SOLAR RADIATION AND SUNSPOT DATA FOR OCTOBER 1946

Explanations of the tables and references to descriptions of instruments, stations, and methods of observations and to summaries of data, are given in the MONTHLY WEATHER REVIEW, vol. 72, page 43, January 1944. A list of pyrheliometric stations is given on page 45 of the same REVIEW.

SOLAR RADIATION OBSERVATIONS

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

Date	Sun's zenith distance										
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	1:30 p. m.
	75th mer. time	Air mass									75th mer. time
		A. M.				*1.0	P. M.				
	e	5.0	4.0	3.0	2.0		2.0	3.0	4.0	5.0	e
LINCOLN, NEBR.											
	mb.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mb.*
Oct. 1	8.1					1.37	1.17	0.97	0.82	0.62	10.2
Oct. 2	8.1	0.75	0.85	0.98	1.17	1.35	1.08	.86	.67	.52	7.4
Oct. 8	9.4							1.05	.90	.75	13.7
Oct. 11	5.1	.96	1.09	1.20							5.3
Oct. 12	4.6	.62	.90	1.05	1.27						8.4
Oct. 14	6.9	.83	.92	1.05	1.22	1.44	1.25	1.08	.95	.84	10.2
Oct. 15	9.8				1.03	1.28					12.7
Oct. 19	8.7					1.44	1.22	1.07	.94	.83	8.1
Oct. 21	8.7				1.20	1.44	1.14	.95	.79	.69	14.6
Oct. 22	9.1		.96	1.09	1.24	1.41	1.23	1.06	.88	.75	12.3
Oct. 24	9.1					1.44	1.31	1.14	1.05	.96	7.2
Oct. 25	6.9		.96	1.05	1.24	1.45	1.23	1.10	.97	.86	11.8
Oct. 26	9.8	.81	.92	1.05	1.24	1.46	1.17	.97	.82		12.3
Oct. 28	16.4						1.10				18.3
Oct. 30	9.1	.92	1.03	1.11	1.29	1.47					9.8
Means		.82	.95	1.07	1.21	1.41	1.19	1.02	.88	.76	
Departures		+.02	+.03	.00	−.05	−.06	−.05	−.04	−.05	−.06	
BLUE HILL, MASS.											
Oct. 1	6.9	0.98	1.08								8.6
Oct. 2	6.7	.93	1.03	1.15	1.31						6.6
Oct. 3	6.7	.97	1.05	1.17		1.49	1.26	1.07	0.93	0.84	7.0
Oct. 4	9.6	.90	1.02	1.14	1.26	1.40	1.13	1.00	.85	.73	9.4
Oct. 5	13.2	.77	.87	1.02	1.22		1.11	.87	.76	.67	14.7
Oct. 6	11.4	.92	1.00	1.14	1.24			.91	.76	.62	11.8
Oct. 7	11.3	.90	1.02	1.12	1.23	1.42	1.14	.92	.72	.62	11.0
Oct. 9	6.9						1.33	1.20	1.05		7.0
Oct. 11	11.8					1.49	1.25	1.10	.98	.87	13.0
Oct. 13	9.7			1.15	1.36	1.54	1.34	1.18	1.06	.97	7.2
Oct. 14	6.4	.98	1.04	1.11			1.25	1.06	.95	.81	7.1
Oct. 15	6.1	.73	.80	.93			.96	.79	.66	.57	7.7
Oct. 16	9.2	.63	.74	.90	1.09						8.5
Oct. 17	12.7	.36		.53	.73			.59			12.8
Oct. 19	7.7	1.00	1.09	1.22	1.35	1.49	1.30		1.00	.87	6.2
Oct. 20	6.4	.70	.83								7.2
Oct. 21	7.4	.83	.92		1.19	1.60	1.21	1.00	.90	.78	6.9
Oct. 22	6.6	.79	.90	1.05	1.24		1.24	.83	.68	.62	6.4
Oct. 23	7.4	.83	.94	1.09	1.25		1.19	.95	.78	.61	7.3
Oct. 24	7.2	.50	.61	.75			.78				11.8
Oct. 25	13.8				.87		1.18	1.08	.88	.73	12.8
Oct. 27	17.0				1.16		1.18	1.02			17.3
Oct. 28	12.8	.42	.54								11.6
Oct. 31	14.7	.58	.69	.82							15.4
Means		.77	.90	1.02	1.18	1.49	1.18	.97	.86	.74	
Departures		−.09	−.06	−.06	−.05	+.09	−.03	−.06	−.06	−.05	
BOSTON, MASS.											
Oct. 3	7.2				1.20		1.24	0.98	0.72	0.71	7.2
Oct. 4	9.8	0.71	0.71	0.87	.85		1.25	1.01	.64	.53	9.4
Oct. 11	10.6				1.30		1.30				13.7
Oct. 16	9.8				1.11						9.1
Oct. 22	7.2				1.33						8.1
Oct. 23	8.1			.99	1.02		.95	.68	.54	.42	9.4
Oct. 24	8.1				.44						11.0
Means		(.71)	(.71)	(.93)	1.04		1.18	.89	.63	.55	
Departures		+.06	.00	+.11	−.01		+.05	−.01	−.08	−.05	

SOLAR RADIATION OBSERVATIONS

Date	Sun's zenith distance										
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	1:30 p. m.
	75th mer. time	Air mass									75th mer. time
		A. M.				*1.10	P. M.				
	e	5.0	4.0	3.0	2.0		2.0	3.0	4.0	5.0	e
RATIO, BOSTON/BLUE HILL, ON COMPARABLE DATES											
		(.79)	(.70)	(.84)	.89		.98	.88	.74	.75	
CLIMAX, COLO.											
	mb.	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mb.*
Oct. 1				1.30	1.41						
Oct. 2				1.34	1.45						
Oct. 3				1.36	1.52						
Oct. 5					1.52		1.48	1.30	1.12	0.96	
Oct. 6					1.50		1.46	1.25			
Oct. 7				1.30			1.28				
Oct. 8				1.36	1.48						
Oct. 9							1.24	1.17			
Oct. 13				1.42	1.49		1.44	1.34	1.26		
Oct. 14				1.41	1.52		1.54	1.42	1.31		
Oct. 15				1.24	1.41		1.40	1.23	1.16		
Oct. 16				1.38	1.52		1.50	1.38			
Oct. 19				1.46	1.58		1.55	1.38			
Oct. 20				1.42	1.51		1.49	1.40			
Oct. 21				1.38	1.52		1.50	1.38	1.26	1.17	
Oct. 22				1.41	1.52		1.45	1.31	1.23	1.13	
Oct. 23				1.39	1.51		1.49	1.36	1.23	1.14	
Oct. 25					1.52		1.52	1.41	1.30	1.22	
Oct. 26					1.56		1.46				
Oct. 28				1.40	1.52		1.48				
Oct. 30				1.40	1.50		1.53	1.37	1.18	1.14	
Oct. 31				1.42	1.56		1.49				
Means				1.38	1.51		1.46	1.34	1.23	1.13	
TABLE MOUNTAIN, CALIF.											
Oct. 2		1.22	1.30	1.39	1.50	1.63					
Oct. 3					1.48						
Oct. 5					1.44						
Oct. 6					1.43						
Oct. 7					1.44						
Oct. 9					1.47						
Oct. 11					1.46						
Oct. 12					1.46						
Oct. 13					1.47						
Oct. 14					1.40						
Oct. 15					1.46						
Oct. 18					1.49						
Oct. 20					1.47						
Oct. 21					1.49						
Oct. 22		1.11	1.20	1.30	1.43	1.58					
Oct. 23					1.44						
Oct. 29					1.48						
Oct. 30					1.54						
Oct. 31					1.51						
Means		(1.16)	(1.25)	(1.34)	1.47	(1.60)					

*Extrapolated.

TABLE 2.—*Daily totals and weekly means of solar radiation (direct+diffuse) received on a horizontal surface*

[Gram calories per square centimeter]

Date	Washington, D. C.	Lincoln, Nebr.	East Lansing, Mich.	New York, N. Y.	Fresno, Calif.	Fairbanks, Alaska	Columbia, Mo.	Boston, Mass.	Nashville, Tenn.	Twin Falls, Idaho	La Jolla, Calif.	Riverside, Calif.	Blue Hill, Mass.	Newport, R. I.	State College, Pa.	Put-in-Bay, Ohio	Davis, Calif.	Tooele, Utah	New Orleans, La.	Toronto, Canada	Boulder, Colo.	Soda Springs, Calif.
1946	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*
Oct. 1	435	449	401	256	428	214	504	273	509	45	------	89	298	207	366	498	414	254	518	179	420	116
Oct. 2	498	472	371	195	522	170	511	186	485	382	470	474	216	254	444	449	426	507	442	420	325	397
Oct. 3	450	317	350	411	332	222	504	352	455	255	394	349	446	423	392	424	351	426	456	367	276	334
Oct. 4	409	196	352	320	472	187	465	326	457	364	456	487	409	414	316	419	487	302	353	323	126	497
Oct. 5	418	171	338	334	482	68	477	313	450	114	220	382	404	414	404	398	500	334	327	271	241	458
Oct. 6	422	70	342	391	479	111	436	315	380	143	456	487	396	411	401	402	467	88	494	299	47	476
Oct. 7	402	214	318	295	472	149	440	299	381	165	455	456	405	381	400	399	407	405	406	329	152	344
Means	433	270	353	314	455	160	477	295	445	210	409	389	368	358	389	427	436	331	428	313	227	375
Departures	+107	−60	+88	+15	+30	+45	+132	+42	+112	−150	+22	−2	+62	+66	+123	+93	+32	−70	+47	+65	−107	------
Oct. 8	250	249	256	102	473	102	390	217	272	165	280	460	293	319	350	248	463	96	470	236	352	513
Oct. 9	42	212	341	193	462	47	222	297	355	375	434	470	388	314	94	247	455	480	441	100	430	480
Oct. 10	55	53	274	193	449	66	231	167	310	372	437	444	233	142	98	367	452	458	450	202	220	------
Oct. 11	214	276	72	206	454	73	282	322	39	388	424	458	397	376	115	122	445	475	303	190	422	468
Oct. 12	208	310	178	98	435	65	474	129	418	381	440	444	175	184	56	146	426	472	446	34	444	437
Oct. 13	443	120	209	402	432	116	445	331	437	372	------	432	400	403	416	390	389	464	478	291	392	456
Oct. 14	407	424	156	352	425	34	450	321	407	198	420	404	384	389	370	182	414	454	450	119	339	436
Means	231	235	212	221	447	72	356	255	230	321	406	445	324	304	214	243	435	414	434	167	371	465
Departures	−77	−71	−21	−66	+51	−17	+7	+27	+31	−20	+16	+64	+13	−5	−47	−22	+65	+47	+53	−37	+43	------
Oct. 15	397	282	296	320	368	99	389	247	411	193	321	420	330	349	375	352	243	431	450	254	326	348
Oct. 16	395	67	153	272	409	100	122	257	428	67	394	408	310	297	344	221	386	75	388	193	299	350
Oct. 17	297	29	27	217	402	55	37	175	244	145	426	441	307	296	196	30	297	170	405	28	66	195
Oct. 18	164	365	56	73	410	58	420	4	374	220	417	417	56	106	110	44	411	384	343	34	258	430
Oct. 19	405	386	232	365	428	40	42	307	241	362	279	352	389	377	366	349	401	411	326	293	405	------
Oct. 20	39	400	216	150	418	85	343	260	277	287	335	379	288	257	57	252	374	425	374	219	------	346
Oct. 21	202	381	284	305	378	32	225	286	328	218	316	403	359	351	129	338	237	370	413	218	386	315
Means	271	273	181	243	402	67	226	219	329	213	355	403	291	290	225	226	336	324	386	177	290	331
Departures	−13	−19	−25	−23	+38	−4	−100	+10	+32	−96	+14	+57	−90	+7	−4	−8	−9	−14	+27	−18	−33	------
Oct. 22	326	392	255	258	335	22	344	254	347	59	335	388	345	337	175	314	140	308	425	208	372	89
Oct. 23	356	111	218	211	315	67	347	224	115	260	365	363	338	322	223	265	397	218	350	136	396	403
Oct. 24	328	349	224	229	400	90	110	143	149	88	362	402	281	270	291	305	379	310	346	200	313	391
Oct. 25	266	371	132	273	381	36	402	218	67	314	305	380	302	286	241	52	368	402	271	24	304	390
Oct. 26	311	360	275	54	376	47	393	89	373	300	243	371	143	178	276	341	191	340	376	245	299	216
Oct. 27	317	242	248	122	138	42	335	184	341	119	63	86	300	257	313	320	306	95	318	228	------	265
Oct. 28	148	218	204	163	335	11	215	149	317	286	102	60	136	192	84	261	382	81	273	176	276	------
Means	293	292	222	187	326	45	307	180	244	204	253	293	264	263	229	265	309	250	337	174	327	292
Departures	+36	+14	+35	−39	−20	−14	+5	−7	+10	−71	−57	−32	+52	+42	+33	+45	−17	−52	+1	−18	+23	------

ACCUMULATED DEPARTURES ON OCT. 28, 1946

+4,438	−2,688	+3,157	−9,758	+5,726	------	------	+763	+1,428	−5,292	------	+770	−2,219	−2,618	+5,593	------	+11,669	−1,561	------	------	+1,610	------

ADDITIONAL DATA FOR FAIRBANKS, ALASKA, SEPTEMBER 1946

Week beginning—	Means	Departures
Sept. 3	139	−68
Sept. 10	158	−40
Sept. 17	179	+15
Sept. 24	216	+80