETA

December 12, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	α			δ	°	"	°	Z	"	°	h	i	MAG.
				h	m	s										
00337	Kagoshima	0218	21:11:04	12	40			40								
00338	Konko	0224	21:10:18							270				79		

December 13, 1957

00273	Akron-Canton	0053	10:41:25	11	10			73								
00274	Tucson	0003	12:26:26							72	30			32		
00275	St. Paul	0035	12:23:41	7	39	45		14								
00276	State College	0060	10:42:39	10	59			37	30							
00277	Bryn Athyn	0055	10:42:20	9	15			50								
00278	Schenectady	0081	10:43:07	10	06			13	06							
00279	Idaho Falls	0019	12:22:49	13	24			55								
00280	Denver	0013	12:27:00							153				36		
00289	Albuquerque	0041	12:24:43	14	03	13		64	35							
00290	Amarillo	0064	12:26:15							90				76		
00291	Wichita	0028	12:25:28.9	9	26	18		33	45							
00292	Cambridge	0099	10:41:42.8							282				39		
00293	Cambridge	0099	10:43:19.0							227				47		
00294	Cambridge	0099	10:44:48							193				37		
00303	Organ Pass (SS)	5001	12:25:46.8	14	32			50	42							
00304	Organ Pass (SS)	5001	12:26:01.2	14	27			46	12							
00305	Organ Pass (SS)	5001	12:26:29.4	14	22	30		38	30							
00308	Tulsa	0054	12:29:50	12	12			-22	20							
00339	Mitaka	0229	19:12:00	15	23			37	30							
00340	Suwa	0248	20:56:02	9	47			8	00							
00341	Yokkaichi	0258	20:55:59	10	08			14								
00342	Kanaymachi	0220	20:58:25	12	09			-18	00							
00343	Kochi	0264	20:56:18.4	11	34			15	12							
00344	Higashimatsuyama	0210	20:54:15.0	7	31	24		32	00							
00345	Mitaka	0229	20:53:52							293	54			34		
00346	Mitaka	0229	20:55:39							249	36			48	18	

1957 BETA

December 13, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	m	s	°	'	"	MAG.
00347	Mitaka	0229	20:58:38							188	54			30	36					
00348	Mizukaido	0231	20:56:24							225				45						
00519	Pic du Midi	2705	05:38:05							169	50			54	45					
00520	Pic du Midi	2705	05:40:07							157	30			28	30					
00521	Pic du Midi	2705	05:40:39							157	15			24	30					
00522	Pic du Midi	2705	05:41:04							155	26			21	30					
00523	Pic du Midi	2705	05:41:31							153	38			18	45					

December 14, 1957

00299	Organ Pass	(BN)	9001	12:09:35.74	14	44	30	64	50											
00300	Organ Pass	(BN)	9001	12:10:35.73	14	14	0	44	03											
00301	Organ Pass	(SS)	5001	12:10:49.2	14	15		39	12											
00302	Organ Pass	(SS)	5001	12:11:00.6	14	14		36	54											
00306	Warner and Swasey		2031	10:26:23	11	32		54	48											
00307	Warner and Swasey		2031	10:27:38	12	26		21	18											
00311	Lawton		0110	12:13:31						157				40	48					
00312	Albuquerque		0041	12:09:48.5	13	50		50												
00313	Idaho Falls		0019	12:11:02	13	25		-10												
00314	St. Paul		0035	12:08:21.5	7	37		13	57											
00315	Amarillo		0064	12:10:41						90				76						
00316	Milwaukee		0074	12:12:38.5	9	57		-21	50											
00317	Harrisonburg		0072	10:27:57						90				72						
00318	Pittsburgh		0059	10:26:58	11	50		48												
00319	Washington		0014	10:29:42																
00320	W. Palm Beach		0016	10:27:41						145				44	30					
00321	Dayton		0082	10:27:33	14	02				12				22						
00322	Lemont		0022	10:26:54	9	45		25	30	90				50						
00324	Tulsa		0054	12:10:54				24												
00333	Univ. of Ill. "B"		2014	12:09:30.9	8	58		67	24											
00334	Washington, D.C.		6001	10:26:46	11	42		15	12											
00335	Washington, D.C.		6001	10:28:36						275	53			*25	05					

1957 BETA

December 14, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	α			δ	°	"	Z	°	"	h	i	MAG.
				h	m	s									
00349	Toyohashi	0255	20:40:04	10	00			9							
00350	Suwa	0248	20:36:44	5	19			46							
00351	Yokkaichi	0258	20:40:19	10	04			13							
00352	Kanaya Machi	0220	20:43:05	12	08			-21							
00353	Chunichi	0204	20:40:20	10	01			11							
00354	Manazuru	0228	20:39:48	8	50			19							
00355	Kochi	0264	20:42:46	12	27			-16							
00356	Konko	0224	20:39:28							270			81	30	

December 15, 1957

00295	Organ Pass (BN)	9001	11:53:05.32	15	01	30		69	40						
00296	Organ Pass (BN)	9001	11:54:45.32	14	03	54		36	50						
00297	Sac Peak (SS)	2043	11:53:05.4	14	47			71	30						
00298	Organ Pass (SS)	5001	11:53:05.4	14	56			69	42						
00325	Bryn Athyn	0055	10:12:02	10	40			21							
00326	Fort Belvoir	0077	10:11:08							0			76		
00327	W. Palm Beach	0016	10:16:14							94	30		30		
00328	Lawton	0110	11:56:23							157	00		53		
00329	Amarillo	0064	11:54:51.5							95			69		
00330	Dayton	0082	10:11:29							90			46		
00331	Cambridge	0099	10:12:13.8										47	30	
00332	Cambridge	0099	10:12:54.2							206			42	30	
00357	Mitaka	0229	18:42:34.9	14	40			10	30						
00358	Yokkaichi	0258	20:23:56	10	08			13							
00359	Kashiwabara	0222	20:23:18	9	51			27							
00360	Kanayamachi	0220	20:23:50	10	26			20							
00361	Manazuru	0228	20:24:04	9	27			8							
00362	Kochi	0264	20:27:11	12	36			-24							
00363	Mizukaido	0231	20:22:21	7	12			28							
00364	Mitaka	0229	20:24:17.5							221	18		48	54	

1957 BETA

December 15, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	'	"	MAG.
00365	Musashino	0233	20:22:47.7														
00366	Himeji	0262	20:27:24								270					47	
00367	Suwa	0248	20:21:01								161					25	
00368	Suwa	0248	20:22:43	5	57			45									
00369	Suwa	0248	20:27:39	8	22			28									
00370	Miyazaki	0230	20:25:34	11	37			-36									
00379	Blossom Point	8001	10:12:27.8	12	56			3									
00430	Welcome	6010	10:10:34.5	11	46	36		24	57								
00431	Welcome	6010	10:11:33	9	05			67									
00554	Mitaka	0229	20:23:37.9	11	05			45									
00555	Mitaka	0229	20:24:01.0	9	00	36		12	33								
00556	Mitaka	0229	20:25:29.4	9	21	48		6	28								
00557	Mitaka	0229	20:25:54.4	10	28	12		-13	37								
				10	40	12		-17	26								

December 16, 1957

00371	Fort Worth	0069	11:38:31	10	47			34	30								
00372	St. Paul	0035	11:39:33	9	22			-10									
00373	Tucson	0003	13:19:58														
00374	Milwaukee	0074	11:36:55.8	7	56			2									
00375	Milwaukee	0074	11:41:49.0	11	40			-33									
00376	Sacramento	0007	13:20:38.8	10	48	33		-8	36								
00377	Organ Pass	9001	11:42:37.46	13	46	48		-12	45								
00378	Sac Peak	2043	11:36:52.8	13	56			56	42								
00388	Suwa	0248	20:05:16	8	05			31									
00389	Suwa	0248	20:07:15	10	04			-0	30								
00390	Suwa	0248	20:08:37	10	57			-18									
00391	Kochi	0264	20:07:48	11	25			11									
00392	Mitaka	0229	18:23:21.8	14	42			21									
00393	Yokkaichi	0258	20:06:51	10	08			13									
00394	Kashiwabara	0222	20:06:20	9	52			27									

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1957 BETA

December 16, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	α		δ		Z		h		MAG.
				h	m	°	'	°	'	°	'	
00395	Takada	0250	20:10:10	10	48	-18						
00396	Kanagawa	0219	20:06:33	9	58	9						
00397	Manazuru	0228	20:05:51	8	14	28						
00398	Manazuru	0228	20:08:21	10	34	-11						
00399	Mizukaido	0231	20:06:26	7	41	28						
00400	Higashimatsuyama	0210	20:06:12	8	39	16						
00401	Yamagata	0257	20:08:20	10	23	-20				81	30	18 42
00402	Mitaka	0229	18:23:49									
00432	Welcome	6010	09:54:42.25	11	10	45						
00433	Welcome	6010	09:56:50.5	12	19	- 0	18					

December 17, 1957

00380	Biloxi	0090	11:21:47							270		55
00381	New Orleans	0031	11:21:58							270		56
00382	New Orleans	0030	11:21:52							270		61 30
00383	Edinburgh, Tex.	0066	11:22:00							45		61 30
00384	Fort Worth	0069	11:20:48	10	59	36	30					
00385	Fort Worth	0069	11:20:58	11	05	32	00					
00386	Fort Worth	0069	11:21:10	11	08	29						
00387	Milwaukee	0074	11:20:36	8	29	-11						
00403	Cambridge	0099	09:37:58.4							201	30	48
00404	Cambridge	0099	09:38:36.8							184		41
00413	Washington	6001	09:39:10	12	13	- 0	18					
00414	Washington	6001	09:43:25	12	52	-28	48					
00415	Washington	6001	11:20:25	7	16	6	00					
00416	Washington	6001	11:25:20	9	40	-35						
00558	Kochi	0264	19:52:25	12	31	-23						
00559	Miyazaki	0230	19:50:42	12	45	-01						

1957 BETA

December 18, 1957

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	z	°	'	"	h	°	'	"	MAG.
00405	Bllox1	0090	11:03:30							270					58			
00406	W. Palm Beach	0016	09:23:19							90					26			
00407	W. Palm Beach	0016	11:04:48							270					34			
00408	Cambridge	0099	09:20:52							176					37			
00409	Cambridge	0099	09:21:27.0							174					31			
00410	Cambridge	0099	09:22:30.0							169					21			
00411	Cambridge	0099	09:23:03.6							167					19			
00412	Honolulu	0114	16:11:07	8	07													
00420	Yokkaichi	0258	19:31:14					14	06									
00421	Mitaka	0229	19:31:25	10	35			9							47	18		
00422	Mitaka	0229	19:32:37							177					34	24		
00423	Mitaka	0229	19:34:29							169					21			
00424	Suwa	0248	19:31:08	10	23			-	4									

December 19, 1957

00417	W. Flam Beach	0016	09:04:19							90					27			
00418	Edinburg, Tex.	0066	10:45:53.5							90					48	30		
00419	Edinburg, Tex.	0066	12:27:48							270					19	45		

December 20, 1957

00425	Organ Pass	5001	12:07:48	8	17			-07	48									
00426	Organ Pass	5001	12:08:22	8	44			-15	48									
00427	Organ Pass	5001	12:09:08	9	08			-24	12									
00428	Organ Pass	5001	12:10:00	9	39			-29	42									
00429	W. Flam Beach	0016	10:33:38							180					14			
00440	Greensboro	0049	23:26:30							270					85			
00441	W. Palm Beach	0016	22:26:18							270					80			

1957 BETA

December 21, 1957

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	α	δ	°	'	"	Z	°	'	"	h	m	s	MAG.
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00442	Miyazaki	0230	09:35:46	20	40			15											
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December 22, 1957

00437	Greensboro	0049	22:46:03	4	35			06											
00438	Cambridge	0099	22:45:31.2																11 30
00439	Cambridge	0099	22:46:18.2																18 30
00443	Ichinomiya	0215	09:16:35	19	30			16											
00444	Hiroshima	0211	09:16:39	00	09			59											
00445	Fuchu	0214	09:15:27	21	20			41											
00452	Washington, D.C.	6001	22:46:15	3	30			- 5											
00560	Tadotsu	0249	09:15:46	20	52			48											
00561	Miyazaki	0230	09:13:53	21	30			-17											
00562	Miyazaki	0230	09:14:26	22	01			21											
00563	Kagoshima	0218	09:14:20	22	30			12											

December 23, 1957

00434	Lawton	0110	00:26:29	03	10			42											54 54
00435	Oakland	0006	02:08:57.5	22	05			-24											
00436	Sacramento	8500	02:08:06.3	17	30			86											12
00448	Fort Worth	8503	00:27:05																
00449	Bryn Athyn	0055	22:24:15																16
00450	Cambridge	0099	22:24:09.9																23 30
00451	Cambridge	0099	22:24:21.4																25 30
00453	Suwa	0248	08:53:50	19	36			45											
00454	Shizuoka	0247	08:53:07	19	47			12											
00455	Manazuru	0228	08:53:42	19	59			37											
00456	Osaka-Yomiuri	0241	08:53:49	23	59			87											
00457	Kochi	0264	08:54:06	00	53			60											
00458	Mitaka	0229	08:52:59																17 30
00459	Musashino	0233	08:53:24																22 30

1957 BETA

December 23, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	α			δ			Z	h			MAG.
				h	m	s	°	'	"	°	'	"		
00460	Kiryu	0223	08:53:45							300			28	
00461	Mizukaido	0231	08:53:30							270			22	
00462	Himeji	0262	08:53:40							11	48		47	30
00463	Cambridge	0099	22:24:24.8							130			25	30
00516	Walnut Creek	0011	02:08:40	23	40				-01	24				

December 24, 1957

00446	Lawton	0110	00:04:33							64	06			
00447	Milwaukee	0074	00:05:29	21	15				-11	30				
00464	Univ. of Ill., B	2046	23:42:23.9	20	52	06			39	22				
00465	Sacramento	8501	01:46:41.8	4	21	07.2			33	38	24			
00495	Milwaukee	0074	23:42:26	23	45				-08	40				
00496	Milwaukee	0074	23:43:01	23	35				32	30				
00532	Mitaka	0229	08:29:20.0									13	30	
00533	Mitaka	0229	08:30:44.3									41	12	
00534	Mitaka	0229	08:31:14.7									33	06	
00535	Mitaka	0229	08:31:37.6									23	36	
00536	Musashino	0233	08:30:56									41	18	
00537	Nagoya	0236	08:30:39									60		
00538	Suwa	0248	08:30:20	21	22									
00539	Suwa	0248	08:31:26	7	28									
00540	Yokkaichi	0258	08:30:36	00	04									
00541	Kashiwabara	0222	08:30:59	6	10									
00542	Kiryu	0223	08:31:37	11	40									
00543	Nagano	0234	08:30:59									42	30	
00544	Manazuru	0228	08:30:45	19	30									
00545	Tokushima	0253	08:30:51									51	48	
00546	Kochi	0264	08:31:40	5	13									
00547	Mizukaido	0231	08:30:38									36	30	
00548	Higashimatsuyama	0210	08:31:35.6	12	09				81					
00549	Himeji	0262	08:30:28									64	48	

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1957 BETA

December 25, 1957

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	δ	'	"	z	'	"	e	'	"	MAG.
00466	Mitaka	0229	08:06:35.6	21	53		14												
00467	Suwa	0248	08:06:47	00	45		24												
00468	Sapporo	0245	08:08:52	3	45		27												
00477	Sacramento	8501	01:22:52.3	3	46	54	11	09											
00478	Sacramento	8501	01:23:07.3	4	25	48	19	31	12										
00550	Asahikawa	0201	08:07:34	22	45		-32												
00551	Shizuoka	0247	08:06:35	23	34		35												
00552	Mizukaido	0231	08:07:00																
00553	Higashimatsuyama	0210	08:06:17	21	39		-13												

December 26, 1957

00469	Sapporo	0245	07:44:21	4	28		18												
00470	Sapporo	0245	07:44:32	5	06		22												
00471	Asahigawa	0201	07:44:32																
00474	Greensboro, B	0197	22:51:59	18	10		36	30											
00475	Chattanooga	0062	22:56:00+1																
00476	Milwaukee, B	0198	22:54:00	4	43		23	00											
00568	Johannesburg	2401	01:41:37	13	03		14	12											
00569	Johannesburg	2401	01:43:49.2																
00570	Johannesburg	2401	01:44:05	13	55		-8	30											

December 27, 1957

00472	Denver	0013	00:34:00																
00473	Manhattan, Kan.	0027	00:35:19	17	00		35	24											
00479	Pateron	0108	22:28:10	16	43		42	54											
00480	Bryn Athyn	0055	22:29:48	11	00		62												
00482	Cambridge	0099	22:29:30.4																
00483	Cambridge	0099	22:29:44.8																
00484	Cambridge	0099	22:29:46.0																

1957 BETA

December 27, 1957 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00485	Cambridge	0099	22:29:54.2							353	30							15
00571	Johannesburg	2401	01:19:22.5	14	05				-10									
00572	Pretoria	0404	01:22:33.4	15	18				-30									30

December 28, 1957

00481	Manhattan, Kan.	0027	00:08:55	16	52													
00486	Cambridge	0099	22:01:41.8							326								25
00487	Cambridge	0099	22:01:50.5							332								22
00488	Cambridge	0099	22:01:50.5							327								23
00576	Santiago Obs.	2801	07:39:15	13	58				- 9									30

December 29, 1957

00489	Sapporo	0245	08:07:16	17	25				24									
00490	Sapporo	0245	08:07:33	17	14				33									

December 30, 1957

00494	Otaru	0243	07:39:43							330								23
00573	Johannesburg	2401	01:39:26	11	05				-18									
00574	Johannesburg	2401	01:23:20	14	03				-57									12
00577	Santiago Obs.	2801	08:25:15	11	16				52.3									39
00578	Santiago Obs.	2801	08:28:07.5	13	43				58.7									10

December 31, 1957

00575	Johannesburg	2401	01:11:14	12	00				-22									30
00579	Santiago Obs.	2801	07:57:40	12	53				54									12

1957 BETA

January 1, 1958

OBS. NO.	STATION	STA. NO.	U. T.	α h m s	δ ° ' "	Z ° ' "	h ° ' "	MAG.
00001	Armagh	2651	18:28:55.1			309 24	19 12	
00019	Johannesburg	2401	02:25:37.4	06 37	-53 30			
00032	Santiago Obs.	2801	07:29:17	14 19 36	-39 31			
00033	Santiago Obs.	2801	07:30:10	14 55 25	-42 56			

January 2, 1958

00020	Johannesburg	2401	01:52:59.4	7 15	-37 00			
00034	Santiago Obs.	2801	06:56:29	13 16 36	-22 51			
00035	Santiago Obs.	2801	08:33:39	7 18 17.0	6 19 57			

January 3, 1958

00002	Armagh	2651	17:24:10:6			287 12	29 36	
00003	Armagh	2651	17:24:51.1			325 54	35 18	
00004	Armagh	2651	17:25:37.6			6 26	27 53	
00022	Johannesburg	2401	01:21:38	8 10 30	-47 11			
00021	Johannesburg	2401	01:21:07.4	8 00 36	-59 48			
00023	Johannesburg	2401	01:24:36	10 25	-80 30			
00024	Johannesburg	2401	01:26:27	17 00	-80			

January 4, 1958

00014	Johannesburg	2401	00:47:38	8 47	-28 30			
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January 5, 1958

00015	Johannesburg	2401	02:00:42	4 12	-62 30			
00036	Santiago Obs.	2801	07:00:08	12 06 18	-50 22			
00037	Santiago Obs.	2801	08:44:07	4 23	-63 30			

1957 BETA

January 6, 1958

OBS. NO.	STATION	STA. NO.	U. T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00038	Santiago Obs.	2801	08:06:15	5	50	20	-41	07	00									

January 7, 1958

00039	Santiago Obs.	2801	05:48:34.8	12	08	29.1	23	19	26									
00040	Santiago Obs.	2801	07:29:11.8	6	21	12	-29	54										

January 8, 1958

00016	Johannesburg	2401	00:10:36	8	48		-50	12										
00017	Johannesburg	2401	23:34:51	10	25		-67											
00041	Santiago Obs.	2801	06:54:32.8	7	56	34.5	-63	09	41									

January 9, 1958

00018	Johannesburg	2401	01:15:10.5	4	29		-34	18										
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January 12, 1958

00005	College, Alaska	6450	01:57:36				180											75
00006	College, Alaska	6450	03:40:12				0											85

January 13, 1958

00007	College, Alaska	6450	01:15:35				180											60
00008	College, Alaska	6450	02:58:20				0											80
00009	College, Alaska	6450	04:40:25				0											90

January 14, 1958

00010	College, Alaska	6450	02:15:32				0											87
00011	College, Alaska	6450	03:58:21				180											86

1957 BETA

January 15, 1958

OBS. NO.	STATION	STA. NO.	U. T.	h	m	s	°	'	"	Z	°	'	"	h	m	s	°	'	"	MAG.
00012	College, Alaska	6450	01:31:42							180										84

January 16, 1958

00013	College, Alaska	6450	04:13:02							180										70
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January 17, 1958

00071	Armagh	2651	18:24:43.6							39	06									29 57
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January 18, 1958

00042	Sacramento D	8005	02:43:31.2	8	36															90
00055	College, Alaska	6450	02:39:04							0										50
00056	College, Alaska	6450	04:22:00							180										

January 19, 1958

00025	Cambridge	0099	23:28:38							347										09
00026	Cambridge	0099	23:29:30.2							5										17 30
00027	Cambridge	0099	23:30:49							12	30									23 30
00028	Cambridge	0099	23:30:44							12										21 30
00029	Cambridge	0099	23:31:06							17	30									25
00030	Washington, D.C.	6001	23:31:04																	
00031	Washington, D.C.	6001	23:31:22																	
00043	Sacramento B	8500	03:37:50.2																	
00044	Sacramento B	8500	03:37:56.1																	
00046	Sacramento B	8500	01:57:56.6																	
00516	Pic du Midi	2705	18:31:43							9	36									17 48
00517	Pic du Midi	2705	18:32:40							26	06									21 06
00518	Pic du Midi	2705	18:32:53							29	00									21 48
00519	Pic du Midi	2705	18:33:10							33	24									22 18

1957 BETA
January 20, 1958

OBS. NO.	STATION	STA. NO.	U.T.	α	δ	h	m	s	°	'	"	Z	"	h	'	"	MAG.
00045	Sacramento B	8500	02:50:50.2	11 23	60 42				45					20			
00049	Cambridge	0099	22:42:49						180					82			
00057	College, Alaska	6450	02:44:17						180					31			
00058	College, Alaska	6450	04:27:33														

January 21, 1958

00047	Ft. Belvoir	0077	00:23:04	22 57	24	66 30			0					29			
00048	Washington, D.C.	8009	00:23:35	9 55	56.4	48 30			6	36				33	30		
00050	Cambridge	0099	00:21:12	9 01	12	38 49			328	30				15	30		
00051	Cambridge	0099	00:23:02.5	8 33	12	30 01			332	30				35			
00052	Cambridge	0099	00:23:36	19 26	12	62 26			331	30				44			
00053	Cambridge	0099	00:23:47	20 02	42.6	67 43			329	30				52			
00054	Cambridge	0099	00:23:58	00 11	27	75 45			331	0				55			
00059	Washington, D.C.	8006	00:23:13	00 05	01.2	74 52								31			
00060	Milton	6003	00:23:33	16 40		65 36											
00061	Sacramento B	8500	02:01:25.2	15 00		80 00											
00062	Sacramento B	8500	02:02:34.0	9 30		81 09											
00063	Sacramento B	8500	02:03:30.5	8 33	12	30 01											
00064	Sacramento B	8500	03:41:14.5	19 26	12	62 26											
00065	Sacramento B	8500	03:41:52.0	20 02	42.6	67 43											
00066	Sacramento B	8500	03:43:09.6	00 11	27	75 45											
00067	Sacramento B	8500	03:43:19.8	00 05	01.2	74 52											
00068	Sacramento B	8500	03:43:19.8	16 40		65 36											
00069	Washington, D.C.	6001	00:21:43	15 00		80 00											
00070	Washington, D.C.	6001	00:23:13	9 30		81 09											
00071	Washington, D.C.	6001	00:23:33														
00096	College, Alaska	6450	03:36:57						180					46			
00520	Pic du Midi	2705	18:31:14						341	36				8	18		
00521	Pic du Midi	2705	18:31:37						342	54				10	00		
00522	Pic du Midi	2705	18:31:48						344	06				11	30		

1957 BETA
January 21, 1958 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h m s	° ' "	Z ° ' "	h ° ' "	MAG.
00523	Pic du Mid1	2705	18:32:00			345 36	12 54	
00524	Pic du Mid1	2705	18:32:14			347 06	14 18	
00525	Pic du Mid1	2705	18:32:24			348 24	15 24	
00526	Pic du Mid1	2705	18:32:34			349 48	16 48	
00527	Pic du Mid1	2705	18:32:49			352 06	18 30	
00528	Pic du Mid1	2705	18:32:58			353 24	19 36	
00529	Pic du Mid1	2705	18:33:09			355 30	21 06	
00530	Pic du Mid1	2705	18:33:22			357 48	22 30	
00531	Pic du Mid1	2705	18:33:34			00 54	24 18	
00532	Pic du Mid1	2705	18:33:53			5 06	27 24	
00533	Pic du Mid1	2705	18:34:07			8 42	29 12	
00534	Pic du Mid1	2705	18:34:20			12 48	31 06	
00535	Pic du Mid1	2705	18:34:30			16 36	32 54	
00536	Pic du Mid1	2705	18:34:44			21 18	34 18	
00537	Pic du Mid1	2705	18:34:55			25 24	35 48	
00538	Pic du Mid1	2705	18:35:11			32 36	37 36	
00539	Pic du Mid1	2705	18:35:22			36 54	38 18	
00540	Pic du Mid1	2705	18:35:31			41 06	38 42	
00541	Pic du Mid1	2705	18:35:42			46 42	39 12	
99542	Pic du Mid1	2705	18:35:59			54 36	39 24	
00543	Pic du Mid1	2705	18:36:21			64 06	38 36	
00544	Pic du Mid1	2705	18:36:34			70 06	37 54	
00545	Pic du Mid1	2705	18:36:46			74 42	36 54	
00546	Pic du Mid1	2705	18:36:56			78 18	36 06	
00547	Pic du Mid1	2705	18:37:11			83 24	34 36	
00548	Pic du Mid1	2705	18:37:24			87 18	33 06	
00549	Pic du Mid1	2705	18:37:33			89 42	32 18	
00589	Pic du Mid1	2705	18:37:47			93 18	30 42	
00754	Dunsink Obs.	2652	18:30:21.9±.5	17 35 00	53 42	(1950 position)		
00755	Dunsink Obs.	2652	18:30:26.9±.1	17 36 00	54 54	(1950 position)		
00756	Dunsink Obs.	2652	18:30:31.9±.1	17 37 00	56 18	(1950 position)		

1957 BETA

January 21, 1958 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	''	°	'	''	h	m	s	°	'	''	°	'	''	MAG.
00757	Dunsink Obs.	2652	18:31:26.9+1.1	17	50	00	74	00	(1950 position)	74	00	(1950 position)	17	50	00	74	00	(1950 position)	74	00	(1950 position)	
00758	Dunsink Obs.	2652	18:31:31.9+1.1	17	52	30	76	06	(1950 position)	76	06	(1950 position)	17	52	30	76	06	(1950 position)	76	06	(1950 position)	
00759	Dunsink Obs.	2652	18:31:36.9+1.1	17	57	00	78	18	(1950 position)	78	18	(1950 position)	17	57	00	78	18	(1950 position)	78	18	(1950 position)	
00760	Dunsink Obs.	2652	18:31:41.9+1.1	18	02	30	80	24	(1950 position)	80	24	(1950 position)	18	02	30	80	24	(1950 position)	80	24	(1950 position)	
00761	Dunsink Obs.	2652	18:31:46.9+1.1	18	12	30	82	42	(1950 position)	82	42	(1950 position)	18	12	30	82	42	(1950 position)	82	42	(1950 position)	
00762	Dunsink Obs.	2652	18:32:01.9+1.1	00	00	00	88	42	(1950 position)	88	42	(1950 position)	00	00	00	88	42	(1950 position)	88	42	(1950 position)	
00763	Dunsink Obs.	2652	18:32:06.9+1.1	3	50	00	87	00	(1950 position)	87	00	(1950 position)	3	50	00	87	00	(1950 position)	87	00	(1950 position)	
00764	Dunsink Obs.	2652	18:32:11.9+1.1	4	40	00	84	36	(1950 position)	84	36	(1950 position)	4	40	00	84	36	(1950 position)	84	36	(1950 position)	
00765	Dunsink Obs.	2652	18:32:16.9+1.1	4	57	30	81	54	(1950 position)	81	54	(1950 position)	4	57	30	81	54	(1950 position)	81	54	(1950 position)	
00766	Dunsink Obs.	2652	18:32:21.9+1.1	5	10	00	79	12	(1950 position)	79	12	(1950 position)	5	10	00	79	12	(1950 position)	79	12	(1950 position)	
00767	Dunsink Obs.	2652	18:32:41.9+1.1	5	23	30	68	18	(1950 position)	68	18	(1950 position)	5	23	30	68	18	(1950 position)	68	18	(1950 position)	
00768	Dunsink Obs.	2652	18:32:46.9+1.1	5	24	30	65	30	(1950 position)	65	30	(1950 position)	5	24	30	65	30	(1950 position)	65	30	(1950 position)	
00769	Dunsink Obs.	2652	18:32:51.9	5	26	00	62	42	(1950 position)	62	42	(1950 position)	5	26	00	62	42	(1950 position)	62	42	(1950 position)	
00770	Dunsink Obs.	2652	18:32:56.9	5	27	00	60	00	(1950 position)	60	00	(1950 position)	5	27	00	60	00	(1950 position)	60	00	(1950 position)	
00771	Dunsink Obs.	2652	18:33:01.9	5	28	00	57	18	(1950 position)	57	18	(1950 position)	5	28	00	57	18	(1950 position)	57	18	(1950 position)	
00772	Dunsink Obs.	2652	18:33:16.9	5	32	00	49	42	(1950 position)	49	42	(1950 position)	5	32	00	49	42	(1950 position)	49	42	(1950 position)	
00773	Dunsink Obs.	2652	18:33:21.9	5	32	30	47	18	(1950 position)	47	18	(1950 position)	5	32	30	47	18	(1950 position)	47	18	(1950 position)	
00774	Dunsink Obs.	2652	18:33:26.9	5	33	00	44	42	(1950 position)	44	42	(1950 position)	5	33	00	44	42	(1950 position)	44	42	(1950 position)	
00775	Dunsink Obs.	2652	18:33:31.9	5	33	30	42	30	(1950 position)	42	30	(1950 position)	5	33	30	42	30	(1950 position)	42	30	(1950 position)	
00776	Dunsink Obs.	2652	18:33:36.9	5	34	00	40	12	(1950 position)	40	12	(1950 position)	5	34	00	40	12	(1950 position)	40	12	(1950 position)	
00777	Dunsink Obs.	2652	18:33:56.9	5	37	00	32	12	(1950 position)	32	12	(1950 position)	5	37	00	32	12	(1950 position)	32	12	(1950 position)	
00778	Dunsink Obs.	2652	18:34:01.9	5	37	30	30	30	(1950 position)	30	30	(1950 position)	5	37	30	30	30	(1950 position)	30	30	(1950 position)	
00779	Dunsink Obs.	2652	18:34:06.9	5	37	30	28	48	(1950 position)	28	48	(1950 position)	5	37	30	28	48	(1950 position)	28	48	(1950 position)	
00780	Dunsink Obs.	2652	18:34:11.9	5	38	00	26	54	(1950 position)	26	54	(1950 position)	5	38	00	26	54	(1950 position)	26	54	(1950 position)	
00781	Dunsink Obs.	2652	18:34:16.9	5	38	30	25	24	(1950 position)	25	24	(1950 position)	5	38	30	25	24	(1950 position)	25	24	(1950 position)	
00782	Dunsink Obs.	2652	18:34:31.9	5	39	30	21	06	(1950 position)	21	06	(1950 position)	5	39	30	21	06	(1950 position)	21	06	(1950 position)	
00783	Dunsink Obs.	2652	18:34:36.9	5	40	00	19	42	(1950 position)	19	42	(1950 position)	5	40	00	19	42	(1950 position)	19	42	(1950 position)	
00784	Dunsink Obs.	2652	18:34:41.9	5	40	30	18	18	(1950 position)	18	18	(1950 position)	5	40	30	18	18	(1950 position)	18	18	(1950 position)	
00785	Dunsink Obs.	2652	18:34:46.9	5	41	00	17	12	(1950 position)	17	12	(1950 position)	5	41	00	17	12	(1950 position)	17	12	(1950 position)	
00786	Dunsink Obs.	2652	18:34:51.9	5	41	30	15	54	(1950 position)	15	54	(1950 position)	5	41	30	15	54	(1950 position)	15	54	(1950 position)	
00787	Dunsink Obs.	2652	18:35:06.9	5	42	30	12	42	(1950 position)	12	42	(1950 position)	5	42	30	12	42	(1950 position)	12	42	(1950 position)	
00788	Dunsink Obs.	2652	18:35:26.9	5	43	30	8	48	(1950 position)	8	48	(1950 position)	5	43	30	8	48	(1950 position)	8	48	(1950 position)	

1957 META

January 21, 1958 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	h	m	s	MAG.
00789	Dunsink Obs.	2652	18:35:36.9	5	44	30	7	00						
00790	Dunsink Obs.	2652	18:35:56.9	5	46	00	3	54						
00791	Dunsink Obs.	2652	20:13:59.9	23	47	00	15	30						
00792	Dunsink Obs.	2652	20:14:04.9	23	53	00	14	42						
00793	Dunsink Obs.	2652	20:14:09.9	23	58	30	14	12						

January 22, 1958

00072	St. Paul	0035	01:13:42	4	50		41			13	18	17	24	
00073	Lawton	0110	01:12:25							28	30	23	06	
00074	Lawton	0110	01:13:39							42	30	25	42	
00075	Lawton	0110	01:14:27							57		27		
00076	Lawton	0110	01:15:17											
00077	Los Alamos	0043	02:54:27	00	05		59	24						
00078	Los Alamos	0043	02:54:44	00	43		57							
00079	Oakland	0006	02:54:37	7	35		33							
00080	San Angelo	0105	01:36:15							90		25		
00081	Mitaka	0229	09:30:37	8	28		61							
00082	Mitaka	0229	11:11:01	23	05		29							
00083	Mizukaide	0231	11:10:23	22	40		31							
00084	Suwa	0248	09:32:22	7	32		31							
00085	Mitaka	0229	09:28:43.6							5	24	21		
00086	Mizukaide	0231	09:31:22							45		38	01	
00087	C. Canaveral B	8007	01:14:45							339	14	19	43	
00088	C. Canaveral B	8007	01:14:50							339	21	19	43	
00089	C. Canaveral B	8007	01:14:55							339	31	20	20	
00090	C. Canaveral B	8007	01:15:00							339	40	21	04	
00091	C. Canaveral B	8007	01:15:05							339	49	21	47	
00092	C. Canaveral B	8007	01:15:10							339	58	22	31	
00093	C. Canaveral B	8007	01:15:15							340	08	23	16	
00094	C. Canaveral B	8007	01:15:20							340	17	24	05	

1957 BETA

January 22, 1958 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00095	C. Canaveral B	8007	01:15:25							340	32			24	37			
00097	College, Alaska	6450	02:45:42							180				62				
00098	College, Alaska	6450	04:29:27							180				23				
00125	Sacramento C	8501	02:51:10.7	13	34	43.8	74	27										
00126	Sacramento C	8501	02:53:02.7	8	14	12	59	40	48									
00127	Sacramento C	8501	04:33:29.9	23	13	30	27	58	12									
00128	Sacramento C	8501	04:34:47.0	00	21	18	17	20	24									
00138	Sandal	0246	09:29:09	11	38		82											
00139	Sandal	0246	09:31:40							72	30			45	36			
00195	Musashino	0233	09:29:48							20				31				
00794	Dunsink Obs.	2652	19:23:15.0	1	01	30	23	42										
00795	Dunsink Obs.	2652	19:23:20.0	1	09	30	22	24										
00796	Dunsink Obs.	2652	19:23:25.0	1	17	30	21	12										
00797	Dunsink Obs.	2652	19:23:30.0	1	25	30	19	48										
January 23, 1958																		
00099	Sac Peak	2043	02:06:01.2	6	35		16											
00100	Ft. Belvoir	0077	00:24:20							0				76				
00101	Washington, D.C.	0014	00:21:27							333	30			23	30			
00102	Chicago	0085	00:22:53.5	6	46	36	48	48										
00103	Chicago	0085	00:23:05.0	6	57		45	06										
00104	Amarillo	0064	02:05:21							90				68				
00105	St. Louis	0080	00:21:28	10	21		65	54										
00106	St. Louis	0080	00:22:36.5	8	12		52	30										
00107	St. Louis	0080	02:04:24	1	02		14	18										
00108	Alamagordo	0102	02:05:01	6	41		41	42										
00109	Wichita	0028	02:06:53															
00110	Los Alamos	0043	02:04:19	6	22		43	30										
00111	Los Alamos	0043	02:05:19	6	16		22	30										
00112	Los Alamos	0043	02:06:12	6	13		8			165	30			36				

1957 BETA

January 23, 1958 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	MAG.
00113	Milwaukee	0074	00:18:52	16	50		61							
00114	Milwaukee	0074	00:22:09.1	6	50		60							
00115	Milwaukee	0074	02:06:55.8	2	31		-19	20						
00116	Milwaukee	0074	02:04:37.8	1	00		1	50						
00117	Albuquerque	0041	02:03:36	6	30		80							
00118	Tucson	0003	02:31:00							90				27
00119	Tucson	0003	04:08:00							290				36
00120	Tucson	0003	04:14:00							240				36
00121	Tucson	0003	04:13:00							270				36
00122	Albuquerque	0041	02:02:57	14	45		75							
00123	Albuquerque	0041	02:04:29	6	40		45							
00124	Albuquerque	0041	02:05:53	6	31		18	30						
00129	Sacramento C	8501	02:00:15.3	9	56	34.2	57	04	48					
00130	Sacramento C	8501	02:00:59.9	9	02	21.6	49	52	12					
00131	Sacramento C	8501	02:01:51.3	7	51	58.2	28	31	48					
00132	Sacramento C	8501	02:04:04.2	7	30	36	15	54						
00133	Sacramento C	8501	02:05:39.7	7	16	22.2	2	58	12					
00134	Sacramento C	8501	03:41:07.4	21	47	24	52	39	36					
00135	Sacramento C	8501	03:42:44.1	00	34	07.2	44	15						
00136	Sacramento C	8501	03:42:57.6	1	00	18.6	41	04	48					
00137	Sacramento C	8501	03:46:53.6	4	24	21	-18	35	24					
00140	Washington, D.C.	6001	00:22:47	22	10		72	02						
00141	Washington, D.C.	6001	00:23:42	1	54		63	07						
00142	Washington, D.C.	6001	00:24:22	3	19		48	08						
00143	Washington, D.C.	6001	00:25:12	4	06		27	02						
00144	Washington, D.C.	6001	00:25:57	4	35		13	08						
00145	Washington, D.C.	6001	00:26:32	4	54		5	02						
00146	Washington, D.C.	6001	00:27:22	5	11		-8	06						
00147	Washington, D.C.	6001	00:27:50	5	14		-13	02						
00148	Higashimatsuyama	0210	08:40:38	7	49		25							
00149	Higashimatsuyama	0210	10:23:03	3	50		-	9						

1957 BETA

January 23, 1958 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	δ	"	°	Z	°	h	'	MAG.
00150	Fuchu	0214	10:20:45	4	37		48			26	48	15	30	
00151	Fuchu	0214	10:23:17	5	33		-1			316	54	33	30	
00152	Kanaya Machi	0220	10:21:02	3	53		46			297	24	56	24	
00153	Manazuru	0228	08:37:15	10	34		58			270	54	65	30	
00154	Mitaka	0229	10:23:49	4	10		-14	30		31	54	24	24	
00155	Mitaka	0229	12:01:13	23	52		3			59	00	22	24	
00156	Mitaka	0229	12:03:09.8	00	40		-8	12		75	24	15	12	
00157	Osaka-Yomiuri	0241	10:19:59	2	00		64			94	30	11	00	
00158	Osaka-Yomiuri	0241	10:22:09	4	33		16							
00159	Yokkaichi	0258	10:22:41	4	34		7							
00160	Mitaka	0229	08:37:21.5											
00161	Mitaka	0229	10:18:52.4											
00162	Mitaka	0229	10:20:21.6											
00163	Musashino	0233	10:21:02.4											
00164	Sendai	0246	08:37:36.6											
00165	Sendai	0246	08:39:13.6											
00166	Sendai	0246	08:40:19.8											
00167	Sendai	0246	08:42:22.2											
00168	Shizuoka	0247	08:43:05											
00177	Ikoma	0216	10:22:09	4	28		16							
00178	Konko	0224	10:21:22	4	55		35							
00179	Konko	0224	10:22:41	5	20		6							
00180	Manazuru	0228	10:22:02	3	14		16							
00181	Manazuru	0228	10:22:23	3	26		10							
00182	Manazuru	0228	10:22:28	3	31		7							
00183	Miyazaki	0230	10:21:23	6	13		45							
00184	Miyazaki	0230	10:21:44	6	12		23							
00185	Suwa	0248	08:37:47	9	28		53							
00186	Suwa	0248	10:20:24	1	37		44							
00187	Suwa	0248	10:20:37	1	55		41							
00188	Suwa	0248	10:22:19	3	44		6							

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OBS. NO.	STATION	STA. NO.	U.T.	h m s	α ° ' "	δ ° ' "	Z ° ' "	h ° ' "	MAG.
00189	Suwa	0248	10:22:35	3 58		-00 10			
00190	Suwa	0248	10:23:44	4 28		-14			
00191	Kenko	0224	10:21:22					72	30
00192	Mitaka	0229	10:18:47				90	30	24
00193	Mitaka	0229	10:20:30.9				317 06	57	24
00194	Mitaka	0229	10:22:12.7				293 12	61	06
00196	Arlington	0071	23:33:21				201 12	37	30
00197	Cleveland B	8505	23:32:21+4	6 28		18+2.5	90		
00198	North Canton	0053	23:32:59	6 42		14 30			
00209	Pittsburgh	0059	23:31:33	7 16		37 30			
00210	Pittsburgh	0059	23:35:45						
00211	Dover	0039	20:31:29				135	25	
00212	Dover	0039	23:32:24				45	60	
00213	State College	0060	23:32:30				90	56	
00214	State College	0060	23:32:45	6 27		19 30	89	41	
00215	State College	0060	23:37:06	6 20		-18			
00216	Bryn Athyn	0055	23:29:34	16 06		80			
00217	Bryn Athyn	0055	23:29:52				0	35	
00218	Bryn Athyn	0055	23:31:33				45	53	
00219	Bryn Athyn	0055	23:35:18	6 00		-8			
00220	Bryn Athyn	0055	23:37:00	6 00		-19			
00221	Millbrook	0045	23:31:56	5 04		41 10			
00222	Millbrook	0045	23:33:41	5 35		-4 00			
00223	Paterson, N.J.	0108	23:33:13	5 43		-8 30			
00224	Washington, D.C.	0014	23:35:12.5				112 42	24	
00230	Milwaukee B	0198	23:30:58	7 18		29 00			
00238	New Haven	0087	23:25:02	5 23 00		6 19			
00239	Washington, D.C.	6001	23:29:05	14 50		74 05			
00240	Washington, D.C.	6001	23:31:05	8 00		69 08			
00241	Washington, D.C.	6001	23:32:05	6 40		43 04			
00242	Washington, D.C.	6001	23:33:05	6 35		24 02			

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OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00243	Washington, D.C.	6001	23:33:35	6	32		16	05										
00244	Washington, D.C.	6001	23:34:55	6	28		1	05										
00245	Washington, D.C.	6001	23:35:50	6	26		-	7	04									
00246	Washington, D.C.	6001	23:37:10	6	21		17	06										
00423	Cambridge	0099	23:30:38															58
00424	Cambridge	0099	23:30:42															62
00425	Cambridge	0099	23:30:55															67
00426	Cambridge	0099	23:31:07															68
00427	Cambridge	0099	23:31:15															72
00428	Cambridge	0099	23:31:22															75
00429	Cambridge	0099	23:31:28															76
00430	Cambridge	0099	23:31:32															79
00431	Cambridge	0099	23:31:38															81
00432	Cambridge	0099	23:31:40															81
00433	Cambridge	0099	23:31:44															82
00434	Cambridge	0099	23:32:13															74
00435	Cambridge	0099	23:32:33															69
00436	Cambridge	0099	23:33:09															53
00437	Cambridge	0099	23:33:28															49
00438	Cambridge	0099	23:33:37															45
00439	Cambridge	0099	23:33:43															44
00440	Cambridge	0099	23:33:36															46
00441	Cambridge	0099	23:33:55															40
00442	Cambridge	0099	23:35:02															31
00443	Cambridge	0099	23:35:39															25
00575	College, Alaska	6450	03:36:24															37
00672	Pic du Midi	2705	18:28:22															6
00673	Pic du Midi	2705	18:28:45															8
00674	Pic du Midi	2705	18:28:58															10
00675	Pic du Midi	2705	18:29:13															11
00676	Pic du Midi	2705	18:29:25															13

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January 23, 1958 (cont'd)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00677	Pic du Midl	2705	18:29:41							335	30			14	42			
00678	Pic du Midl	2705	18:29:50							336	00			15	48			
00679	Pic du Midl	2705	18:30:00							336	36			17	12			
00680	Pic du Midl	2705	18:30:09							337	00			18	36			
00681	Pic du Midl	2705	18:30:19							337	48			20	00			
00682	Pic du Midl	2705	18:30:25							338	48			22	12			
00683	Pic du Midl	2705	18:30:42							339	30			23	48			
00684	Pic du Midl	2705	18:31:09							342	24			28	48			
00685	Pic du Midl	2705	18:31:19							343	30			30	42			
00686	Pic du Midl	2705	18:31:27							344	36			32	42			
00687	Pic du Midl	2705	18:31:37							346	00			34	48			
00688	Pic du Midl	2705	18:31:52							348	30			38	24			
00689	Pic du Midl	2705	18:32:03							351	00			41	18			
00690	Pic du Midl	2705	18:32:13							353	36			44	12			
00691	Pic du Midl	2705	18:32:23							356	24			47	00			
00692	Pic du Midl	2705	18:32:36							1	06			51	00			
00693	Pic du Midl	2705	18:32:48							5	48			54	24			
00694	Pic du Midl	2705	18:33:00							12	48			57	36			
00695	Pic du Midl	2705	18:33:12							21	00			60	30			
00696	Pic du Midl	2705	18:33:30							35	12			63	36			
00697	Pic du Midl	2705	18:33:44							51	12			64	42			
00698	Pic du Midl	2705	18:33:59							69	06			63	36			

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00169	Pasacal	8008	02:50:37.091	2	07	48	80	46	(1950 position)
00170	Pasacal	8008	02:50:45.092	2	47	00	78	59	(1950 position)
00171	Pasacal	8008	02:50:53.092	3	15	54	76	56	(1950 position)
00172	Organ Pass-BN	9001	02:54:03.95	1	39	12	17	25	
00173	Organ Pass-BN	9001	02:54:39.95	2	12	54	7	00	

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OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	h	°	'	MAG.
00174	Organ Pass-SS	5001	02:52:25.8	23	53		40	27								
00175	Sac Peak-SS	2043	01:10:38.4	9	12		57	30								
00176	Sac Peak-SS	2043	02:52:25.2	23	45		37	30								
00199	North Canton	0053	01:13:47.5	1	44		-2	48								
00200	Lawton	0110	01:08:57							355	00		18	42		
00201	Lawton	0110	01:11:00	19	18		36	24								
00202	Lawton	0110	01:12:54							68	30		44	18		
00203	China Lake	0098	02:51:02							0			57	30		
00204	Whittier	0012	02:54:47	5	43		-1	12								
00205	Whittier	0012	02:55:06	5	50		-5	48								
00206	Whittier	0012	02:55:59	5	52		-14	18								
00207	Wichita	0028	01:09:32.6	2	52	01.6	89	50								
00208	Wichita	0028	01:14:25.8	5	52		7	48								
00225	Washington, D.C.	0014	01:15:23.5							221	36		29			
00226	Columbus	0051	01:11:27	23	20		19									
00227	Tulsa	0054	01:11:54	5	42		45	30								
00228	Tulsa	0054	01:13:48	7	55		7	50								
00229	Tulsa	0054	01:15:58	6	00		-20	50								
00231	Milwaukee	0074	01:11:14	0	55		27	30								
00232	Milwaukee	0074	01:13:28.6	3	03		5	30								
00233	Milwaukee	0074	01:18:00.0	4	37		-30	50								
00234	Los Alamos	0043	01:12:01	7	35		31	00								
00235	Los Alamos	0043	02:52:04	0	10		29	00								
00236	Tucson	0003	02:54:38							180			69			
00237	Tucson	0003	02:56:31							164			39			
00247	Washington, D.C.	6001	01:11:05	22	52		27	04								
00248	Washington, D.C.	6001	01:12:50	0	13		11	08								
00249	Suwa	0248	09:30:27	5	58		-2									
00250	Sendai	0246	09:25:14							338	42		33	18		
00251	Sendai	0246	09:25:59.8							343	36		45	24		
00252	Sendai	0246	09:26:41.7							353	18		59	12		

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January 24, 1958 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	h	°	'	MAG.
00358	Quebec	8021	22:37:19	5	32		45	30		276			14	30		
00359	Quebec	8021	22:39:26	5	32		45	30		252			18			
00360	Quebec	8021	22:39:38	5	32		6	40		229			12			
00444	Cambridge	0099	01:11:15	5	32		-	0	45	35			32	42		
00445	Cambridge	0099	01:12:54							39			33	18		
00446	Cambridge	0099	01:16:32							43			33	42		
00699	Pic du Midi	2705	17:39:59							49			34	00		
00700	Pic du Midi	2705	17:39:44							54			34	00		
00701	Pic du Midi	2705	17:39:52							60			33	36		
00702	Pic du Midi	2705	17:40:05							64			35	18		
00703	Pic du Midi	2705	17:40:21							68			32	36		
00704	Pic du Midi	2705	17:40:35							72			31	54		
00705	Pic du Midi	2705	17:40:45							75			31	06		
00706	Pic du Midi	2705	17:40:56							79			30	12		
00707	Pic du Midi	2705	17:41:09							82			29	12		
00708	Pic du Midi	2705	17:41:19							85			28	24		
00709	Pic du Midi	2705	17:44:31							89			26	54		
00710	Pic du Midi	2705	17:41:43							91			26	00		
00711	Pic du Midi	2705	17:41:53							93			24	54		
00712	Pic du Midi	2705	17:42:09							95			23	54		
00713	Pic du Midi	2705	17:42:19							97			22	54		
00714	Pic du Midi	2705	17:42:30							99			22	00		
00715	Pic du Midi	2705	17:42:43							102			20	06		
00716	Pic du Midi	2705	17:42:55							103			19	18		
00717	Pic du Midi	2705	17:43:04							105			18	00		
00719	Pic du Midi	2705	17:43:26							107			17	00		
00720	Pic du Midi	2705	17:43:35							108			15	54		
00721	Pic du Midi	2705	17:43:49							110			15	06		
00722	Pic du Midi	2705	17:44:04													
00723	Pic du Midi	2705	17:44:20													
00724	Pic du Midi	2705	17:44:30													

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January 24, 1958 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h m s	° ' "	δ ' "	Z ° ' "	h ° ' "	MAG.
00725	Pic du Midl	2705	17:44:39				110 42	14 30	
00726	Pic du Midl	2705	17:44:47				111 30	13 54	
00727	Pic du Midl	2705	17:45:01				112 30	13 00	
00728	Pic du Midl	2705	19:19:54				292 18	28 18	
00729	Pic du Midl	2705	19:20:02				290 24	29 42	
00730	Pic du Midl	2705	19:20:10				287 48	30 54	
00731	Pic du Midl	2705	19:20:24				284 42	32 54	
00732	Pic du Midl	2705	19:20:39				280 24	35 06	
00733	Pic du Midl	2705	19:21:07				269 48	38 54	
00734	Pic du Midl	2705	19:21:20				265 12	40 06	
00735	Pic du Midl	2705	19:21:28				261 18	41 00	
00736	Pic du Midl	2705	19:21:38				256 54	41 42	
00737	Pic du Midl	2705	19:21:46				253 00	42 18	
00738	Pic du Midl	2705	19:21:59				247 48	42 48	
00739	Pic du Midl	2705	19:22:12				241 36	42 54	
00740	Pic du Midl	2705	19:22:18				238 18	42 48	
00741	Pic du Midl	2705	19:22:51				223 12	41 18	
00742	Pic du Midl	2705	19:23:00				220 18	40 30	
00743	Pic du Midl	2705	19:23:09				216 12	39 30	
00744	Pic du Midl	2705	19:23:18				213 42	38 36	
00745	Pic du Midl	2705	19:23:29				210 00	37 24	
00746	Pic du Midl	2705	19:23:42				206 48	36 06	
00747	Pic du Midl	2705	19:23:50				204 06	35 12	
00748	Pic du Midl	2705	19:24:00				202 00	33 48	
00749	Pic du Midl	2705	19:24:09				200 06	33 18	
00750	Pic du Midl	2705	19:24:44				193 06	28 48	
00751	Pic du Midl	2705	19:24:53				191 30	27 42	
00752	Pic du Midl	2705	19:25:02				190 12	26 48	
00753	Pic du Midl	2705	19:25:21				187 36	24 54	

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OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	°	'	"	h	m	s	MAG.
00253	Woomera	3601	12:14:29.1							318	36	00	45	25	10	
00254	Woomera	3601	12:19:43							167	57	46	47	12	24	
00255	Woomera	3601	12:20:00.7							165	59	26	42	50	24	
00256	Woomera	3601	12:20:30.7							164	04	06	38	12	44	
00257	Woomera	3601	12:20:54.4							162	36	24	33	47	20	
00258	Woomera	3601	12:21:27.4							161	19	40	29	30	32	
00259	Woomera	3601	12:22:07							159	55	10	24	34	00	
00261	Woomera	3601	12:22:55							158	39	00	19	35	00	
00262	Organ Pass BN	9001	01:00:46.08	4	46	33.8	30	59	(1950 position)							
00263	Organ Pass BN	9001	01:01:50.08	5	07	31.50	9	55	(1950 position)							
00264	Organ Pass BN	9001	01:03:42.13	5	33	16.5	-15	26	(1950 position)							
00265	New Orleans	0030	00:22:21	7	01		20	39								
00266	New Orleans	0030	00:21:32							16			32	30		
00267	W. Palm Beach	0016	00:23:40							61			90			
00268	St. Petersburg	0121	00:23:58	6	12		12									
00269	Denver	0013	01:57:00										45	30		
00270	Denver	0013	02:01:00										36	36		
00271	Spokane B	8502	01:56:51	4	37		16									
00272	Spokane B	8502	01:58:55	5	55		-7	30								
00273	Amarillo	0064	01:59:51										71	30		
00274	Alamagordo	0102	01:58:16	22	50		72	00								
00275	Alamagordo	0102	01:59:03	1	53		70	18								
00276	Alamagordo	0102	02:03:05	5	12		-8	16								
00277	Sacramento C	8501	01:58:14.7	6	55	37.8	26	07	12							
00278	Sacramento C	8501	03:38:10.9	0	10	38.4	19	38	24							
00279	Sacramento C	8501	03:38:28.2	0	29	00	15	43	12							
00280	Lawton	0110	02:01:05										232	06		
00281	Lawton	0110	02:03:18										184	54		
00282	Lawton	0110	02:04:51										175	48		
00283	Los Alamos	0043	01:59:22	3	30		42									
00284	Los Alamos	0043	02:00:14	4	00		22	00								
00285	Los Alamos	0043	02:01:34	4	42		-3	06								
00286	Edinburg, Tex.	0066	02:00:37										315	30		

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OBS. NO.	STATION.	STA. NO.	U. S. T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00287	Edinburg, Tex.	0066	02:02:49	7	35					266	30			73	30			
00288	Edinburg, Tex.	0066	02:03:53	3	47					183	30			68				
00289	Edinburg, Tex.	0066	02:05:03	3	18					168				49				
00290	Edinburg, Tex.	0066	02:07:33	5	09					162				24	30			
00291	Higashimatsuyama	0210	08:33:51.8					41										
00292	Higashimatsuyama	0210	10:20:57					-38										
00293	Fuchu	0214	10:16:46	3	18			3										
00294	Kagoshima	0218	10:19:10	5	09			-										
00295	Kanaya Machi	0220	10:16:55	2	44			3										
00296	Miyazaki	0230	10:17:39.6	4	26			1										
00297	Miyazaki	0230	10:17:57.6	5	33			-										
00298	Miyazaki	0230	10:19:39.9	5	04			-22										
00299	Shizuoka	0247	10:16:38	1	24			5										
00300	Sendai	0246	08:32:28.4							27	48			34				
00301	Sendai	0246	08:33:43.2							62	18			37	42			
00302	Sendai	0246	10:15:04							253	36			34	30			
00303	Sendai	0246	10:16:11.8							230	42			34	54			
00304	Mizusawa	0267	10:15:48							234	42			32	54			
00305	Mizusawa	0267	10:16:33							222	12			30	30			
00306	Mizusawa	0267	10:17:33							208	36			26	18			
00310	Cary	0112	23:27:34	6	10			44	30									
00311	Cary	0112	23:27:41	5	52			7	12									
00312	Cary	0112	23:28:03	5	48			-	30									
00361	C. Canaveral B	8007	23:28:38							74	35			29	07			
00362	C. Canaveral B	8007	23:28:48							77	13			28	45			
00363	C. Canaveral B	8007	23:28:58							79	47			28	20			
00364	C. Canaveral B	8007	23:29:08							82	13			27	51			
00365	C. Canaveral B	8007	23:29:18							84	36			27	20			
00366	C. Canaveral B	8007	23:29:28							86	54			26	47			
00370	C. Canaveral B	8007	23:29:38							89	07			26	11			
00371	C. Canaveral B	8007	23:29:42							90	00			25	54			
00372	C. Canaveral B	8007	23:29:48							91	08			25	34			
00373	C. Canaveral B	8007	23:30:00							93	32			24	48			

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OBS. NO.	STATION	STA. NO.	U.T.	h m s		δ ° ' "		Z ° ' "		h ° ' "		MAG.
00374	C. Canaveral B	8007	23:30:30	5	36	-	6	46	42	22	46	2
00375	C. Canaveral B	8007	23:31:00	1	00	-	46	37	24	20	41	2
00376	C. Canaveral B	8007	23:31:30	5	26		43	40		18	37	3.0
00377	C. Canaveral B	8007	23:32:00	5	29		27	12		16	36	3.0
00378	C. Canaveral B	8007	23:33:00	21	11		28	56		12	47	3.0
00379	C. Canaveral B	8007	23:34:00	22	41		22	24		9	16	3.0
00380	C. Canaveral B	8007	23:35:00	23	26		19	39		6	04	3.0
00381	C. Canaveral B	8007	23:36:00	1	04		5	49		3	07	3.0
00390	C. Canaveral B	8007	01:09:30	0	30		16	23		38	38	3.5
00576	College, Alaska	6450	03:32:00							25	46	
00647	C. Canaveral E	8018	00:22:16.88					05		63	46	
00648	C. Canaveral E	8018	00:22:28.88					36		64	22	
00649	C. Canaveral E	8018	00:22:44.88					39		63	56	
00650	C. Canaveral E	8018	00:23:08.88					49		61	04	
00651	C. Canaveral E	8018	00:23:44.88					05		54	08	
00657	Johannesburg	2401	18:49:57									
00658	Johannesburg	2401	20:34:04									
00663	Bonn Observatory	2712	16:45:31									
00664	Bonn Observatory	2712	16:46:21									
00665	Bonn Observatory	2712	18:23:59									
00666	Bonn Observatory	2712	18:25:23									
00667	Bonn Observatory	2712	18:25:53									
00668	Bonn Observatory	2712	18:27:39									
00669	Bonn Observatory	2712	18:29:25									
00670	Bonn Observatory	2712	18:28:00									

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OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	α	δ	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00307	Higashimatsuyama	0210	09:19:43	0	48		59					225				88				
00308	Mizukaide	0231	09:20:59																	
00309	Organ Pass SS	5001	02:45:00	23	39	30	20	24				358	30			35				
00313	Denver	0013	01:02:24																	
00314	Tulsa	0054	01:06:58	3	52		11	45												
00315	Tulsa	0054	01:08:52.5	4	38		-14	30												
00316	Tulsa	0054	01:10:26	5	01		-26	20												
00317	San Antonio	0096	01:08:03.2	5	45		25													
00318	Lawton	0110	01:07:25									123	24			53				
00319	Lawton	0110	01:07:49									128	54			46	54			
00320	Lawton	0110	01:08:06									131	30			43	30			
00321	Denver	0013	02:45:30									256				20				
00322	Amarillo	0064	01:06:35	5	38		21	12												
00323	Amarillo	0064	01:07:24	5	40	00	7													
00324	Amarillo	0064	01:08:12	5	43		-	2	48											
00325	Edinburg	0066	01:07:40									45				47				
00326	Edinburg	0066	01:07:35									45				45	30			
00327	Edinburg	0066	01:07:23									45				46				
00328	Edinburg	0066	01:07:40									45				46				
00329	Alamagordo	0102	01:05:50	6	50		40	54												
00330	Alamagordo	0102	01:10:10	6	40		-16	00				308				27	30			
00331	Tucson	0003	02:44:07									180				22				
00332	Tucson	0003	02:51:24									280	13			32	46			
00382	C. Canaveral B	8007	01:08:00									277	28			33	50			
00383	C. Canaveral B	8007	01:08:10									274	35			34	44			
00384	C. Canaveral B	8007	01:08:20									271	34			35	37			
00385	C. Canaveral B	8007	01:08:30																	

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OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	m	s	°	'	"	MAG.
00854	P1c du M1d1	2705	19:13:23							54	256	28	30				28	30		
00855	P1c du M1d1	2705	19:13:30							42	254	28	42				28	42		
00856	P1c du M1d1	2705	19:13:37							48	252	28	54				28	54		
00857	P1c du M1d1	2705	19:13:46							18	250	29	06				29	06		
00858	P1c du M1d1	2705	19:13:54							30	247	29	12				29	12		
00859	P1c du M1d1	2705	19:14:08							24	243	29	12				29	12		
00860	P1c du M1d1	2705	19:14:10							36	240	29	06				29	06		
00861	P1c du M1d1	2705	19:14:28							30	237	29	00				29	00		
00862	P1c du M1d1	2705	19:14:39							18	234	28	42				28	42		
00863	P1c du M1d1	2705	19:14:48							00	232	28	24				28	24		
00864	P1c du M1d1	2705	19:14:58							06	229	28	00				28	00		
00865	P1c du M1d1	2705	19:15:05							12	227	27	42				27	42		
00866	P1c du M1d1	2705	19:15:13							24	225	27	24				27	24		
00867	P1c du M1d1	2705	19:15:21							06	223	26	54				26	54		
00868	P1c du M1d1	2705	19:15:29							18	221	26	30				26	30		
00869	P1c du M1d1	2705	19:15:38							06	219	26	00				26	00		
00870	P1c du M1d1	2705	19:15:48							06	217	25	24				25	24		
00871	P1c du M1d1	2705	19:15:55							36	215	24	54				24	54		
00872	P1c du M1d1	2705	19:16:07							06	213	24	12				24	12		
00873	P1c du M1d1	2705	19:16:17							12	211	23	24				23	24		
00874	P1c du M1d1	2705	19:16:26							36	209	22	48				22	48		
00875	P1c du M1d1	2705	19:16:33							12	208	22	12				22	12		
00876	P1c du M1d1	2705	19:16:45							24	206	21	24				21	24		
00877	P1c du M1d1	2705	19:16:54							00	205	20	48				20	48		
00878	P1c du M1d1	2705	19:17:05							18	203	20	00				20	00		
00879	P1c du M1d1	2705	19:17:18							30	201	19	12				19	12		
00880	P1c du M1d1	2705	19:17:26							24	200	18	30				18	30		

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OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	MAG.
00881	P1c du M1d1	2705	19:17:35							18	199	17	54	
00882	P1c du M1d1	2705	19:17:47							48	197	17	12	
00883	P1c du M1d1	2705	19:17:54							00	197	16	36	
00884	P1c du M1d1	2705	19:18:02							06	196	16	00	
00885	P1c du M1d1	2705	19:18:23							54	193	14	42	
00886	P1c du M1d1	2705	19:18:35							00	193	13	54	
00887	P1c du M1d1	2705	19:18:50							24	191	12	54	
00888	P1c du M1d1	2705	19:19:01							36	190	12	18	
00889	P1c du M1d1	2705	19:19:10							00	190	11	42	
00890	P1c du M1d1	2705	19:19:22							00	189	11	00	
00891	P1c du M1d1	2705	19:19:31							18	188	10	24	
00892	P1c du M1d1	2705	19:19:42							36	187	9	54	
00893	P1c du M1d1	2705	19:19:51							54	186	9	18	
00894	P1c du M1d1	2705	19:20:53							18	183	5	54	
00895	P1c du M1d1	2705	19:21:09							24	182	5	06	
00896	P1c du M1d1	2705	19:21:18							00	182	4	36	
00897	P1c du M1d1	2705	19:21:32							24	181	3	54	

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00333	Biloxi	0090	00:13:22								90	60		
00334	New Orleans	0031	00:13:41								90	48		
00335	New Orleans	0030	00:12:28								60	48	30	
00336	W. Palm Beach	0016	00:14:33								270	86		
00337	Arlington	0071	00:09:51	22	41									
00338	Arlington	0071	00:10:44							30	00			36
00339	St. Petersburg	0121	00:12:25	2	00									
00340	St. Petersburg	0121	00:14:25	3	55					65				
00341	St. Petersburg	0121	00:19:58	5	25					-35	30			

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OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	m	s	MAG.
00342	Silver Spring	0032	00:10:08	23	00		26							33	30		
00343	China Lake	0098	01:47:19														
00344	Amarillo	0064	01:47:57	21	25		45							38	30		
00345	Edinburg, Tex.	0066	01:52:26											48	30		
00346	Edinburg, Tex.	0066	01:53:36											31	30		
00347	Edinburg, Tex.	0066	01:57:30											295			
00348	Manhattan	0027	01:50:00	23	02		14	56						270			
00349	Lawton	0110	01:50:20	23	05		26	06						189			
00350	Lawton	0110	01:55:08											199	30	25	06
00351	San Antonio	0096	01:52:39.3	23	33		17										
00352	San Antonio	0089	01:52:36											270			44 30
00353	Phoenix	0002	01:50:50	3	58		39	35									
00354	Phoenix	0002	01:52:00	4	22		15	30									
00355	Phoenix	0002	01:55:04	5	11		-21	45									
00356	Alamagordo	0102	01:49:43	22	40		52	00									
00357	Alamagordo	0102	01:51:48	2	04		23	12									
00367	Washington, D.C.	6001	23:12:00	20	20		51	06									
00368	Washington, D.C.	6001	23:15:00	1	50		37	05									
00369	Washington, D.C.	6001	23:18:10	4	15		-7										
00403	Higashimatsuyama	0210	10:08:47.9	1	29	12	-20	36									
00404	Fuchu	0214	10:05:24	23	51		19										
00405	Kagoshima	0218	10:06:08	00	56		34										
00406	Kanaya Maehi	0220	10:05:04	23	08		28										
00407	Konko	0224	10:05:05	23	30		28										
00408	Mizukaicho	0231	08:27:02	5	38		9										
00409	Yokkaichi	0258	10:06:43	00	33												
00410	Mitaka	0229	08:27:20.2											106	36	33	
00411	Mitaka	0229	10:04:54.4											275	54	24	24

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OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	m	s	MAG.
00412	Mitaka	0229	10:05:44.2							36	263	36		27	30		
00413	Mitaka	0229	10:06:54.3							12	244	12		29	00		
00414	Mitaka	0229	10:08:26.9							24	221	24		25	48		
00415	Mitaka	0229	10:10:16.1							18	203	18		18	42		
00416	Sendai	0246	08:24:59							42	77	42		54	12		
00417	Sendai	0246	08:25:16							24	87	24		51	54		
00418	Sendai	0246	08:26:43								115			36	42		
00419	Yamagata	0257	08:25:18								90			49	42		
00420	Yatsushiro	0272	10:03:06								315			40			
00421	Washington, D.C.	6019	00:09:49	22	39			29	30								
00422	Albuquerque	0103	01:56:08	4	25			-34									
00447	C. Canaveral B	8007	00:08:30							16	332	16		10	55		
00448	C. Canaveral B	8007	00:09:00							05	332	05		13	58		
00449	C. Canaveral B	8007	00:09:30							52	331	52		17	26		
00450	C. Canaveral B	8007	00:10:00							33	331	33		21	21		
00451	C. Canaveral B	8007	00:10:30							07	331	07		25	58		
00452	C. Canaveral B	8007	00:11:00							30	330	30		31	16		
00453	C. Canaveral B	8007	00:11:30							38	329	38		37	34		
00454	C. Canaveral B	8007	00:12:00							22	328	22		45	04		
00455	C. Canaveral B	8007	00:12:30							15	326	15		53	57		
00456	C. Canaveral B	8007	00:13:00							58	321	58		64	14		
00457	C. Canaveral B	8007	00:13:30							43	310	43		75	21		
00458	C. Canaveral B	8007	00:14:00							49	251	49		83	49		
00459	C. Canaveral B	8007	00:14:30							58	183	58		77	22		
00460	C. Canaveral B	8007	00:15:00							13	170	13		67	00		
00461	C. Canaveral B	8007	00:15:30							22	165	22		57	37		
00462	C. Canaveral B	8007	00:16:00							59	162	59		49	35		
00463	C. Canaveral B	8007	00:16:30							35	161	35		42	44		

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OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	m	s	MAG.
00464	C. Canaveral B	8007	00:17:00				160	40						37	04		
00465	C. Canaveral B	8007	00:17:30				160	04						32	08		
00466	C. Canaveral B	8007	00:18:00				159	35						27	56		
00467	C. Canaveral B	8007	00:18:30				159	13						24	20		
00468	C. Canaveral B	8007	00:19:00				158	56						21	06		
00469	C. Canaveral B	8007	00:19:30				158	43						18	13		
00470	C. Canaveral B	8007	00:13:55.7				270	00						83			
00471	Ft. Belvoir	0077	23:16:19				180							86			
00472	Philadelphia	0058	23:16:23				180							54			
00473	Washington, D.C.	0014	23:14:02				323	42						59			
00474	Silver Spring	0032	23:14:11	0	40												
00491	W. Palm Beach	0016	23:19:14				90							43			
00492	C. Canaveral B	8007	00:14:35.1				180	00						75	37		
00495	Washington, D.C.	6001	00:08:15	21	20												
00496	Washington, D.C.	6001	00:09:30	22	34												
00497	Washington, D.C.	6001	00:09:40	22	41												
00498	Washington, D.C.	6001	00:10:00	23	04												
00499	Washington, D.C.	6001	00:11:10	0	07												
00500	Washington, D.C.	6001	00:11:30	0	25												
00501	Washington, D.C.	6001	00:13:10	1	48												
00502	Washington, D.C.	6001	00:15:50	3	02												
00503	Washington, D.C.	6001	00:17:30	3	45												
00569	Swarthmore	2038	23:14:50	1	18	58.8											
00570	Swarthmore	2038	23:14:53	1	20	29.8											
00571	U. of Penna. B	8015	23:14:53	1	18	57.2											
00578	College, Alaska	6450	03:24:25														
00652	C. Canaveral D	8017	00:15:07.31				180							16			
00653	C. Canaveral D	8017	00:15:11.31				166	58						67	07		
							166	16						65	46		

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OBS. NO.	STATION	STA. NO.	U.T.	α			δ			Z	h	"	MAG.
				h	m	s	°	'	"	°	'	"	
00654	C.Canaveral D	8017	00:15:15.31							165	39		64 28
00655	C.Canaveral D	8017	00:15:19.31							165	00		63 09
00656	C.Canaveral D	8017	00:15:29.31							163	59		59 55
00661	Johannesburg	2401	18:38:21.4	3	22	06			9 06				

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00475	Biloxi	0090	00:56:52							270			44 30
00476	Denver	0013	00:54:22							125			59
00477	Edinburg, Tex.	0066	00:55:37							352			42 30
00478	Edinburg, Tex.	0066	00:57:03							18			65 30
00479	Edinburg, Tex.	0066	00:57:51							71	30		73 30
00480	Amarillo	0064	00:55:10							90			81 30
00481	Amarillo	0064	00:55:26							96			79
00482	Amarillo	0064	00:55:35										
00483	Sylacauga	0001	00:55:14										
00484	Sylacauga	0001	00:59:24							225			32 13 10
00485	San Antonio	0089	00:57:04							90			81
00486	Manhattan	0027	00:51:39										
00487	Manhattan	0027	00:53:58										
00488	Manhattan	0027	00:54:27										
00489	San Antonio	0096	00:57:02.8										
00490	Whittier	0012	02:34:30							268			61
00493	Tucson	0003	02:38:04							219	30		30 45
00494	Tucson	0003	02:39:57							199	45		21
00507	Honolulu	0114	05:56:40										
00508	Honolulu	0114	06:01:23										
00509	Kanazawa	0221	09:08:54										
00510	Kanazawa	0221	09:09:33										

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OBS. NO.	STATION	STA. NO.	U.T.	α h m s	δ ° ' "	Z ° ' "	h ° ' "	MAG.
00511	Takada	0250	09:08:51					
00512	Sendai	0246	09:09:00			252 18	49 36	
00513	Sendai	0246	09:11:00			197 48	37 06	
00514	Sendai	0246	09:12:34			182 30	27 12	
00515	Yamagata	0257	09:11:02			192 30	40 18	
00550	Bryn Athyn	0055	23:57:22			270	21	
00553	St. Petersburg	0121	23:51:00					
00586	Suwa	0248	09:08:00					
00587	Suwa	0248	09:08:40					
00606	C. Canaveral C	8016	23:56:00	5 42	7			
00607	C. Canaveral C	8016	23:57:00	23 05	49			
00608	C. Canaveral C	8016	23:58:00	0 12	41			
00609	C. Canaveral C	8016	23:59:00					
00618	C. Canaveral B	8007	00:53:30			324 18	9 41	
00619	C. Canaveral B	8007	00:54:00			321 44	15 42	
00620	C. Canaveral B	8007	00:54:30			317 40	23 03	
00621	C. Canaveral B	8007	00:55:00			311 07	32 32	
00622	C. Canaveral B	8007	00:55:30			308 10	5 59	
00623	C. Canaveral B	8007	00:56:00			304 25	8 49	
00624	C. Canaveral B	8007	00:56:30			301 20	10 56	
00625	C. Canaveral B	8007	00:57:00			297 47	13 05	
00626	C. Canaveral B	8007	00:57:30			293 46	15 18	
00627	C. Canaveral B	8007	00:57:41.0			289 17	17 22	
00628	C. Canaveral B	8007	00:58:00			284 12	19 36	
00629	C. Canaveral B	8007	00:58:30			278 29	21 34	
00630	C. Canaveral B	8007	00:59:00			272 24	23 13	
00631	C. Canaveral B	8007	00:59:30			270 00	23 50	
00632	C. Canaveral B	8007	01:00:00			265 43	24 44	
00633	C. Canaveral B	8007	01:00:30			258 41	25 40	

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OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00634	C.Canaveral B	8007	01:01:00							225	05			23	24			
00635	C.Canaveral B	8007	01:01:30							219	44			21	54			
00636	C.Canaveral B	8007	01:02:00							214	56			20	17			
00637	C.Canaveral B	8007	01:02:30							210	41			18	33			
00638	C.Canaveral B	8007	01:03:00							206	53			16	47			
00639	C.Canaveral B	8007	01:03:30							203	32			15	01			
00640	C.Canaveral B	8007	01:04:00							200	33			13	16			
00641	C.Canaveral B	8007	01:04:30							197	56			11	34			
00642	C.Canaveral B	8007	01:05:00							195	32			9	55			
00643	C.Canaveral B	8007	00:59:37.86							260	31			25	53			
00644	C.Canaveral D	8017	00:59:41.86							259	34			26	00			
00645	C.Canaveral D	8017	01:01:13.86							236	18			25	50			
00646	C.Canaveral D	8017	01:01:17.86							235	28			25	44			
00662	Washington, D.C.	6001	23:57:00	22	42													
00671	Bonn Obs.	2712	17:19:42	0	10													

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00551	Bryn Athyn	0055	00:00:47							225				23				
00552	Decatur	0132	00:00:00	1	17													
00554	St. Petersburg	0121	00:01:42	0	58													
00555	St. Petersburg	0121	00:03:00	2	05													
00556	Spokane A	0086	01:32:00							320				20				
00557	Spokane A	0086	01:33:30							270				60				
00558	Spokane A	0086	01:36:45							180				35				
00559	Manhattan	0027	01:38:00	23	18													
00560	Manhattan	0027	01:41:08	0	54													
00561	Whittier	0012	01:37:31							60								68

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OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	c	"	h	"	MAG.
00562	Alamagordo	0102	01:37:39	23	03		32	48						30		30		
00563	Alamagordo	0102	01:39:33	1	06		21	48						22		30		
00564	Amarillo	3010	01:35:53											28		30		
00565	Edinburg, Tex.	0066	01:38:45											32		30		
00566	Edinburg, Tex.	0066	01:39:46											32		30		
00567	Edinburg, Tex.	0066	01:40:42											32		30		
00568	Edinburg, Tex.	0066	01:43:13											32		30		
00572	Organ Pass -SS	5001	01:36:43.2	21	21	00	47	06						48		48		
00573	Organ Pass -SS	5001	01:39:44.4	0	14		6	12						44		44		
00574	Organ Pass -SS	5001	01:40:55.8	2	04	30	-11	18						55		55		
00588	McDonald	2309	01:45:56	3	13		-41							56		56		
00590	Bryn Athyn	0055	22:59:50											58		58		
00610	O. Canaveral C	8016	00:00:00											50		50		
00611	O. Canaveral C	8016	00:01:00											40		40		
00612	O. Canaveral C	8016	00:01:07.9											13		13		
00613	O. Canaveral C	8016	00:02:00											08		08		
00614	O. Canaveral C	8016	00:03:00											31		31		
00615	O. Canaveral C	8016	00:04:00											30		30		
00616	O. Canaveral C	8016	00:05:00											52		52		
00617	O. Canaveral C	8016	00:05:01.8															
00622	Nagasaki I	0235	09:53:32	22	40		28											
00834	Johannesburg	0403	00:28:46	3	21		-62	54										

1957

1957 BETA

January 30, 1958

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	°	'	"	MAG.
00591	Lawton	0110	00:39:45							294	12			46	24			
00592	Lawton	0110	00:41:30							232	48			59				
00593	Lawton	0110	00:44:36							176	36			28	54			
00594	San Angelo	0105	00:41:38							270				80				
00595	San Antonio	0096	00:42:19.5	1	38			27	30									
00596	Edinburg, Tex.	0066	00:43:37							225				81	15			
00597	Edinburg, Tex.	0066	00:44:46							170	30			61	30			
00598	Edinburg, Tex.	0066	00:46:34							162	30			36	15			
00599	Sylacauga	0001	00:44:44							225				12	03	14		
00600	Wichita	0028	00:44:48.2	2	50	49.2	-32	42										
00601	Fort Worth	0069	00:41:07	1	52		29	50										
00602	Fort Worth	0069	00:41:09	1	48		30	20										
00603	Fort Worth	0069	00:41:09	1	56		27	40										
00604	Fort Worth	0069	00:41:30	1	26		24	15										
00605	Spokane A	0086	02:15:45							280				20				
00798	Laredo	4009	00:44:05	3	05		4											
00799	Laredo	4009	00:46:47	4	35		-24											
00800	Greensboro A	0049	23:46:00							209				26				3
00801	W. Palm Beach	0016	23:52:07							180				15				1
00807	C. Canaveral B	8007	23:44:06							280	07			38	11			
00808	C. Canaveral B	8007	23:45:06							258	08			43	25			
00809	C. Canaveral B	8007	23:46:06							233	32			43	10			
00810	C. Canaveral B	8007	23:47:06							213	41			38	12			
00811	C. Canaveral B	8007	18:48:06							200	22			31	34			
00812	C. Canaveral B	8007	23:49:06							191	40			25	13			
00813	C. Canaveral B	8007	23:50:06							185	45			19	40			
00814	C. Canaveral B	8007	23:51:06							181	35			14	55			
00815	C. Canaveral B	8007	23:52:06							178	29			10	44			
00816	C. Canaveral B	8007	23:53:06							176	04			7	04			

1957 BETA

January 30, 1958 (cont'd)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	m	s	MAG.
00817	C. Canaveral B	8007	23:54:06							174	09			3	49		
00818	C. Canaveral B	8007	23:44:35.7							270	00			41	19		
00819	C. Canaveral B	8007	23:51:34.5							180	00			12	52		
00820	Kanazawa	0221	08:54:17	0	25			17									
00821	Yokkaichi	0258	08:54:12	0	03			27									
00823	Mizukaicho	0231	08:55:34							225				42			
00824	Otsu	0269	08:54:28							258				65			
00825	Washington, D.C.	6001	23:42:15	22	37			9	24								
00826	Washington, D.C.	6001	23:43:25	23	22			- 1	48								
00827	Washington, D.C.	6001	23:44:40	0	34			19	48								
00828	Washington, D.C.	6001	23:46:20	1	01			-26									
00835	Johannesburg	0403	17:27:26.4	5	08			- 8	36								
00836	Edwards AFB	3013	02:20:30							245	24			38	43		

January 31, 1958

00802	Denver	0013	01:19:36.6							274	30		22		1
00803	Denver	0013	01:20:48.6							256	30		25		6
00804	San Antonio	0089	01:23:18	22	52			09	30						1 - 7
00805	Albuquerque	0041	01:21:27.5	24	15			15							
00806	Albuquerque	0041	01:27:27.5							264			35	54	
00829	Cambridge	0099	22:43:12							236			27		
00830	Cambridge	0099	22:43:35							229	30		28		

1957 BETA

January 31, 1958 (cont'd)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	i	°	'	"	MAG.
00831	Cambridge	0099	22:44:52							212	30					24			
00832	Cambridge	0099	22:45:07							211	30					23			
00833	Cambridge	0099	22:45:21.2							207	30					19	30		
00838	Johannesburg	0403	18:10:47.6	1	35	12				-57	30								

1957 BETA

February 1, 1958

OPS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	m	"	MAG.
				20	16												
00839	Johannesburg	0403	02:53:53							238	23			13	23		
00840	C. Canaveral B	8007	00:28:00							234	00			12	48		
00841	C. Canaveral B	8007	00:28:30							229	52			12	06		
00842	C. Canaveral B	8007	00:29:00							226	02			11	07		
00843	C. Canaveral B	8007	00:29:30							222	20			10	11		
00844	C. Canaveral B	8007	00:30:00							219	17			9	05		
00845	C. Canaveral B	8007	00:30:30							216	09			8	06		
00846	C. Canaveral B	8007	00:31:00														

February 2, 1958

00837	Stanford, Radar	4008	15:21	Slant Range: 340 km±10										41±1			
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February 3, 1958

00898	C. Canaveral F	8020	00:01:00							282	58			6	54		
00899	C. Canaveral F	8020	00:02:00							274	59			8	58		
00900	C. Canaveral F	8020	00:03:00							266	19			10	21		
00901	C. Canaveral F	8020	00:04:00							257	21			11	11		
00902	C. Canaveral F	8020	00:05:00							248	23			11	17		
00903	C. Canaveral F	8020	00:06:00							239	47			10	41		
00904	C. Canaveral F	8020	00:08:00							224	50			7	56		
00905	C. Canaveral F	8020	00:02:34.8							270	00			9	49		
01007	Pic du Midi	2705	18:04:24							238	24			10	12		

February 4, 1958

00906	C. Canaveral C	8016	11:36:15							118	04			29	05		
00907	C. Canaveral C	8016	11:36:30							99	49			28	34		
00908	C. Canaveral C	8016	11:36:45							83	40			25	47		
00909	C. Canaveral C	8016	11:37:00							71	28			22	11		

1957, BETA

February 4, 1958 (cont'd.)

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	Z	°	'	"	h	m	"	MAG.
00910	C. Canaveral C	8016	11:37:15							62	46			18	40		
00911	C. Canaveral C	8016	11:37:30							56	21			15	37		
00912	C. Canaveral C	8016	11:37:45							51	40			12	59		
00913	C. Canaveral C	8016	11:38:00							48	04			10	49		
00914	C. Canaveral C	8016	11:38:15							45	16			8	56		
00915	C. Canaveral C	8016	11:38:30							43	02			7	19		
00916	C. Canaveral C	8016	11:38:45							41	13			5	54		
00917	C. Canaveral C	8016	11:39:00							39	42			4	38		
00918	C. Canaveral C	8016	11:39:15							38	26			3	31		
00919	C. Canaveral C	8016	11:39:30							37	22			2	30		
00920	C. Canaveral C	8016	11:39:45							36	27			1	33		
00921	Grand Bahama, Radar	4900	11:36:10							86	01	52		70	22	01	
00922	Grand Bahama, Radar	4900	11:36:20							54	34	48		57	43	19	
00923	Grand Bahama, Radar	4900	11:36:30							43	36	36		45	36	25	
00924	Grand Bahama, Radar	4900	11:36:40							38	27	07		36	29	17	
00925	Grand Bahama, Radar	4900	11:36:50							35	29	38		29	49	19	
00926	Grand Bahama, Radar	4900	11:37:00							33	35	17		24	50	53	
00927	Grand Bahama, Radar	4900	11:36:09.2							90	23	53		71	03	04	
00928	Grand Bahama, Radar	4900	11:36:09.3							89	52	26		70	59	06	
										Slant Range: 728,487'							
										Slant Range: 811,158'							
										Slant Range: 955,998'							
										Slant Range: 1,139,496'							
										Slant Range: 1,345,876'							
										Slant Range: 1,564,774'							
										Slant Range: 725,289'							
										Slant Range: 725,664'							

1957 BETA
February 6, 1958

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	°	'	"	Z	°	'	"	h	'	"	MAG.
00929	Bloemfontein	0401	02:39:50	8	02	06	-39	53	02											
00930	Milton	6003	11:10:42	16	34		-	7	12											0
00931	Milton	6003	11:11:22	19	11		27	18												
00932	Milton	6003	11:11:56	20	12		40	18												
00933	Milton	6003	11:12:47	22	52		42	42												2
00934	W. Palm Beach	0016	11:06:03							180							25			
00935	W. Palm Beach	0016	11:07:39	17	40		-21			49							28			
00936	St. Petersburg	0121	11:06:32	19	32		10	36												
00937	St. Petersburg	0121	11:07:21	21	18		35													
00938	St. Petersburg	0121	11:08:30	18	52		31													
00939	St. Paul B	0199	12:50:28																	
00940	San Angelo	0105	12:46:27							180							77	45		1 to
00941	San Angelo	0105	12:46:42							90							84			2 to
00942	Cambridge	0099	11:11:04.8							122							47	06		-2
00943	Cambridge	0099	11:11:09.6							114							47	06		
00944	Cambridge	0099	11:11:27.4							85							42	30		
00945	Cambridge	0099	11:11:27.6							82							42	12		
00946	Cambridge	0099	11:11:32.2							81							41	30		
00947	Cambridge	0099	11:11:34.4							77							40	30		
00948	Cambridge	0099	11:11:34.8							76							40	06		
00949	Cambridge	0099	11:11:43.8							71							34	30		
00950	Cambridge	0099	11:13:00.8							48							15	12		
00951	Cambridge	0099	11:13:23.0							45							12	00		
00952	Cambridge	0099	11:13:15.8							42							12	36		
00953	Amarillo	0064	12:47:31	19	07		13	18												1
00954	Quebec	8021	11:10:50.4	16	29		-26	50												
00955	Quebec	8021	11:12:22.2	19	47		7	10												
00966	Montevideo	0808	07:35:34.2+05	19	03	43	-56	19												
00967	Maul	5010	03:00:45	16	30		-27	06												
00977	Athens	2706	04:36:07																	5

February 7, 1958

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February 8, 1958

000969	Mitaka	0229	20:26:44.2	23 36	56	79 18	2.5
000970	Kurume Machi	0227	20:24:38.6			41 42	3.5
000971	Sendai	0246	20:25:53			17 48	3.0
000972	Mitaka	0229	20:26:03.3			8 18	5.0
000973	Mitaka	0229	20:27:05.7			21 24	-3
000974	Mitaka	0229	20:25:50			8 06	
000975	Mitaka	0229	20:27:07				
000976	U. of Illinois A	2014	12:16:00.4	10 04 54	42 18		
			Note: Angles to 10'	Time to 0.5			
000978	Athens	2706	04:03:16	16 23	-25 12		
000979	Athens	2706	04:03:34	17 08	-15 42		
000980	Athens	2706	04:03:57	18 09	- 0 24		
000981	Athens	2706	04:04:16	19 05	13 18		
000982	Athens	2706	04:04:54	20 26	27 30		
000984	Chicago	0020	12:15:55			45	
000985	Evansville	0094	12:15:00			10	
000986	Lemont	0022	12:17:26			35+5	

1957 BETA

February 8, 1958 (cont'd.)

OBS. NO.	STATION	STA. NO.	U. T.	h	m	s	°	'	"	Z	°	'	"	h	"	MAG.
00987	Terre Haute	0025	12:15:15								270			28		-1.5
00988	Terre Haute	0025	12:17:08								0			35		3
00989	Los Altos	0005	13:52:14													0
00990	Milwaukee A	0074	12:15:30	16	10			12								0
00991	Milwaukee A	0074	12:16:22.9	12	00			-6	30							1
00992	Milwaukee A	0074	12:18:59	11	42			33	30							1
00993	Chicago	0085	12:15:44.0	1	00			52	30							1
00994	Chicago	0085	12:15:51.9	11	15	30		10	07							4
00999	Washington, D.C.	6001	12:15:40	11	10	18		15	23							-1
01008	Yerkes	2042	10:36:40	11	10	18		7	48							
01015	Edwards AFB	3013	12:16:01	19	26			-1								
			13:54:29	12	40					(1950 position)				9	47	49
														10	41	42

February 9, 1958

00983	U. of Illinois	2014	11:08:41.9	20	36	42		23	58							
			Note: Angles to 5'					Time to 0.5								
00995	Harrisonburg	0072	11:10:11	0	47			57	42							0
00996	Dayton	0082	11:08:29.8	0.3	20	16+1		39	54+0.1							1.5
00997	Dayton	0082	11:08:45.8	0.3	20	56+1		40	42+0.2							
00998	St. Paul B	0199	12:56:52													
01000	Dunlap Obs.	2451	11:11:04	23	07	10		44	41		270			24		
01001	Washington, D.C.	6001	11:08:18	10	39			25	12		(1958 position)					
01002	Washington, D.C.	6001	11:08:51	9	28			51	04	12	(1950 position)					
01003	Washington, D.C.	6001	11:09:00	8	50			61	00							
01004	Washington, D.C.	6001	11:09:33	3	30			71	24							
01005	Washington, D.C.	6001	11:10:01	1	54			63	30							
01006	Washington, D.C.	6001	11:10:18	1	36			59	24							
01012	Athens	2706	04:36:21	8	49			47	42							0.0

1957 BETA

February 10, 1958

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	δ	"	Z	°	'	"	h	"	MAG.
01009	Dayton	0082	11:40:23.8+0.5												
01010	Stanford, Radar	4008	13:14:35						0+0:3	120			9 45+18	0	0
01011	St. Paul B	0199	11:39:44.5	20	45		33	30					48		-1

Slant Range: 360 km

February 11, 1958

01024	College, Alaska	6450	17:07:00							180			35		
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February 12, 1958

01013	Stanford, Radar	4008	12:31:44							120			25		
01016	Landstraat	8031	06:07:39.8	2	05		63	36							

Slant Range: 535 km

February 13, 1958

01014	Stanford, Radar	4008	12:58:28							300			32		
01017	Landstraat	8031	04:54:37.8	20	31		29	12							3.5
01018	Blaricum	8023	04:54:03.7	19	01	36	32	18							0.3
01019	Netherlands, 812	8029	04:54:02.7	19	12		31	06							1.5
01020	Utrecht A	2707	04:54:03.0	19	25	18	28	36							1.5
01021	Utrecht A	2707	04:54:20.0	20	21	48	32	00							

Slant Range: 430 km

February 14, 1958

01022	Steenwijk	8004	05:19:36.8	11	11	36	62								-3.0
01023	Steenwijk	8004	05:20:35.0	10	35	24	79								
01025	College, Alaska	6450	16:46:30							180			55		

1957, EETA
February 16, 1958

OBS. NO.	STATION	STA. NO.	U.T.	h	m	s	°	'	"	°	'	"	h	m	s	°	'	"	MAG.
01033	College, Alaska	6450	15:54:15.2							180			41						

February 17, 1958

01026	Steenwijk	8004	04:52:17.4	1	54					63	18								1
01027	Emmen	8025	04:52:37.6	1	30					57	12								1
01028	Sneek	8028	04:52:30.8	1	08	36				60	12								1
01029	Sneek	8028	04:52:52.6	1	39	42				56	54								

February 18, 1958

01030	Emmen	8025	05:14:29.2	03	10					31	00								1
01031	Sneek	8028	05:13:56.7	3	46	54				55	18								1
01032	Steenwijk	8004	05:13:36.9	4	53	30				63	18								1
01034	College, Alaska	6450	16:37:33.2							180			88	30					

February 19, 1958

01035	Laredo, Radar	4009	10:16:43.2							800 N Miles	311	21	2	36					
01036	Laredo, Radar	4009	10:16:57.8							805 N Miles	316	21	4	54					

5. Station Coordinate List

Every station has been given a registration number of four digits (xxxx), which appears in the table with the observation and identifies its source. The coordinates of the stations are listed by station number in the tabular material below.

The registration numbers have been assigned by a code designed to indicate the type of station, its geographical location, and the kind of observations made. However, classification has been difficult since pertinent facts are often missing and some stations make several different kinds of observations (e.g., visual and photographic).

The first of the four digits (Oxxx) denotes the type of station:

- Oxxx : MOONWATCH (visual)
- 2xxx : Astronomical observatories
(visual and photographic)
- 3xxx }
5xxx } : Non-MOONWATCH (visual and photographic)
6xxx }
7xxx }
- 4xxx : Radio and radar
- 8xxx : Alternate observation sites; the names
of all MOONWATCH stations in this category are followed by MW.
- 9xxx : Precision Optical Tracking Stations

When ambiguities remain, the station name listed in the table of observations is followed by symbols with the following meanings:

- MW: MOONWATCH Project
- SS: Super-Schmidt camera
- BN: Baker-Nunn satellite camera
- PT: PHOTOTRACK Project

The second of the four digits (Ox00) indicates the geographical location of the station. With a few exceptions, due to operational reasons, their meanings are as follows:

-107-

x0xx and x1xx: United States, including all territories and possessions except Alaska
x2xx and x3xx: Japan
x4xx : Africa, Alaska, Canada. In this category, the third of the 4 digits is also used to distinguish the location as follows:
 x40x to x44x: Africa
 x45x to x49x: Canada
x5xx : Asia
x6xx : United Kingdom and Eire
x7xx : Europe (except British Isles)
x8xx : South America
x9xx : World-wide

Station Coordinates

Station No.	Station	Longitude East	"	Latitude °	"	Height Meters
0001	Sylacauga, Ala.	273	44 47.4	33	09 44.6	181
0002	Phoenix, Ariz.	247	56	33	27	335
0003	Tucson, Arizona	249	03 51	32	13 59	227
0004	Altaville, Calif.	239	20	38	10 07	366
0005	Los Altos, Calif.	237	52 34	37	23 56	29
0006	Oakland, Calif.	237	48	37	47 00	30
0007	Sacramento A, Calif.	238	43 25	38	38 25.8	180
0008	San Francisco, Calif.	237	32 07	37	46 10	76
0009	Santa Barbara, Calif.	240	18 30	34	24 30	12
0010	Stockton, Calif.	238	47 36	37	54 17	11
0011	Walnut Creek, Calif.	237	55 30	37	55 30	10
0012	Whittier, Calif.	241	58 25	33	58 40	149
0013	Denver, Colo.	255	03 24	39	44 52	1625
0014	Washington, D.C.	282	47 29.5	38	45 37.3	69
0015	Lakeland, Fla.	278	03	28	02	61
0016	West Palm Beach, Fla.	279	55 20	26	39 30	5
0017	Hapeville, Ga.	275	42	33	47 27	323
0018	Boise, Idaho	243	32 30	43	36 30	1006
0019	Idaho Falls, Idaho	247	49 58	43	26 17	1423
0020	Chicago, Ill.	272	21	41	59	218
0021	Danville, Ill.	272	22 26	40	08 57	189
0022	Lemont, Illinois	272	00 19	41	41 48	229
0023	Peoria, Ill.	270	24 09	40	54 19	238
0024	Indianapolis, Ind.	273	50 38	39	40 40	223
0025	Terre Haute, Ind.	272	36 10	39	31 38	155
0027	Manhattan, Kans.	263	31 09	39	09 45	311
0028	Wichita, Kansas	262	45 19	37	41 44	413
0029	Wilmore, Ky.	275	20 06.1	37	51 36	282
0030	New Orleans, La.	269	59	29	57	2
0031	New Orleans, La.	269	53	29	56	2
0032	Silver Spring, Md.	282	59 37	39	05 50	140
0033	Detroit, Mich.	276	47 35	42	28 57	183
0034	Lansing, Mich.	275	31	42	44	261
0035	St. Paul	266	50 01.1	44	55 03.61	306
	Minneapolis A, Minn					
0036	Kansas City, Mo.	265	25 08	39	02 02	259
0038	Lincoln, Nebr.	263	20 48	40	50 18	355
0039	Dover, N. J.	285	28 15	40	57 30	267
0040	Red Bank, N. J.	285	55	40	17 40	0
0041	Albuquerque, New Mex.	253	21 24	35	05 03	1520
0042	Las Cruces, New Mex.	253	09 10	32	19 42	1186
0043	Los Alamos, New Mex.	253	40 40	35	52 30	2256

Station Coordinates (cont'd.)

Station No.	Station	Longitude East			Latitude			Height Meteors
		°	'	"	°	'	"	
0044	Buffalo, N. Y.	281	24		42	58		229
0045	Millbrook, N. Y.	286	22	33	41	51	30	243
0046	New York City, N. Y.	286	01	15	40	54	30	259
0047	Rochester, N. Y.	282	26	11	43	06	27	154
0048	Charlotte, N. C.	279	12	30	35	13	00	195
0049	Greensboro A, N. C.	280	07	57.58	36	04	38.53	265
0050	Cincinnati, Ohio	275	17	24.757	39	11	29.881	270
0051	Columbus, Ohio	276	58	45	39	58	45	229
0052	Cleveland A, Ohio	278	12	16	41	29	46	220
0053	North Canton, Ohio	278	32	40.6	40	55	54.9	366
0054	Tulsa, Okla.	264	03		36	03		204
0055	Bryn Athyn, Pa.	284	56		40	08		85
0056	Chambersburg, Pa.	282	22	10	39	55	41	201
0057	Harrisburg, Pa.	283	05	20	40	15	42	128
0058	Philadelphia, Pa.	284	59	18	39	57	28	32
0059	Pittsburgh, Pa.	280	00		40	29		381
0060	State College, Pa.	282	06	36	40	44	00	393
0061	Yankton, S. Dak.	262	36	34	42	52	42	379
0062	Chattanooga, Tenn.	274	44	23	35	01	02.41	229
0064	Amarillo, Tex.	258	03	28	35	11	30	1125
0065	Bryan, Tex.	263	39	58.630	39	38	14.708	92
0066	Edinburgh, Tex.	261	49	39	26	18	20.4	28
0068	Fort Worth, Tex.	262	37	50	32	44	40	186
0069	Forth Worth, Texas	262	38	14.57	32	42	27.25	182
0070	Waco, Tex.	262	47		31	37		
0071	Arlington, Va.	282	53	30	38	51	30	59
0072	Harrisonburgh, Va.	281	08		38	28	20	463
0073	Roanoke, Va.	280	04		37	19		343
0074	Milwaukee A, Wisc.	271	51	05.62	42	58	07.53	294
0075	Struthers, Ohio	279	30		41	07	30	305
0076	Portland, Oreg.	237	22	27	45	29	19	9
0077	Fort Belvoir, Va.	282	48	42	38	45	30	85
0078	Sunnyvale, Calif.	237	30		37	22	27	17
0079	Athens, Ga.	276	40	35	33	57	06	245
0080	St. Louis, Mo.	269	48	09.5	38	37	59.1	152
0081	Schenectady, N. Y.	285	58	57	42	53	32.4	235
0082	Dayton, Ohio	275	44	10	39	50	52	229
0083	Big Spring, Tex.	258	33	27	32	15	11	754
0084	Dodson, Tex.	259	43	30	34	42		549
0085	Chicago, Ill.	272	23	35.9	41	51	58.4	194

Station Coordinates (cont'd.)

Station No.	Station	Longitude East			Latitude			Height Meters
		°	'	"	°	'	"	
0086	Spokane A, Wash.	242	38	59	47	37	37	706
0087	New Haven A, Conn.	287	03	10	41	19	58	12
0088	Baltimore, Md.	283	24	35	39	24	28	144
0089	San Antonio, Tex.	261	30	48.9	29	27	24.9	256
0090	Biloxi, Miss.	271	08	28	30	23	27	7
0091	Panama City, Fla.	274	25		30	06		5
0092	Rantoul, Ill.	271	50	56.2	40	17	50.7	237
0093	Waco (Connally AFB), Tex.	262	55	30	31	38	30	149
0094	Evansville, Ind.	272	28	08.80	37	58	14.86	129
0096	San Antonio (Randolph AFB), Tex.	261	42	33	29	32	06	232
0097	Bristol, Tenn.	277	50	31	36	35	03	527
0098	China Lake, Calif.	242	20	13.2	35	39	25.2	701
0099	Cambridge, Mass.	288	52	14.25	42	22	47.6	24
0100	Los Angeles, Calif.	241	45	43	33	59	41	61
0101	Dayton (Wright-Patterson AFB), Ohio	274	55		39	47		
0102	Alamogordo, New Mex.	254	02	58.045	32	52	24.273	1335
0103	Albuquerque (Kirtland AFB), N. Mex.	253	23	30.837	35	03	18.25	1618
0104	El Paso (Biggs AFB), Tex.	253	37		31	50		
0105	San Angelo (Goodfellow AFB), Tex.	259	32	13	31	27	19	581
0106	Phoenix (Williams AFB), Ariz.	248	19		33	17		
0107	Yuma, Ariz.	245	24	53	32	39	09	65
0108	Patterson, N. J.	285	51		40	54		30
0109	Santa Monica, Calif.	241	20		34	04	30	2800
0110	Lawton, Okla.	261	35	48	34	39	45	1175
0111	Clinton, Miss.	269	40	03.787	32	20	20.78	353
0112	Cary, N. C.	281	14	17	35	47	41	152
0113	Van Nuys, Calif.	241	24	45	34	14	22	276
0114	Honolulu, Pacific	202	20	45	21	18	13	94
0115	Truk, Pacific	151	51		7	28		2
0116	Wake, Pacific	166	39		19	16	30	4
0117	Yap, Pacific	138	08		9	31		16
0118	Pago Pago, Pacific	189	19	10	-14	16	50	3
0119	Culver City, Calif.	241	24	06	34	09	01.8	
0120	Norwalk, Conn.	286	34	35	41	09	21	30
0121	St. Petersburg, Fla.	277	16		27	46	40	15
0122	Madison, Wisc.	270	33	39	43	03	57	317

Station Coordinates (cont'd.)

Station No.	Station	Longitude East ° ' "	Latitude ° ' "	Height Meters
0123	Memphis, Tenn.	270 08 46.6	35 09 26	85
0124	New Britain, Conn.	284 13 45	41 41 25	61
0125	San Antonio (Lackland AFB), Tex.	261 23 09.1	29 22 46.7	213
0126	Bartlesville, Okla.	264 04	36 42	213
0127	Reno, Nev.	240 12	39 33	1372
0128	Salem, Ill.	271 02 00	38 38 45	174
0129	Dallas, Tex.	263 14 29	32 51 10	172
0130	Tempe, Ariz.	248 06	33 25	347
0131	Hapeville, Ga.	275 38 24	33 39 11	270
0132	Decatur, Ga.	275 42 57	33 47 27	323
0133	San Diego, Calif.	242 45 13.7	32 42 25.9	125
0134	San Jose, Calif.	238 11 13	37 23 01	122
0135	Oklahoma City, Okla.	262 29 20	35 33 50	360
0136	Wichita Falls, Tex.	261 26	33 49	303
0194	New Haven B, Conn.	287 05 55	41 19 41	
0197	Greensboro B, N. C.	280 11	36 04	
0198	Milwaukee B, Wisc.	272 01 15.1	42 59 25.5	
0199	St. Paul B, Minn.	266 45 59.4	44 58 30.7	
0200	Akita, Japan	140 07 02	39 41 42	6
0201	Asahikawa	142 21 50	43 46 27	113
0202	Ashiya	135 18 55	34 43 42	14
0204	Chunichi	136 54 14	35 10 23	25
0205	Fukuoka I	130 25 40	33 37 25	16
0206	Fukuoka II	130 21 33	33 34 50	14
0207	Fukuoka III	130 24 59	33 33 10	23
0208	Gifu	136 47 04	35 25 49	339
0209	Hashimoto	135 37 03	34 19 02	125
0210	Higashimatsuyama	139 23 54	36 02 22	31
0211	Hiroshima	132 28 10	34 22 08	3
0212	Honjo	139 11 05	36 14 25	56
0213	Hofu	131 33 56	34 03 13	10
0214	Fuchu	133 14 25	34 34 25	30
0215	Ichinomiya	136 48 42	35 17 32	8
0216	Ikoma	135 40 23	34 40 34	634
0217	Isahaya	130 03 08	32 51 41	70
0218	Kagoshima	130 31 47	31 31 34	13
0219	Kanagawa	139 21 16	35 26 34	51
0220	Kanaya Machi, Japan	135 15 10	34 03 46	40
0221	Kanazawa	136 41 01	36 32 45	80
0222	Kashiwabara	135 48 15	34 30 24	66
0223	Kiryu	139 19 54	36 24 22	110
0224	Konko	133 37 40	34 32 31	4
0225	Kumamoto	130 44 34	32 46 57	17
0226	Kure	132 33 44	34 14 57	5

Station Coordinates (cont'd.)

Station No.	Station	Longitude			Latitude			Height Meters
		East	"	"	"	"	"	
0227	Kurume Machi	139	31	48	35	45	18	52
0228	Manazuru	139	08	46	35	09	23	25
0229	Mitaka	139	32	30	35	40	20	50
0230	Miyazaki	131	25	24	31	55	23	8
0231	Mizukaide	139	59	18	36	00	56	12
0232	Mount Fuji I	138	48	50.3	35	31	20.8	815
0233	Musashino	139	34	35	35	42	58	75
0234	Nagano	137	50	44	35	30	50	500
0235	Nagasaki I	129	51	56	32	46	53	15
0236	Nagoya	136	59	11	35	08	57	50
0237	Nakatsu	131	11	53	33	36	10	5
0238	Niigata	139	02	21	37	55	05	24
0239	Oita, Japan	131	11	57	33	36	06	4
0240	Osaka	135	31	01	34	38	36	24
0241	Osaka Yomiuri	135	30	30	34	41	51	30
0243	Otaru	141	00	23	43	11	27	10
0244	Saga	130	17	59	33	14	35	5
0245	Sapporo	141	22	13	43	04	49	20
0246	Sendai	140	51	56	38	15	22	45
0247	Shizuoka	138	23	18	34	58	25	20
0248	Suwa	138	07	43	36	00	13	762
0249	Tadotsu	133	45	16	34	16	20	5
0250	Takada	138	15	22	37	06	38	23
0251	Takamatsu	134	02	13	34	20	28	5
0252	Tohoku Univ.	140	52	38	38	16	28	47
0253	Tokushima	134	35	32	34	07	34	1
0254	Toyama	137	11	07	36	42	13	65
0255	Toyohashi	137	24	37	34	45	09	16
0256	Uwajima	132	33	32	33	12	49	2
0257	Yamagata	140	20	59	38	15	16	151
0258	Yokkaichi, Japan	136	39	00	35	00	15	3
0259	Kyoto	135	42	24	35	01	01	55
0260	Atsuta	136	54	17	35	08	05	10
0261	Chiba	139	58	14	35	51	29	10
0262	Himeji	134	41	24	34	50	25	25
0263	Kasukabe	139	44	34	35	58	36	5
0264	Kochi	133	30	35	33	33	25	30
0265	Kyushu Univ.	130	30	41	33	19	55	8
0266	Mie	136	37	19	34	58	10	3
0267	Mizusawa	141	07	51	30	08	04	62
0268	Nagasaki II	129	52	20	32	47	05	25
0269	Otsu	135	52	08	35	00	24	90
0270	Takaoka	137	01	39	36	44	23	8
0271	Utsunomiya	139	51	45	36	33	56	130
0272	Yatsushiro	130	36	15	32	30	21	3
0273	Mt. Fuji II	138	48	57.5	35	25	50.6	1040

Station Coordinates (conttd.)

Station No.	Station	Longitude East ° ' "	Latitude ° ' "	Height Meters
0400	Lwiro, Belgian Congo	28 45	- 2 16	1707
0401	Bloemfontein, Union of S. Africa	26 13 35.50	-29 06 19.56	1494
0402	Cape Town, Union of S. Africa	18 28 37.984	-33 56 00.440	7
0403	Johannesburg, Union of S. Africa	28 04 30	-26 10 55.3	1806
0404	Pretoria, Union of S. Africa	28 13 43.5	-25 47 18	1542
0600	Adelaide, Australia	138 36 14	-34 55 14	55
0601	Perth	115 51 10	-32 00 07	5
0602	Sydney	151 05 41	-33 54 43	15
0603	Woomera	136 46 59	-31 06 13	155
0604	Melbourne	144 58 24	-37 49 54	29
0800	Buenos Aires	301 33 55.96	-34 36 19.26	23
0801	Buenos Aires	301 33 39	-34 37 10	103
0802	Merlo Pcia, Bs. As.	301 15 03	-34 40 56	25
0803	Cordoba	295 48 12	-31 25 16	439
0804	Antofagasta, Chile	289 34 03	-23 39 11	10
0805	Santiago (Romero)	289 18 48	-33 33 42	573
0806	Santiago (Heilmair)	289 21 46	-33 25 21	864
0807	Arequipa, Peru	288 27 55	-16 23 05	2377
0808	Montevideo, Uruguay	303 50 00	-34 55 10	38
0809	Quito, Ecuador	281 32 15	- 0 10 47	
0900	Puebla, Pue, Mex.	261 49	19 03	2200
0901	Curacao, Emmastad, Netherlands, Antilles	291 03 28	12 09 04	6
2001	Univ. of Alabama Obs.	272 27 27	33 12 33	87
2002	Lowell Obs.	248 18 51	35 12 30.5	2210
2003	Univ. of Arizona Obs.	249 03 05	32 13 59.4	757
2004	Leuschner Obs.	237 44 16	37 52 23.5	94
2005	Lick Observatory	238 21 16	37 20 25.3	1283
2006	Mt. Palomar Obs.	243 08 10	33 21 22.4	1706
2007	Mt. Wilson Obs.	241 56 25	34 12 59.5	1742
2008	Wesleyan Univ. Obs.	287 20 27	41 33 18	65
2009	Yale Univ. Obs.	287 04 51	41 19 22.3	40
2010	Georgetown College Obs.	282 55 26	38 54 26	62
2011	U. S. Naval Obs.	282 56 03	38 55 14.0	86
2012	Agnes Scott College Obs.	275 42 21	33 55 54.5	315
2013	Northwestern Univ. Obs.	272 19 32	42 03 27.2	175
2014	Univ. of Illinois Obs., A	271 46 31.5	40 06 20.2	236
2015	Univ. of Indiana, Obs.	273 28 45	39 09 56	238

Station Coordinates (cont'd.)

Station No.	Station	Longitude East ° ' "	Latitude ° ' "	Height Meters
2016	Univ. of Iowa, Obs.	268 28 00	41 39 44	221
2017	Maria Mitchell Obs.	289 53 43	41 16 50	20
2018	Mt. Holyoke College Obs.	287 25 15	42 15 18.2	76
2019	Wellesley College Obs.	288 41 40	42 17 37.1	61
2020	Univ. of Michigan Obs.	276 16 11	42 16 48.7	282
2021	McMath-Hulbert Obs.	276 44 10	42 39 47.7	296
2022	Univ. of Minnesota, Obs.	266 45 44	44 58 40	260
2023	Univ. of Mississippi, Obs.	270 28 12	34 22 12.6	161
2024	Washington Univ. Obs.	269 41 40	38 38 57.0	178
2025	Princeton Univ. Obs.	285 21 06	40 20 47.7	43
2026	Dudley Obs.	286 13 13	42 39 12.8	70
2027	Cornell Univ. Obs.	283 31 26	42 27 10.4	270
2028	Columbia Univ. Obs.	286 02 30	40 48 34.6	25
2029	Syracuse Univ. Obs.	283 51 40	43 02 13.1	160
2030	Cincinnati Obs.	275 34 39	39 08 19.8	247
2031	Warner and Swasey Obs., A	278 25 55	41 32 13.1	247
2032	Ohio State Univ. Obs.	276 59 21	39 59 50.4	233
2033	Ohio Wesleyan Univ. Obs.	276 56 40	40 15 04	270
2034	Univ. of Pittsburgh, Obs.	279 58 40	40 28 58.1	370
2035	Haverford College Obs.	284 41 49	40 00 40.1	116
2036	Univ. of Pennsylvania Obs., A	284 43 17	39 58 02.1	74
2037	Lehigh Univ. Obs.	284 37 01	40 36 23.2	110
2038	Swarthmore College Obs.	284 38 36	39 54 16.2	63
2039	McDonald Obs.	255 58 40	30 40 17.0	2081
2040	Univ. of Virginia Obs.	281 28 40	38 02 01.2	259
2041	Univ. of Wisconsin Obs.	270 35 32	43 04 36.8	292
2042	Yerkes Obs.	271 26 41	42 34 12.6	334
2043	Sacramento Peak Obs.	254 10 47.261	32 47 14.870	2823
2044	Colgate Univ. Obs.	284 28	42 49	
2045	Rensselaer Polytechnic Obs.	286 19 14.893	42 43 44.2	
2046	Univ. of Illinois Obs., B	271 46 36.7	40 06 16.2	
2047	Univ. of Illinois Obs. C	271 46 24.0	40 05 54.3	
2048	Univ. of Illinois Obs. D	271 40 22.8	40 01 04.6	
2049	Univ. of Illinois Obs. E	271 49 55	40 08 28	
2050	Warner and Swasey (Nassau Sta.), B	278 55 36	40 35	

Station Coordinates (cont'd.)

Station No.	Station	Longitude East ° ' "	Latitude ° ' "	Height Meters
2052	Agassiz Station, Har.	285 26 27	42 25 18	183
2053	Princeton Obs. of Instruction	285 20 35.8	40 20 57.8	65
2054	Boston Univ. Obs.	288 53 37.5	42 21 00.6	36
2400	Boyden Station, Bleemfontein	26 24 21	-29 02 18	1387
2401	Union Obs. Johannesburg	28 04 30	-26 10 55.3	1806
2450	Dominion Obs., Ottawa	284 17 00.8	45 23 38.1	87
2451	David Dunlap Obs., Univ. of Toronto	280 34 40.5	43 51 46	244
2600	Mt. Stromlo Obs.	149 00 20	-35 19 16	768
2601	Sydney Obs.	151 12 14.6	-33 51 41.1	44
2650	Royal Greenwich Obs., Herstmonceux	0 20 16	50 52 01.3	32
2651	Armagh Obs., A	353 21 08	54 21 11.1	64
2652	Dunsink Obs., A	353 39 43.5	53 23 13.1	86
2653	Royal Obs. Edinburgh	356 48 59	55 55 30	146
2654	Dunsink (santry), B	353 45	53 24	
2700	Vienna Univ. Obs.	16 20 20	48 13 55.1	240
2701	Bratislava-Koliba Obs.	17 06 37	48 10 18	260
2702	Ondrejov Obs.	14 47 01	49 54 38.1	533
2703	Copenhagen Univ. Obs.	12 34 40	55 41 12.6	14
2704	Helsinki Univ. Obs.	24 57 16.5	60 09 42.3	33
2705	Pic du Midi Obs.	0 08 32	42 56 12.0	2862
2706	National Obs., Athens	23 43 01	37 58 19.7	110
2707	Sonnenborgh Obs., Utrecht A	5 07 45	52 05 10	14
2708	Stockholm Obs.	18 18 30	59 16 18	55
2709	Harestua Obs.	10 45 00	60 12 30	
2710	Observatoire de Saint Michel	5 04 48	43 55 47.2	580
2711	Skalná Pleso (Haute Tatra) Obs.	20 14 00	49 11 42	1783
2712	Univ. Obs., Bonn	6 50 58.6	-50 09 47.2	
2800	National Obs., Cordoba	295 48 12.6	-31 25 16.4	434
2801	National Obs., Santiago	289 18 43.6	-33 33 44.2	580
2900	Manila Obs., Philippines	120 34 45	16 24 46	

Station Coordinates (cont'd.)

Station No.	Station	Longitude East ° ' "	Latitude ° ' "	Height Meters
3001	Perkin Elmer, Norwalk, Conn.	286 35	41 09	
3002	Hanscom AFB, Mass.	288 44 42	42 27 18	
3003	Cape Canaveral, A, Fla.	279 25 39	28 26 02.36	
3004	Perkin Elmer, Fla.	279 27 04.32	28 02 58.48	30
3005	Patuxent N.A.S., Md.	283 36	38 17	
3006	Fort Monmouth, N. J.	285 54 39	40 17 46	
3007	Holloman AFB, White Sands, New Mex.	253 40	32 25 30	
3008	Whittenburg College, Ohio	276 11 02.9	39 56 08.1	
3009	Wright-Patterson, AFB, Ohio	275 55 11	39 47 22	
3010	Amarillo AFB, Tex.	258 03 28	35 11 30	
3011	Westover AFB, Mass.	286 19 15	42 43 44	
3012	Eglin AFB, Fla.	273 30	30 30	
3013	Edwards AFB, Calif.	242 04 58.43	34 56 43.19	
3450	Fort Churchill, Manitoba	265 55 01	58 45	
3601	Woomera Range, Edinburg, Australia	136 46 46	-31 06 06	
3602	Salisbury, Australia	138 38 45	-34 44 13	
3900	Wilkes, Antarctica	110 27	-66 28	
4001	Stanford Res. Inst. Palo Alto, Calif.	237 47	37 25	
4002	Lincoln Labs., Lexington, Mass.	288 30 31	42 37 02	
4003	Evans Labs, N. J.	285 56 20.4	40 11 02	
4004	Diana Radar, N. J.	285 05 42	40 12	
4007	Cornell Aero. Lab., B, N. Y.	281 16 36	42 55 56	
4008	Stanford Res. Inst., Calif.	237 49 29	37 24 11	152
4009	Laredo Radar, Tex.	260 29 21	27 31 07	
4650	Jodrell Bank, Macclesfield, Eng.	357 41 38	53 30 11	
4900	Grand Bahama, B.W.I.	281 39 06.8	26 36 34.9	
5001	Organ Pass, New Mex, SS	253 26 51.741	32 25 24.550	1651
5002	El Segundo, Calif. PT	241 50	33 50	
5003	Eastman, Rochester, N. Y. PT	282 33 58	43 03 38	
5004	Good Hope, Ill. PT	269 20	40 38	
5005	Cleveland, Ohio, PT	278 20	41 30	

Station Coordinates (cont'd.)

Station No.	Station	Longitude East ° ' "	Latitude ° ' "	Height Meters
5006	Anso, Binghampton, N. Y. PT	284 10	42 07	
5007	Albuquerque, New Mex. PT	253 20	35 00	
5008	Petersburg, Alaska, PT	227 00	56 45	
5009	Menlo Park, Calif., PT	237 50	37 25	
5010	Maui Hawaii, SS	203 44 23.4	20 42 36	3058
5011	Holloman AFB, White Sands, New Mex., B	253 50 26.949	33 07 56.183	
5450	Meanook, Alberta	246 39 15.4	54 36 58.6	68
5451	Newbrook, Alberta	247 02 43.7	54 19 28.3	67
5800	Quito Station, New Mex. College Of A and M	281 39	- 0 05 30	
5801	Quito Station, B	281 31	- 0 12	
6001	Washington, D. C., R. H. Wilson	282 59 24	38 50	
6002	Washington, D. C., Smithsonian Inst.	282 58 24	38 53 17.3	
6003	Milton, Mass., H. Stubbs	288 53	42 13	
6004	Weston, Mass., A. Campbell	288 43 25	42 23 09	175
6005	Dover, New Hampshire	289 07 26	43 23 10	
6006	Cornell Aero. Lab., A	281 19 30	42 57 05	213
6007	Charleston, S. C., G. L. Luke	280 01	32 55	
6008	Dahlgren, Va., NPG	282 57 59.07	38 17 03.19	
6010	Welcome, MO., L.T. Johnson	282 53 26	38 24 29	
6011	Hampton, Va., Hastings- Raydist, Inc.	238 39 03.409	37 00 56.210	
6019	Washington, D. C., H Fitzpatrick	282 56 24	38 56 06	
6450	College Geophysical Station, Alaska	212 10 12	64 51 18	
6700	Jockis Meteorological Obs., Finland	23 19	60 49	
6701	Helsinki Obs., B	25 02 30	60 12 54	
6900	Cape Hallett, Antarctica	170 18	-72 18	
6901	Air Force, Arctic	251 30	81 24	

Station Coordinates (cont'd.)

Station No.	Station	Longitude East	Latitude	Height Meters
7000	Canberra, Australia, Lawley House	149 08	-35 19	570
7001	Canberra, Australia, National Univ.	149 06 30	-35 16	560
7002	Pezinok, Czechoslovakia	17 16 21	48 17 47	170
7003	Decatur, Georgia	275 42 57	33 47 27	323
8001	Blossom Pt. Md., R. H. Wilson	282 54 48.2	38 25 49.6	
8002	Utrecht B, Netherlands - 802	5 05 20	52 05 31	
8003	Hilversum, Netherlands - 805	5 10 00	52 12 20	
8004	Steenwijk, Netherlands - 807	6 07 01	52 46 59	
8005	Sacramento MW, D	239 08 36	38 38 06	
8006	Washington D. C., L. Hořloway	283 03	38 52	
8007	Cape Canaveral B, Fla.	279 26 21.5	28 31 29.3	11
8008	Pasadena, Calif., (Pasacal)	241 50 38	34 06 56	
8009	Washington, D.C., MW, C	282 47 30	38 45 30	69
8010	Navy	14 52	35 51	
8011	Mt. Vaca, Calif., (Sacramento MW)	237 53 24	38 24 30	
8012	Navy	291 34 42	36 01 12	
8013	China Lake, Calif.	242 22 30	35 41 38	
8014	Blossom Pt., Md. L.T. Johnson	282 55	38 25	
8015	Univ. of Penn., B	284 31 24	39 59 57	74
8016	Cape Canaveral, C, Fla.	279 25 05.5	28 25 16.3	6
8017	Cape Canaveral, D, Fla.	279 25 40.4	28 06 33.8	6
8018	Cape Canaveral, E, Fla.	279 26 11.0	28 30 02.2	9
8020	Cape Canaveral, F, Fla.	279 24 38	28 27 58.3	
8021	Quebec, Canada	288 31 06	46 53 03	
8022	Weesp, Netherlands - 803	5 02 21	52 18 12	
8023	Blaricum, Netherlands - 804	5 14 53	52 16 15	
8024	Amsterdam, Netherlands - 806	4 42 00	52 18 25	
8025	Emmen, Netherlands - 808	6 54 15	52 46 40	
8026	Beverwijk, Netherlands - 809	4 38 56	52 28 58	

Station Coordinates (cont'd.)

Station No.	Station	Longitude East ° ' "	Latitude ° ' "	Height Meters
8027	Bussum, Netherlands - 810	5 09 18	52 16 52	
8028	Sneek, Netherlands - 811	5 39 52	53 02 25	
8029	Netherlands - 812	6 08 28	52 19 51	
8030	Netherlands - 813	5 03 14	52 39 50	
8031	Landstraat, Netherlands 814	4 44 59	52 37 39	
8032	Washington, D. C., Bald Eagle Hill	282 59 31	38 49 13	
8034	Mansfield, Conn.	287 48 40	41 49 20	
8035	Boulder, Radio	254 42	40 05	
8036	Armagh Obs., B	353 21 12	54 21 12	
8037	Univ. of Kansas	264 45	38 37 31	
8039	Cape Canaveral, Fla. G	279 24 38	28 16 18	11
8500	Sacramento, Calif., MW, B	238 59 38.4	38 41 19.8	411
8501	Sacramento, Calif., MW, C	238 14 58.8	38 33 05.4	
8502	Spokane, Wash., MW, B	242 42 30	47 45 00	
8503	Fort Worth, Tex. MW, B	262 37 51	32 42 42	
8505	Cleveland, Ohio, MW, B	278 10 18	40 25 30	
8506	Sylacauga, Ala., MW, B	273 44 39.8	33 10 20.3	
8507	Near Adelaide, Australia	138 35 48	-34 55 39	
8508	Sunnyvale, Calif., MW, B	238 01 48	37 12	
8509	Springfield, Va. (Washington D. C. MW), B	282 56 48	38 54 12	
8510	New York City, MW, B.	286 04 10	40 44 23	
9001	Organ Pass, New Mex. BN	253 26 51.741	32 25 24.550	1651
9002	Olifantsfontein, S. Africa BN	28 08 25.5	-26 11 42	1707
9003	Woomera, Australia, BN	136 48	-31 08	
9005	Tokyo, Japan, BN	139 32 30	35 40 21.4	59
9004	Cadiz, Spain, BN	353 47 42	36 27 42.0	30

6. Acknowledgements

We wish to emphasize that the observational data stem from the efforts of thousands of persons who, in the true spirit of the International Geophysical Year, have given freely of their time and work. It is a privilege for us to acknowledge these contributions which have made possible the tracking of artificial earth satellites.

At the Smithsonian Astrophysical Observatory, the task of obtaining, screening, and processing the raw data has been the obligation of the Optical Satellite Tracking Program under Dr. J. Allen Hynek, associate director of the observatory, and K. H. Drummond, executive officer of the tracking program. It fell principally upon the staff of the Computations and Analysis Section of this program to cope with the large volume of data and to present the material in a useful form. For the manuscript preparation of the report, we wish to thank Thelma Bourne, Lillian Christmas, Janet Clarke, Connie Cowhig, Jane Henderson, Bringfriede Jensen, and Rinda Rogers.

We wish especially to express our appreciation to Dr. G. F. Schilling for his devoted interest, encouragement, and guidance in the compilation and Mrs. Lyle Boyd for her editorial assistance.