SOLAR OBSERVATIONS

SOLAR RADIATION MEASUREMENTS DURING OCTOBER 1936

By IRVING F. HAND, Assistant in Solar Radiation Investigations

For a description of instruments employed and their exposures, the reader is referred to the January 1935 REVIEW, page 24.

Table 1 shows that solar radiation intensities averaged close to normal at all three Weather Bureau stations.

TABLE 1.—*Solar radiation intensities during October 1936*

[Gram-calories per minute per square centimeter of normal surface]

WASHINGTON, D. C.

Date	Sun's zenith distance										
	8 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	Noon
	75th mer. time	Air mass									Local mean solar time
		A. M.					P. M.				
	e	5.0	4.0	3.0	2.0	[1] 1.0	2.0	3.0	4.0	5.0	e
	mm	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mm*
Oct. 2	8.48	0.70	0.79	0.92	1.14	1.35	1.06	0.92	0.81	0.69	7.29
Oct. 12	6.27	------	------	1.09	1.24	1.39	------	------	------	------	6.50
Oct. 13	5.16	------	------	.81	1.01	1.39	------	------	------	------	5.79
Oct. 19	6.76	.67	.76	.90	1.16	1.42	------	------	------	------	7.04
Oct. 20	8.81	.81	.89	1.06	1.22	1.44	1.22	1.04	.94	.83	6.53
Oct. 21	10.59	.81	.92	1.07	1.26	1.39	1.28	1.11	.99	.89	11.81
Oct. 27	2.87	.89	.96	1.10	1.35	1.49	------	------	------	------	2.16
Oct. 29	5.36	------	------	.70	0.86	------	------	------	------	------	4.37
Oct. 30	3.99	.60	.75	.93	------	------	------	------	------	------	3.63
Means	------	.74	.84	.95	1.16	1.41	1.19	1.02	.91	.80	------
Departures	------	−.01	−.01	−.02	+.03	−.01	+.06	+.07	+.09	+.06	------

MADISON, WIS.

Oct. 2	3.81	------	0.86	1.14	1.21	1.40	------	------	------	------	4.95
Oct. 8	7.87	0.95	1.09	------	1.40	------	------	------	------	------	7.57
Oct. 15	8.81	------	------	------	------	------	1.08	------	------	------	11.81
Oct. 19	7.57	------	------	------	1.22	------	------	------	------	------	10.21
Oct. 27	2.62	------	------	------	1.32	------	------	------	------	------	3.00
Oct. 29	4.17	------	------	------	1.30	------	------	------	------	------	3.63
Means	------	(.95)	(.98)	(1.14)	1.29	(1.40)	(1.08)	------	------	------	------
Departures	------	+.15	+.06	+.09	+.09	−.03	−.12	------	------	------	------

LINCOLN, NEBR.

Oct. 1	4.95	0.89	1.05	1.19	1.31	1.51	------	------	------	------	4.75
Oct. 5	10.97	------	.68	.83	1.08	1.43	------	------	------	------	11.81
Oct. 7	5.56	------	------	1.05	1.26	1.59	1.26	1.06	0.93	0.84	5.56
Oct. 15	10.59	------	.73	.82	1.07	1.59	------	------	------	------	10.97
Oct. 20	8.81	------	------	------	1.24	------	------	------	------	------	5.56
Oct. 22	2.49	1.00	1.11	1.25	1.43	------	1.39	1.24	1.08	.96	2.36
Oct. 23	2.74	------	------	------	1.32	------	1.25	1.06	.95	.82	2.49
Oct. 24	3.45	.90	.99	1.15	1.35	------	------	------	------	------	4.57
Oct. 26	2.16	------	------	------	------	------	1.40	1.24	.98	.71	2.06
Oct. 29	3.63	------	------	------	------	------	1.36	1.20	1.06	.90	3.81
Oct. 30	3.30	------	1.09	1.22	------	------	------	------	------	------	7.57
Oct. 31	10.21	.86	.91	1.00	------	------	------	------	------	------	9.83
Means	------	.91	.94	1.06	1.26	1.53	1.33	1.16	1.00	.85	------
Departures	------	+.08	+.01	−.03	−.03	+.05	+.08	+.08	+.06	+.02	------

TABLE 1.—*Solar radiation intensities during October 1936*—Contd.

[Gram-calories per minute per square centimeter of normal surface]

BLUE HILL, MASS.

Date	Sun's zenith distance										
	8 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	Noon
	75th mer. time	Air mass									Local mean solar time
		A. M.					P. M.				
	e	5.0	4.0	3.0	2.0	[1] 1.0	2.0	3.0	4.0	5.0	e
	mm	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mm*
Oct. 2	7.9	------	------	0.95	1.04	1.25	1.16	------	------	------	7.9
Oct. 3	5.8	1.01	1.04	1.18	1.30	1.44	1.30	1.12	------	------	4.8
Oct. 4	5.6	------	.97	1.08	1.22	1.38	1.21	1.02	0.89	------	6.5
Oct. 5	8.2	------	.88	1.14	1.14	------	------	------	------	------	7.9
Oct. 6	9.2	------	.88	1.22	------	------	1.22	1.01	.84	------	9.2
Oct. 8	13.2	------	.78	.93	------	------	1.20	.94	.73	------	9.9
Oct. 9	6.8	------	.70	------	1.05	------	------	------	------	------	6.1
Oct. 12	6.1	------	------	------	1.18	------	1.35	1.24	1.14	1.06	5.2
Oct. 13	3.5	------	1.04	1.14	1.24	------	------	------	------	------	2.9
Oct. 18	7.4	------	.82	.94	1.35	------	------	------	------	------	5.2
Oct. 19	5.2	.85	.94	1.04	------	------	------	------	------	------	5.2
Oct. 20	8.2	------	.60	.73	.94	------	.98	.78	.71	.65	6.8
Oct. 21	19.6	------	1.09	1.20	1.31	------	------	------	------	------	8.2
Oct. 22	12.8	------	------	------	1.07	------	------	------	------	------	12.3
Oct. 24	6.8	.68	------	------	------	------	------	------	.89	------	7.4
Oct. 25	3.8	------	------	1.08	1.19	------	------	------	------	------	5.4
Oct. 27	2.1	------	------	1.26	1.36	------	1.36	1.26	1.16	1.06	1.8
Oct. 28	2.9	------	------	1.26	1.37	------	1.37	1.26	1.15	1.05	2.4
Oct. 29	5.8	------	------	1.07	1.10	------	1.10	.63	------	------	3.8
Oct. 30	5.0	------	------	------	1.07	------	1.16	------	------	------	2.8
Oct. 31	2.8	1.02	1.11	1.23	1.35	------	------	------	------	------	2.8
Means	------	.89	.90	1.09	1.19	1.36	1.22	1.03	.94	.96	------

[1] Extrapolated.

Table 2 shows a deficiency in the amount of total solar and sky radiation received on a horizontal surface at all stations with the exception of Washington, Lincoln, Madison, Fairbanks, and New Orleans.

The Callendar receiver and recording Wheatstone bridge which have been in constant service for the last 25 years at Madison, Wis., for measuring total solar and sky radiation received on a horizontal surface, were replaced early in the month by an Eppley 10-junction thermoelectric pyrheliometer and a Leeds and Northrup recording micromax potentiometer. At the same time the Marvin pyrheliometer in use at that station for measuring normal incidence radiation was checked against Smithsonian silver-disk pyrheliometer no. 1, which instrument had been checked against Smithsonian standards at the Smithsonian Astrophysical Observatory a few weeks before.

Polarization observations made at Washington on 3 days give a mean of 57 percent with a maximum of 61 percent on the 27th. At Madison, observations made on 3 days give a mean of 60 percent with a maximum of 70 percent on the 29th. All of these values are slightly below the corresponding normals for the month.

TABLE 2.—*Average daily totals of solar radiation (direct + diffuse) received on a horizontal surface*

Week beginning—	Washington	Madison	Lincoln	Chicago	New York	Fresno	Fairbanks	Twin Falls	La Jolla	Miami	New Orleans	Riverside	Blue Hill	San Juan	Friday Harbor	Ithaca
	Gram-calories per square centimeter															
1936	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*
Oct. 1	351	273	353	232	289	428	156	350	379	401	332	374	336	425	243	302
Oct. 8	250	173	316	204	181	426	71	318	333	322	381	410	254	460	242	232
Oct. 15	295	239	296	243	242	282	76	235	257	411	364	233	239	513	265	192
Oct. 22	274	276	335	151	205	371	27	262	318	386	296	366	223	477	158	205
	Departures from weekly normals															
Oct. 1	+15	−3	+16	−30	+6	−6	+47	−35	--------	−5	−18	−13	+2	--------	+17	+27
Oct. 8	−57	−69	+10	−24	−85	+21	−1	−45	--------	−46	+41	+47	−67	--------	+6	−57
Oct. 15	+12	+22	−4	+32	+28	−89	+13	−109	--------	+56	+46	−117	−57	--------	+70	−78
Oct. 22	+7	+71	+57	−28	+11	+3	−26	−35	--------	−12	+6	+24	−41	--------	−6	0
	Accumulated departures on—															
	+5,754	+2,569	+7,595	+10,416	+6,741	+4,592	+4,382	−2,674	--------	−7,868	--------	−434	−1,575	--------	+1,162	+987

TABLE 3.—*Total, I_m, and screened, I_y, I_r, solar radiation intensity measurements, obtained during October 1936 and determinations of the atmospheric turbidity factor, β, and water-vapor content, w=depth in millimeters, if precipitated.*

AMERICAN UNIVERSITY, WASHINGTON, D. C.

Date and hour angle	Solar altitude	Air mass	I_m	I_y	I_r	$\beta_{I_{yr}}$	$\frac{I_{w=o}}{1.94}$ (Percentage of solar constant)	$\frac{I_{w=o}-I_m}{1.94}$ (Percentage of solar constant)	w	Air-mass type
1936										
Oct. 2	° ′	*m*	*gr. cal.*	*gr. cal.*	*gr. cal.*				*mm*	
1:24 a. m.	43 15	1.46	1.182	0.838	0.658	0.061	77.5	15.9	40.0	N_{PC}; S Aloft.
1:20 a. m.	43 37	1.45	1.186	.838	.658	.062	77.6	15.8	40.0	
Oct. 12										
0:28 a. m.	43 09	1.46	1.283	.912	.730	.065	76.8	11.0	15.5	N_{PC}.
0:12 a. m.	43 31	1.45	1.304	.915	.732	.066	77.0	10.1	10.1	
Oct. 21										
2:28 a. m.	29 31	2.02	1.262	.923	.730	.023	80.3	15.7	38.0	$N_P \rightarrow T_M$; S Aloft.
2:20 a. m.	30 34	1.96	1.283	.926	.733	.025	79.6	14.0	33.0	

Atmospheric conditions during turbidity measurements

Oct. 2. Temperature 22° C.; wind, NE 8; visibility, 12 miles.
Oct. 12. Temperature 21° C.; wind, NW 12; visibility, 30 miles.
Oct. 21. Temperature 23° C.; wind, S 8; visibility, 20 miles. Polarization, 53 percent.

BLUE HILL OBSERVATORY OF HARVARD UNIVERSITY

Date and hour angle	Solar altitude	Air mass	I_m	I_y	I_r	$\frac{I_y}{0.851-c}$	$\frac{I_r}{0.840-c}$	β	$\frac{I_{w=o}}{1.94}$	$\frac{I_{w=o}-I_m}{1.94}$	w
1936											
Oct. 2	° ′	*m*	*gr. cal.*	*gr. cal.*	*gr. cal.*						*mm*
3:52 a. m.	20 24	2.85	0.965	0.683	0.575	0.801	0.683	0.110	54.2	5.6	4.0
1:10 a. m.	41 26	1.51	1.085	.740	.600	.868	.713	.141	67.4	11.4	9.3
Oct. 3											
3:57 a. m.	18 48	3.10	1.171	.819	.677	.960	.804	.167	63.8	3.4	1.2
2:45 a. m.	30 05	1.99	1.303	.877	.716	1.028	.850	.071	70.6	3.4	1.2
0:39 a. m.	42 38	1.48	1.411	.918	.762	1.077	.905	.078	75.4	2.7	2.2
0:07 p. m.	43 37	1.45	1.362	.918	.724	1.074	.918	.075	76.8	6.1	5.1
2:16 p. m.	34 23	1.77	1.319	.884	.723	1.021	.850	.081	72.0	4.0	3.0
Oct. 4											
3:19 a. m.	25 08	2.35	1.191	.822	.625	.966	.803	.071	67.7	6.3	4.5
2:37 a. m.	30 54	1.94	1.220	.820	.673	--------	--------	--------	--------	--------	--------
2:47 p. m.	39 48	1.95	1.259	.780	.634	.915	.753	.074	69.5	5.6	4.6
3:34 p. m.	23 22	2.56	1.083	.743	.610	.872	.727	.057	68.2	12.4	7.8
Oct. 5											
3:52 a. m.	19 31	2.98	.887	.624	.531	.732	.631	.119	52.4	6.7	3.9
2:34 a. m.	31 08	1.93	1.163	.741	.608	.869	.721	.098	65.8	6.9	5.0
Oct. 6											
4:04 a. m.	18 42	3.10	1.142	.804	.667	.943	.792	.063	61.8	2.9	1.7
Oct. 8											
4:27 a. m.	22 44	2.64	.804	.599	.511	.702	.606	.121	64.2	3.7	1.9
1:04 p. m.	39 38	1.57	1.175	.818	.680	.959	.808	.150	63.3	2.8	2.3
3:03 p. m.	26 14	2.26	1.116	.782	.633	.918	.752	.071	68.7	9.9	6.6
4:09 p. m.	15 54	3.61	.809	.619	.506	.725	.601	.085	52.8	11.2	5.9
Oct. 9											
3:10 a. m.	24 59	2.45	.790	.578	.509	.699	.602	.175	47.7	7.1	4.6
0:57 p. m.	46 00	1.55	1.164	.810	.670	.940	.705	.151	65.7	5.8	2.2

TABLE 3.—*Total, I_m, and screened, I_y, I_r, solar radiation intensity measurements, obtained during October 1936 and determinations of the atmospheric turbidity factor, β, and water-vapor content, w=depth in millimeters, if precipitated*—Continued

BLUE HILL OBSERVATORY OF HARVARD UNIVERSITY—Continued

Date and hour angle	Solar altitude	Air mass	I_m	I_y	I_r	$\frac{I_y}{0.851-c}$	$\frac{I_r}{0.840-c}$	β	$\frac{I_{w=o}}{1.94}$	$\frac{I_{w=o}-I_m}{1.94}$	w
1936											
Oct. 12	° ′	m	gr. cal.	gr. cal.	gr. cal.						mm
2:37 a. m.	28 53	2.06	1.184	0.802	0.671	0.936	0.798	0.118	63.8	2.9	2.0
1:21 a. m.	36 15	1.69	1.216	.800	.647	.938	.783	.100	68.5	6.7	5.2
2:23 p. m.	30 32	1.96	1.360	.906	.727	1.060	.862	.044	75.0	5.6	4.0
4:24 p. m.	12 10	4.64	1.082	.749	.632	.877	.751				
Oct. 13											
4:06 a. m.	14 55	3.84	1.058	.760	.637	.888	.753	.055	58.7	4.4	2.3
1:52 a. m.	33 43	1.80	1.264	.820	.660	.958	.781	.089	68.8	3.9	3.0
Oct. 18											
3:34 a. m.	18 47	3.08	1.100	.759	.632	.890	.757	.073	59.7	3.0	1.7
Oct. 19											
3:00 a. m.	23 44	2.48	1.186	.811	.666	.951	.791	.070	65.2	5.1	3.3
Oct. 20											
2:59 a. m.	23 18	2.52	.806	.568	.488	.664	.577	.179	60.6	9.2	5.9
0:20 p. m.	37 08	1.65	1.082	.715	.593	.833	.700	.148	61.0	5.4	3.9
3:36 p. m.	18 04	3.19	.750	.541	.444	.633	.526	.167	51.5	13.0	7.6
Oct. 21											
2:42 a. m.	25 14	2.34	1.275	.831	.678	.973	.804	.076	76.9	11.2	7.4
Oct. 22											
2:53 a. m.	23 40	2.48	.995	.686	.557	.802	.661	.094	60.6	8.5	5.4
Oct. 24											
4:02 p. m.	12 24	4.57	.839	.611	.508	.712	.600	.062	54.0	11.0	5.3
Oct. 25											
3:08 a. m.	20 34	2.82	1.092	.762	.624	.887	.735	.064	62.1	6.8	4.1
0:24 a. m.	35 30	1.72	1.092	.745	.601	.867	.708	.063	64.0	8.5	6.5
Oct. 27											
3:08 a. m.	20 04	2.89	1.273	.863	.711	1.002	.836	.050	74.2	8.9	5.3
0:17 a. m.	34 33	1.76	1.358	.908	.735	1.104	.867	.004	74.2	4.6	3.5
3:49 p. m.	22 45	2.58	1.308	.890	.712	1.036	.838	.024	76.0	7.4	4.7
Oct. 28											
3:08 a. m.	19 43	2.95	1.269	.869	.699	1.011	.822	.025	81.3	10.6	6.2
0:18 a. m.	34 25	1.77	1.378	.906	.730	1.051	.859	.017	73.7	3.0	2.3
2:58 p. m.	21 04	2.76	1.119	.772	.625	899	.737	.057	65.6	8.3	5.1
Oct. 29											
2:09 a. m.	27 05	2.19	1.070	.723	.587	.841	.691	.082	64.8	10.0	6.8
0:13 p. m.	42 09	1.80	1.081	.727	.590	.846	.696	.150	64.3	8.9	6.7
2:55 p. m.	21 21	2.74	.672	.479	.405	.578	.477	.140	46.3	11.9	7.3
Oct. 30											
2:09 a. m.	26 33	2.24	1.112	.740	.600	.859	.707	.094	63.0	6.1	4.1
2:58 p. m.	20 35	2.82	1.164	.782	.660	.910	.778	.087	59.5	6.1	3.7
Oct. 31											
3:54 a. m.	12 08	4.68	1.044	.747	.620	.868	.729	.033			
2:50 a. m.	21 22	2.72	1.261	.845	.677	.981	.797	.038	71.0	11.6	7.1
0:13 p. m.	33 29	1.81	1.358	.881	.698	1.026	.824	.046	75.9	10.3	7.7

Air-mass types for above table

Oct. 2. N_{PC}
3. N_{PC}
4. P_C
5. N_{PC}
6. $N_{PC} \rightarrow T_M$
8. N_P

Oct. 9. N_P
12. N_P
13. P_C
18. P_C
19. N_{PC}

Oct. 20. N_{PC}+S
21. T_M+S
22. T_M
24. N_{PC}; T_M aloft
25. N_{PC}

Oct. 27. P_C
28. N_{PC}
29. N_P
30. P_C+P_P
31. N_P

TABLE 3.—*Total, I_m, and screened, I_y, I_r, solar radiation intensity measurements, obtained during September 1936, and determinations of the atmospheric turbidity factor, β, and water-vapor content, w=depth in millimeters, if precipitated, Blue Hill, Mass.*

Date and hour angle	Solar altitude	Air mass	I_m	I_y	I_r	β_{I_y-r}	$\frac{I_{w=o}}{1.94}$ (Percentage of solar constant)	$\frac{I_{w=o}-I_m}{1.94}$ (Percentage of solar constant)	w	Air-mass type
1936, Sept. 1	° ′	m	gr. cal.	gr. cal.	gr. cal.				mm	
4:38 a. m.	20 41	2.77	1.067	0.757	0.629	0.075	61.9	5.9	3.6	N_{PC}
3:19 a. m.	34 48	1.75	1.214	.826	.675	.091	69.9	6.2	4.7	
2:52 a. m.	39 39	1.57	1.247	.848	.685	.083	72.3	6.9	5.5	
5:30 p. m.	11 56	4.95	.673	.504	.435					
Sept. 3										
4:26 a. m.	22 45	2.58	.892	.640	.528	.112	56.1	9.3	5.8	$N_P \rightarrow T_M$
Sept. 4										
0:40 p. m.	54 01	1.24	1.269	.837	.684	.109	73.6	7.1	6.5	N_{PC}
2:58 p. m.	37 43	1.63	1.179	.786	.645	.130	64.9	3.1	2.4	
3:15 p. m.	34 51	1.78	1.159	.776	.641	.125	65.7	5.0	3.8	
Sept. 6										
4:40 a. m.	19 15	3.02	1.017	.718	.599	.079	59.2	5.9	2.8	N_{PC}
4:14 a. m.	23 58	2.46	1.101	.755	.621	.077	64.0	6.7	4.1	
3:33 a. m.	36 33	1.91	1.179	.787	.647	.087	67.0	5.5	4.0	
0:00 noon	54 23	1.23	1.261	.822	.664	.149	69.0	2.9	2.6	

TABLE 3.—*Total, I_m, and screened, I_y, I_r, solar radiation intensity measurements, obtained during September 1936, and determinations of the atmospheric turbidity factor, β, and water-vapor content, w=depth in millimeters, if precipitated, Blue Hill, Mass.*—Continued

Date and hour angle	Solar altitude	Air mass	I_m	I_y	I_r	$\beta_{I_{y-r}}$	$\frac{I_{w=o}}{1.94}$ (Percentage of solar constant)	$\frac{I_{w=o}-I_w}{1.94}$ (Percentage of solar constant)	w	Air-mass type
	° ′	m	gr. cal.	gr. cal.	gr. cal.				mm	
Sept. 7										
4:33 p. m.	20 14	2.88	0.586	0.432	0.374					T_M
Sept. 8										
1:30 a. m.	48 34	1.33	1.045	.709	.578	.164	65.5	10.9	9.6	T_M
0:44 a. m.	52 34	1.26	1.069	.715	.582	.175	63.2	7.6	6.8	
Sept. 9										
4:13 a. m.	23 30	2.50	.741	.550	.471	.203				$N_P \longrightarrow T_M$
3:01 a. m.	35 41	1.74	.997	.669	.563	.202	69.8	8.5	5.0	
2:33 a. m.	47 50	1.34	1.043	.701	.576	.205	59.8	5.5	4.8	
0:05 p. m.	53 16	1.25	1.217	.795	.635	.150	68.5	5.1	4.6	
0:28 p. m.	52 45	1.26	1.236	.816	.653	.100	74.6	10.2	9.2	
Sept. 11										
2:52 p. m.	36 31	1.68	1.137	.761	.644	.184	64.2	4.8	3.8	N_{PC}
3:02 p. m.	35 00	1.74	1.123	.741	.622	.175	64.2	5.5	4.2	
3:36 p. m.	29 16	2.04	1.071	.741	.612	.133	61.7	5.8	4.1	
Sept. 14										
4:23 a. m.	20 11	2.86	1.110	.772	.642	.075	61.0	3.2	1.9	N_{PA}
4:05 a. m.	23 32	2.50	1.150	.792	.646	.066	63.9	4.0	2.5	
Sept. 16										
1:26 p. m.	45 59	1.39	1.635	.695	.555	.162	63.0	9.1	7.8	N_{PA}:T_M Aloft.
4:01 p. m.	23 34	2.49	.735	.544	.462					
Sept. 17										
4:38 a. m.	16 05	3.57	.445	.351	.323					N_{PA}:T_M Aloft.
4:13 a. m.	21 00	2.77	.682	.379	.360					
Sept. 19										
0:51 p. m.	47 49	1.35	1.372	.891	.711	.070	77.5	6.0	5.2	N_{PA}:T_M Aloft.
4:29 p. m.	17 48	3.24	1.049	.739	.602	.050	63.9	9.4	5.3	
5:19 p. m.	9 24	5.95	.790	.589	.494					
5:35 p. m.			.673	.511	.454					
Sept. 22										
2:43 p. m.	34 36	1.76	1.017	.672	.547	.156	58.8	5.5	3.3	N_{PC}.
3:16 p. m.	29 27	2.03	.899	.604	.509	.201	49.6	3.0	2.1	
Sept. 23										
0:13 p. m.	47 46	1.34	1.060	.699	.576					$N_P \rightarrow T_M$:S Aloft.
0:39 p. m.	46 57	1.37	1.124	.721	.592	.195	61.5	1.1	1.0	
1:31 p. m.	43 09	1.46	1.169	.761	.617	.158	64.4	4.3	3.6	
3:50 p. m.	23 31	2.50	1.001	.667	.547	.105	58.2	6.2	4.0	
Sept. 24										
1:00 a. m.	41 54	1.49	1.259	.811	.656	.114	69.0	3.8	3.1	$M_P \rightarrow T_M$: S Aloft.
0:10 a. m.	47 15	1.36	1.285	.832	.667	.106	70.3	4.3	3.7	
0:51 p. m.	45 57	1.39	1.308	.845	.775					
Sept. 25										
4:30 a. m.	16 15	3.55	1.159	.816	.671	.032	68.3	8.4	4.5	P_C: S Aloft.
4:10 a. m.	19 47	2.93	1.240	.848	.703	.051	69.3	5.2	3.1	
1:58 a. m.	40 34	1.53	1.435	.941	.762	.051	77.0	2.8	2.3	
0:21 p. m.	46 52	1.37	1.466	.941	.762	.076	79.0	3.2	2.8	
2:16 p. m.	37 19	1.65	1.388	.906	.743	.075	74.0	2.2	1.7	
Sept. 26										
4:32 a. m.	15 25	3.72	.980	.706	.588	.074	54.5	3.8	2.1	P_C
4:15 a. m.	17 58	3.06	1.098	.776	.627	.050	66.0	8.0	4.6	
0:00 noon	46 42	1.38	1.216	.809	.661	.140	67.4	4.3	3.7	
0:23 p. m.	46 24	1.38	1.243	.817	.673	.148	66.5	2.4	2.1	
3:12 p. m.	28 52	2.06	1.285	.855	.693	.050	73.2	6.8	4.8	
3:31 p. m.	25 44	2.30	1.205	.834	.679	.050	81.2	19.1	12.7	
Sept. 28										
0:13 p. m.	42 23	1.48	1.364	.878	.708	.059	79.0	8.4	7.0	N_{PC}.
Sept. 29										
3:51 a. m.	21 38	2.70	1.200	.816	.674	.037	69.7	7.6	4.7	
2:00 a. m.	37 02	1.66	1.340	.888	.725	.075	73.7	4.4	3.4	P_C: S Aloft.