SOLAR RADIATION AND SUNSPOT DATA FOR JULY 1945

[Solar Radiation Investigation Section, I. F. HAND, in charge]

SOLAR RADIATION OBSERVATIONS

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

TABLE 1.—*Solar radiation intensities during July 1945*

[GRAM CALORIES PER MINUTE PER SQUARE CENTIMETER OF NORMAL SURFACE]

MADISON, WIS.

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.
1945	*mb.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mb.*
July 3	12.7	0.79	0.88	1.01	1.16	1.32					13.7
July 6	14.8	.71	.81	.94	1.10	1.32					14.2
July 7	13.7	.74	.86								15.8
July 10	10.6	.76	.87	1.01	1.15	1.36					9.8
July 11	11.0	.83	.94	1.07	1.19	1.35					10.6
July 14	14.2										11.8
July 18	13.7				1.03	1.24					14.2
July 19	13.2	.44	.50	.64	.87	1.16					14.2
July 23	21.8		.32	.48	.68						23.4
July 24	25.0	.47	.55	.57	.69						24.2
July 25	18.3	.69	.80	.94	1.11						19.0
July 26	14.8	.60	.69	.80	1.02	1.27					14.8
July 27	14.2	.57	.68	.81							19.0
July 28	15.8	.64	.71	.83	.99						19.0
July 31	21.8	.35	.44	.59	.79	1.00					25.9
Means		.63	.70	.81	.98	1.25					
Departures		−.01	−.04	−.06	−.07	−.04					

LINCOLN, NEBR.

July 3	16.9						1.08	0.88			15.3
July 4	18.3						.97				22.6
Means							(1.02)	(.88)			
Departures							−.05	−.01			

ALBUQUERQUE, N. MEX.

July 3	9.8	0.65	0.73	0.88	1.04	1.36					9.8
July 4	8.5			.86	1.03						6.8
July 5	6.8	.67	.78	.91	1.06	1.36					7.9
July 6	6.8					1.28	0.78				8.2
July 7	8.8			.78	.94		1.06				9.5

TABLE 1.—*Solar radiation intensities during July 1945*—Continued

ALBUQUERQUE, N. MEX.—Continued

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.
1945	*mb.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mb.*
July 8	7.3			0.88	1.01						8.5
July 9	9.5					1.41					8.5
July 10	9.5	0.67	0.75	.88	1.00						9.8
July 11	10.6	.49	.57	.74	.93	1.28	0.69				11.0
July 12	9.8	.53	.61	.75	.96	1.51	1.00				11.4
July 14	10.2		.65	.77	1.01						8.5
July 15	9.4						1.14				10.2
July 16	9.5					1.21					8.8
July 17	10.2		.56	.71	.91	1.22					9.1
July 18	13.6				1.00	1.30		0.58			12.2
July 19	9.1	.58	.67	.78	.95		.66				10.2
July 20	7.9	.59	.67		.95						12.2
July 21	7.3			.71	.86	1.26					8.2
July 22	9.8	.60	.69	.80	.94						8.8
July 23	7.0	.50	.58	.73	.92	1.65					9.5
July 24	8.8	.54	.65	.74	.91	1.54					9.5
July 25	9.8	.47	.63								10.6
July 27	13.1	.68	.77	.90	1.02						13.6
July 29	11.4	.69	.80	.90	1.08						11.4
July 30	11.8	.67	.78	.89		1.47					10.6
July 31	11.4	.70	.81	.92	1.08	1.43		.93			
Means		.60	.69	.82	.98	1.38	.89	(.76)			
Departures		−.14	−.13	−.12	−.12	−.02	−.27	−.28			

BOSTON, MASS.

July 7	14.8	0.66	0.72	0.91	1.04						14.2
July 25	19.6			.44	.57						21.8
Means		(.66)	(.72)	(.68)	(.80)						

BLUE HILL, MASS.

July 1	17.8			0.89	1.07						20.0
July 3	15.9				1.16		1.18	0.98	0.86	0.75	14.6
July 11	12.5		0.82	.97	1.10		1.25	1.11	1.00	.90	11.7
July 12	10.8	0.93	1.03	1.15	1.26			.95	.82	.69	11.9
July 13	14.8						.80	.58	.41		15.5
July 21	24.2							.48	.33		20.8
July 23	18.4							.49		.27	19.2
July 24	17.7								.53	.44	20.7
July 30	20.2	.57					1.11	.97	.85		18.0
July 31	18.9								.69	.58	17.5
Means		(.75)	(.92)	1.00	1.15		1.08	.79	.69	.60	
Departures		+.14	+.22	+.14	+.11		+.07	−.03	−.01	−.04	

*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.	Madison, Wis.	Lincoln, Nebr.	E. 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.	Ithaca, N. Y.	Newport, R. I.	State College, Pa.	Put-in-Bay, Ohio	East Wareham, Mass.	Davis, Calif.	Boulder, Colo.	Tooele, Utah	New Orleans, La.
1945	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*
July 2	545	498	702	257	286	685	432	765	248	363	706	152	570	350	172	422	167	553	356	779	880	880	415
July 3	714	795	680	584	666	702	483	728	574	689	696	200	664	630	730	634	748	736	595	785	606	842	296
July 4	604	357	712	506	594	711	625	571	521	444	693	306	630	644	650	667	599	723	699	775	622	886	439
July 5	389	582	711	437	382	694	584	693	510	455	721	630	648	611	544	647	415	556	682	774	669	872	305
July 6	571	728	515	564	375	698	551	761	329	558	700	507	624	388	651	397	594	719	424	766	752	882	553
July 7	695	762	684	552	546	585	537	545	560	666	703	418	638	706	700	684	667	692	744	759	460	705	395
July 8	691	679	657	576	591	242	580	192	506	606	658	584	612	550	719	610	586	642	669	595	556	610	355
Means	602	629	666	497	491	617	542	608	464	540	697	400	627	554	595	580	539	660	596	748	649	811	394
Departures	+89	+80	+75	+19	−16	−78	+60	+15	−13	+32	+86	−157	+19	+1	+23	+20	+12	+82	+82	−16	+91	------	−32
July 9	424	544	629	335	521	676	512	460	471	595	615	629	669	566	523	546	418	513	572	218	566	635	324
July 10	495	698	544	556	365	702	445	710	275	440	412	592	662	370	465	326	550	744	300	692	364	526	412
July 11	723	743	446	562	742	684	458	747	694	700	574	639	673	754	736	645	806	761	708	722	498	800	422
July 12	557	399	648	350	603	688	505	569	623	605	646	374	686	673	765	726	752	699	755	762	571	785	369
July 13	653	635	499	401	629	716	268	453	587	347	612	303	672	660	647	669	618	353	704	772	533	802	489
July 14	207	659	521	103	298	724	370	509	214	259	383	249	679	289	435	339	462	140	265	776	622	390	349
July 15	154	779	713	218	127	704	483	791	289	689	669	506	666	244	323	448	400	89	365	734	582	755	415
Means	459	637	571	361	469	699	434	606	450	519	559	470	672	508	556	528	572	471	524	668	534	728	397
Departures	−41	+87	−17	−101	−23	+11	−51	+10	−28	+17	−56	−127	+86	−6	+23	+2	+35	−80	+17	−74	+5	------	−28
July 16	495	676	350	621	285	685	208	707	246	648	642	347	603	306	180	302	437	767	299	725	590	826	551
July 17	85	333	542	547	156	684	465	436	186	715	611	346	574	191	408	349	144	648	408	750	671	812	600
July 18	285	717	516	602	160	714	488	687	331	586	558	611	620	315	463	473	374	558	460	778	470	486	116
July 19	264	697	625	515	163	695	355	706	376	468	515	306	405	487	384	411	546	657	623	762	362	769	296
July 20	519	322	377	497	423	690	647	728	342	457	391	597	634	340	594	294	367	604	349	752	435	765	167
July 21	454	437	571	136	623	692	342	638	583	605	647	600	622	630	705	412	628	436	526	764	446	792	256
July 22	390	736	629	461	188	703	332	526	368	433	657	603	620	527	204	483	252	554	617	748	472	822	510
Means	356	560	516	483	286	695	405	633	347	559	574	487	583	400	420	389	392	603	469	754	492	752	357
Departures	−127	+26	−58	+7	−182	+13	−25	+43	−82	+53	−43	−77	+6	−92	−106	−98	−120	+57	−12	+21	−18	------	−63
July 23	228	651	596	567	94	716	303	607	407	616	648	522	639	432	462	517	316	634	470	740	535	576	486
July 24	427	657	626	567	473	724	227	615	414	514	647	435	629	574	588	469	382	619	519	736	432	836	524
July 25	477	575	162	449	342	690	395	384	484	147	654	478	540	520	435	546	390	590	619	731	578	810	130
July 26	494	743	544	596	248	672	537	468	242	458	656	536	620	336	553	358	462	696	327	730	533	793	99
July 27	382	663	550	602	275	628	395	288	531	480	656	536	609	517	756	570	387	667	627	730	393	794	177
July 28	425	431	570	176	56	675	430	729	436	164	216	580	617	426	149	255	75	282	233	739	615	655	480
July 29	212	518	645	561	156	679	77	662	125	444	638	590	597	149	------	119	474	620	194	730	390	656	499
Means	378	605	528	502	235	683	338	536	377	403	588	525	607	422	491	405	355	587	427	734	496	731	342
Departures	−108	+90	−21	+28	−209	+23	−72	−10	−21	−65	+12	+17	+59	−29	+8	−71	−127	+49	−35	+9	−34	------	−74

ACCUMULATED DEPARTURES ON JULY 29, 1945

+1,925	+5,908	−5,166	−3,661	−6,209	+784	−1,988	------	−2,765	−4,060	−7,994	−11,998	+5,460	−5,467	−3,325	−6,440	+2,884	+1,043	−623	−357	------	------	------