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C. FITZHUGH TALMAN, *in Charge of Library*

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SOLAR OBSERVATIONS

SOLAR RADIATION MEASUREMENTS DURING DECEMBER 1935

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 slightly below normal at Washington for December, and above normal at both Madison and Lincoln.

Table 2 shows an excess in the amount of total solar and sky radiation at New York, Fresno, Fairbanks, Twin Falls, and Miami. All other stations were below normal for the month.

Table 3 shows relatively low water-vapor content for the 2 days on which turbidity measurements were obtained.

Polarization measurements obtained on 3 days at Washington give a mean of 57 percent, with a maximum of 63 percent on the 4th. Both of these values are close to the December normals. At Madison, only one polarization was obtained owing to snow and ice cover after the 4th. This gave a value of 61 percent, which is lower than either the maximum or mean normals for the month.

For the year, Washington, Madison, and Riverside received less radiation from the sun and sky on a horizontal surface than normal; New Orleans was normal, while all the other stations received more radiation than their yearly normals.

TABLE 1.—*Solar radiation intensities during December 1935*

[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	* 1.0	2.0	3.0	4.0	5.0	e
1935	*mm*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*mm*
Dec. 4	1.96	0.92	1.22	1.31	1.43	------	------	1.27	1.10	1.00	1.24
Dec. 5	2.06	------	------	------	1.33	------	1.20	.97	.86	.70	2.49
Dec. 6	2.87	------	------	------	------	------	1.22	1.10	.93	.70	2.74
Dec. 9	8.48	------	.87	1.03	1.33	------	------	------	------	------	6.27
Dec. 21	.96	.57	.73	.97	1.24	------	------	------	------	------	1.02
Dec. 26	.81	------	------	.53	.95	------	1.27	1.12	------	------	1.19
Dec. 31	2.06	.46	.53	.74	.84	------	------	------	------	------	2.16
Means	------	65	.84	.92	1.19	------	1.23	1.06	(.90)	(.76)	------
Departures	------	−.14	−.07	−.13	−.04	------	+.06	+.02	−.01	−.03	------

MADISON, WIS.

Dec. 2	1.52	------	------	------	------	------	------	1.20	------	------	1.88
Dec. 4	1.52	1.02	1.13	1.28	------	------	------	------	------	------	2.06
Dec. 20	.21	------	------	------	------	------	------	1.36	------	------	.79
Dec. 26	.56	------	------	------	------	------	------	1.30	------	------	.48
Means	------	(1.02)	(1.13)	(1.28)	------	------	------	1.29	------	------	------
Departures	------	+.06	+.03	+.06	------	------	------	+.05	------	------	------

* Extrapolated.