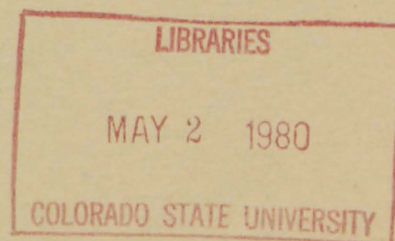


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FORT COLLINS SOLAR RADIATION DATA

MAY 1975 THROUGH DECEMBER 1977

S. K. COX
T. B. McKEE



CLIMATOLOGY REPORT 78-1



DEPARTMENT OF ATMOSPHERIC SCIENCE
COLORADO STATE UNIVERSITY
FORT COLLINS, COLORADO

FORT COLLINS SOLAR RADIATION DATA
MAY 1975 THROUGH DECEMBER 1976

by

Stephen K. Cox and Thomas B. McKee

COLORADO CLIMATOLOGY OFFICE
Department of Atmospheric Science
Colorado State University
Fort Collins, Colorado

August, 1978

Climatology Report No. 78-1

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I. INTRODUCTION

Solar radiation data have been collected at the Atmospheric Science Department at Colorado State University since the spring of 1975. This data collection site was established for research purposes and is not part of any ongoing solar radiation climatology network. In addition to the research applications in instrumentation performance, data collected at this site are of value in describing the solar radiation climate of the lee slope of the Colorado Rockies. The instruments are located on the roof of the three storey Atmospheric Science Department building. Photographs of the building and the instrument site are shown in Figure 1 and Figure 2 respectively. Photographs looking to the east and west of the instrument site are shown in Figure 3 and Figure 4. The site is at an elevation of 1609 meters (5279 feet) above sea level, with the city of Fort Collins lying to the east and foothills to the west. The western horizon is defined by foothills and averages 4 degrees elevation above the horizontal. The radiation data are affected by mountain wave clouds as are all locations along the Front Range.

This report is a compilation of the radiation data collected at the Atmospheric Science site for the spring of 1975 through the end of 1977.



Figure 1. Atmospheric Science Department, Colorado State University, Fort Collins, Colorado.

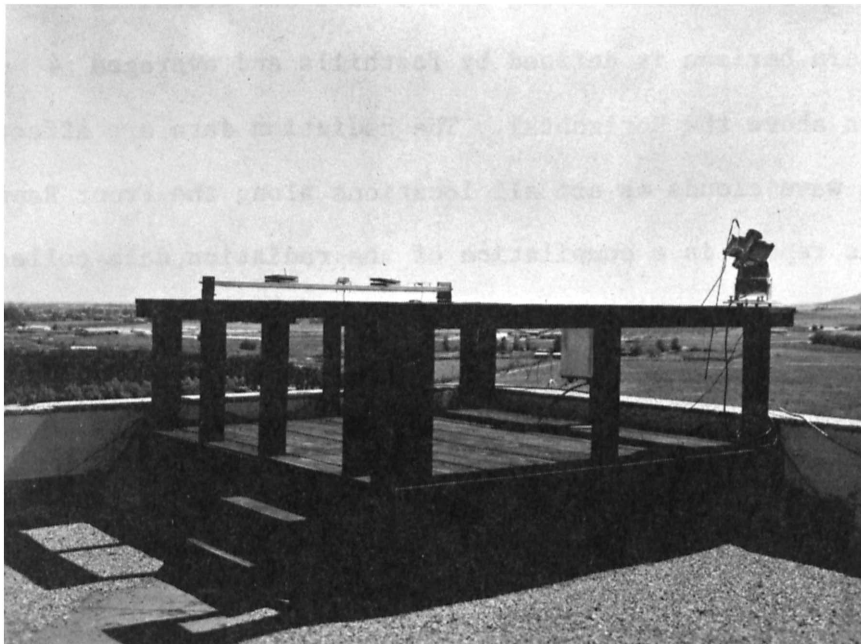


Figure 2. Instrument site.



Figure 3. Photograph looking to the east of the instrument site.



Figure 4. Photograph looking to the west of the instrument site.

II. SOLAR RADIATION MEASUREMENTS

Two instruments record incident solar radiation at the site. Total hemispheric solar irradiance is recorded by an Eppley Precision Pyranometer. Irradiance has the units of energy per unit time per unit area which are equivalent to power per unit area. The total hemispheric solar irradiance is a measure of the total power per unit area incident on a horizontal surface. Radiation is accepted from all angles in the upward hemisphere and for a wavelength range encompassing more than 97% of the solar radiation (i.e. $0.3\ \mu\text{m}$ to $3.0\ \mu\text{m}$). The second instrument, an Eppley Pyrheliometer measures the direct solar component in the same spectral interval. By means of an equatorial mount this instrument is pointed at, and tracks the sun. The instrument has an angular field of view of $5^{\circ}43'30''$. Since the sun subtends an angle of 0.5° , the instrument receives direct radiation from the sun and radiation scattered into a small angular field near the sun. The instruments were calibrated at the National Calibration Facility at NOAA-ERL in Boulder, Colorado and are recalibrated annually. Instrument maintenance consists of visual inspection daily, realignment as needed, and cleaning as needed. The data from both instruments are recorded as instantaneous values digitally on magnetic tape once per minute. The one minute values are then integrated to yield hourly, daily, and monthly values.

III. SOLAR RADIATION DATA

The radiation data are presented in three types of tables. Tables 2-31 contain the hourly total hemispheric irradiance data in megajoules per square meter per hour by month starting in May 1975. Data have been summed across the tables to obtain daily values in megajoules per square meter per day. Hourly and daily values are then summarized for the month by an average and standard deviation at the bottom of the tables. Tables 32-51 contain a similar data set for direct solar irradiance starting in May 1976. Summaries for each data year are given in Tables 52-56.

Missing data is coded with an M and estimated data is noted with an E. Any 0.0 value recorded in the tables is an actual measurement. A daily total is labeled missing if one hour is missing. A monthly average is missing if 8 daily values are missing.

Several useful conversion factors are listed in Table 1.

<u>To convert from</u>	<u>to</u>	<u>Multiply by</u>
British thermal unit (thermochemical)	joule	1.054350×10^3
Btu (thermochemical)/h	watt	2.928751×10^{-1}
Btu (thermochemical)/min	watt	1.757250×10^1
Btu (thermochemical)/s	watt	1.054350×10^3
Btu (thermochemical)/ft ²	joule per meter ²	1.134893×10^4
Btu (thermochemical)/ft ² ·h	watt per meter ²	3.152481×10^0
Btu (thermochemical)/ft ² ·min	watt per meter ²	1.891489×10^2
Btu (thermochemical)/ft ² ·s	watt per meter ²	1.134893×10^4
calorie (thermochemical)	joule	4.184000×10^0
cal (thermochemical)/cm ²	joule per meter ²	4.184000×10^4
cal (thermochemical)/min	watt	6.973333×10^{-2}
cal (thermochemical)/s	watt	4.184000×10^0
cal (thermochemical)/cm ² ·min	watt per meter ²	6.973333×10^2
cal (thermochemical)/cm ² ·s	watt per meter ²	4.184000×10^4
degree Fahrenheit	degree Celsius	$t_{oC} = (t_{oF} - 32)/1.8$
foot	meter	3.048000×10^{-1}
knot (international)	meter per second	5.144444×10^{-1}
langley	joule per meter ²	4.184000×10^4
langley	Btu per foot ²	3.686691×10^0
mile (statute)	meter	1.609300×10^3
millibar	pascal	1.000000×10^2
watt·hour	joule	3.600000×10^3

MAY 1975

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			
17																			
18																			
19																			
20																			
21																			
22																			
23	M	M	M	M	M	M	M	M	2.924	2.402	1.802	2.068	1.691	.653	.324	.003	0.000	0.000	M
24	.008	.328	.985	1.713	2.387	2.936	3.352	3.565	3.590	3.389	2.971	2.393	1.702	.993	.306	.001	0.000	0.000	30.620
25	.018	.402	.503	1.841	1.686	1.333	.939	1.589	1.712	1.369	.550	.276	.226	.102	.074	.000	0.000	0.000	12.672
26	.012	.355	.997	1.743	2.409	3.004	3.579	3.635	3.615	3.405	2.961	2.399	1.698	.965	.291	.004	0.000	0.000	31.073
27	.005	.167	.913	1.465	1.671	1.530	1.237	2.185	2.543	1.955	1.750	1.062	1.581	.431	.163	.006	0.000	0.000	18.664
28	.008	.012	.022	.085	.079	.218	.265	.228	.449	.459	.390	.338	.204	.120	.033	.004	0.000	0.000	2.913
29	0.000	.014	.050	.118	.314	.516	.544	.648	.994	1.153	1.112	1.039	.699	.566	.250	.008	0.000	0.000	8.026
30	.013	.351	1.001	1.747	2.397	3.073	3.356	3.580	2.138	2.051	1.435	2.224	1.693	.527	.231	.031	0.000	0.000	25.848
31	.021	.164	.713	1.658	2.442	3.139	1.980	1.196	3.464	2.645	.592	1.203	.790	.272	.049	.036	0.000	0.000	20.364

AVERAGE	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
VALUES																			
STANDARD	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
DEVIATION																			

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 2

JUNE 1975

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	.017	.173	.936	1.781	2.431	3.071	3.524	3.147	3.607	3.339	3.035	2.325	1.753	.952	.263	.029	0.000	0.000	30.384
2	.039	.403	.974	1.680	2.351	2.918	3.236	3.551	3.553	2.818	2.627	1.776	1.199	.691	.251	.008	0.000	0.000	28.073
3	.007	.238	.813	1.428	2.104	2.462	M	2.350	1.768	1.476	2.329	1.551	.955	1.183	.427	.040	0.000	0.000	M
4	.026	.180	.375	1.097	1.442	3.013	3.115	3.044	3.567	3.411	2.438	2.299	1.327	.988	.404	.018	0.000	0.000	26.745
5	.017	.369	1.025	1.737	2.403	2.962	3.361	3.550	3.524	3.322	2.939	2.377	1.718	1.021	.364	.006	0.000	0.000	30.695
6	.015	.377	.988	1.719	2.363	2.822	2.006	3.159	2.729	2.480	2.699	1.987	.592	.678	.378	.017	0.000	0.000	25.010
7	.010	.173	.942	1.721	2.387	2.710	1.712	3.818	2.603	.286	1.028	1.630	.485	.014	.005	0.000	0.000	0.000	19.524
8	.007	.105	.344	1.667	2.037	2.944	1.168	.817	1.357	.955	.659	.427	.568	.217	.097	.002	0.000	0.000	13.368
9	.021	.268	.966	1.782	2.149	2.865	1.939	.971	1.065	1.172	.548	.375	.257	.223	.034	.000	0.000	0.000	14.637
10	0.000	.038	.356	.820	.653	.479	.449	.609	.802	1.156	1.482	1.997	1.833	1.140	.368	.018	0.000	0.000	12.202
11	.021	.382	1.054	1.798	2.465	3.060	3.370	3.738	3.513	3.048	2.772	2.015	1.386	.788	.236	.011	0.000	0.000	29.657
12	.023	.384	1.042	1.765	2.423	2.975	3.456	2.471	2.286	1.512	.818	1.836	1.390	.632	.203	.024	0.000	0.000	23.242
13	.016	.278	.971	1.706	2.332	2.820	2.865	2.985	2.506	2.696	2.860	2.355	1.636	.826	.189	.004	0.000	0.000	27.043
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	.983	.745	1.171	.463	.531	.271	.025	0.000	0.000	M
17	.029	.287	.578	1.069	.935	1.485	2.468	1.841	2.623	2.503	2.007	1.240	.390	.125	.043	.001	0.000	0.000	17.825
18	.005	.091	.154	.262	.489	.647	1.747	2.784	3.045	2.041	1.330	.562	M	M	M	M	M	M	M
19	M	M	M	M	2.544	3.045	3.414	3.153	1.996	3.356	1.269	2.383	1.398	1.243	.355	.015	0.000	0.000	M
20	.026	.376	1.017	1.726	2.375	2.929	3.379	3.584	3.519	2.856	2.623	.296	1.393	1.138	.478	.032	0.000	0.000	27.747
21	.027	.273	.924	1.719	2.317	2.684	2.435	2.047	2.155	2.171	.374	.981	1.267	.299	.122	.021	0.000	0.000	19.816
22	.067	.491	.816	.995	1.218	2.062	2.272	3.194	2.090	2.622	2.669	2.495	1.430	.839	.246	.006	0.000	0.000	23.514
23	.027	.376	1.006	1.704	2.375	2.919	3.344	3.578	3.539	3.593	3.088	2.795	1.781	.495	.308	.023	0.000	0.000	30.950
24	.025	.357	.980	1.722	2.323	2.425	3.308	3.505	3.549	3.293	2.247	1.460	1.210	.462	.335	.019	0.000	0.000	27.218
25	.026	.382	1.025	1.703	2.334	2.921	3.410	3.590	3.615	2.644	.651	.995	1.211	.921	.463	.033	0.000	0.000	25.924
26	.032	.405	1.050	1.810	2.505	3.051	3.467	3.714	3.671	3.484	3.075	2.505	1.833	1.110	.443	.028	0.000	0.000	32.184
27	.025	.391	1.029	1.747	2.416	2.943	3.386	3.649	3.642	3.470	3.066	2.502	1.826	1.103	.430	.016	0.000	0.000	31.641
28	.038	.323	1.032	1.871	2.371	2.594	1.917	2.024	2.728	2.231	.418	.661	1.094	.417	.200	.062	0.000	0.000	19.983
29	.035	.315	1.027	1.783	2.358	2.957	3.396	3.645	3.583	3.381	2.947	2.386	1.764	1.073	.289	.013	0.000	0.000	30.952
30	.019	.352	.997	1.696	2.383	2.945	3.405	3.679	3.587	3.425	3.001	2.423	1.829	1.098	.422	.021	0.000	0.000	31.281
AVERAGE VALUES																			
STANDARD DEVIATION																			
.023 .299 .862 1.558 2.092 2.619 2.760 2.896 2.823 2.490 1.991 1.707 1.259 .749 .282 .018 0.000 0.000 24.984																			
.013 .113 .263 .387 .587 .686 .850 .946 .878 .952 .996 .766 .503 .365 .137 .014 0.000 0.000 6.130																			

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

JULY 1975

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. STD. 12-13	13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)	
1	.019	.349	.990	1.680	2.311	2.871	3.287	3.542	3.457	3.295	2.904	2.355	1.616	.974	.545	.053	0.000	0.000	30.248	
2	M	M	M	1.774	2.302	2.834	3.262	3.552	3.555	3.390	2.892	2.359	1.322	.554	.201	.028	0.000	0.000	M	
3	.018	.297	.876	1.558	2.217	2.757	3.186	3.467	3.465	3.295	2.473	1.121	.951	.497	.206	.018	0.000	0.000	26.402	
4	.015	.328	.933	1.576	2.227	2.798	3.228	3.512	3.479	3.290	2.913	2.200	1.094	.445	.163	.018	0.000	0.000	28.219	
5	.013	.318	.924	1.589	2.237	2.801	3.205	3.700	2.996	.720	.233	.079	.016	.028	.014	.003	0.000	0.000	18.876	
6	.014	.296	.874	1.560	2.206	2.770	3.214	3.472	3.484	3.344	2.985	2.002	1.409	.944	.434	.032	0.000	0.000	29.041	
7	.010	.308	.912	1.566	2.193	2.729	3.159	M	M	M	M	M	M	M	M	M	M	M	M	
8	M	M	M	M	M	M	M	M	M	3.286	3.153	1.655	.751	.845	.514	.024	0.000	0.000	M	
9	.014	.296	.929	1.586	2.242	2.771	3.224	2.622	.673	1.028	2.106	.168	.117	.083	.031	.012	0.000	0.000	17.902	
10	.011	.269	.865	1.640	1.966	2.834	2.920	2.594	3.114	3.338	2.959	2.181	.749	.831	.155	.011	0.000	0.000	26.437	
11	.009	.287	.920	1.617	2.275	2.831	3.275	3.522	3.328	3.358	2.935	1.868	1.402	.524	.352	.010	0.000	0.000	28.513	
12	.009	.294	.925	1.636	2.327	2.897	3.333	3.594	3.620	3.403	2.989	2.428	1.762	1.057	.402	.025	0.000	0.000	30.701	
13	.009	.289	.908	1.564	2.099	2.788	3.178	3.490	3.366	3.291	2.964	2.441	1.751	.852	.171	.017	0.000	0.000	29.178	
14	.010	.317	.914	1.564	2.225	2.782	3.297	2.629	.371	.421	.606	.878	.223	.229	.064	.005	0.000	0.000	16.534	
15	.009	.247	.887	1.565	2.055	2.677	3.201	3.576	2.679	1.890	.725	.770	.736	.833	.334	.030	0.000	0.000	22.214	
16	.015	.321	.856	1.576	2.226	2.769	3.207	M	M	M	.330	.208	.326	.042	.016	.011	0.000	0.000	M	
17	.006	.240	.882	1.523	2.254	2.783	3.156	1.822	1.203	2.053	1.555	1.013	1.255	1.059	.422	.030	0.000	0.000	21.256	
18	.006	.252	.856	1.535	2.218	2.163	1.686	2.875	2.400	2.605	1.487	1.729	.826	.704	.219	.021	0.000	0.000	21.582	
19	.006	.257	.860	1.631	2.189	2.740	2.951	1.639	2.711	2.774	1.231	1.745	1.805	1.050	.431	.025	0.000	M	24.046	
20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
23	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
29	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
AVERAGE VALUES																				M
STANDARD DEVIATION																				M

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 4.

AUGUST 1975

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
4	M	M	M	M	M	M	M	M	3.446	3.404	2.733	1.860	1.480	.532	.274	.009	0.000	0.000	M
5	.002	.157	.751	1.436	2.131	2.711	3.150	3.323	3.161	2.293	2.216	1.025	.629	.429	.278	.011	0.000	0.000	23.702
6	0.000	.161	.758	1.273	2.270	2.905	2.162	1.400	.790	.965	.531	.643	.516	.716	.131	.004	0.000	0.000	15.224
7	0.000	.149	.709	1.382	2.050	2.623	3.144	2.256	1.067	.832	1.749	1.007	.505	.874	.265	0.000	0.000	0.000	18.612
8	0.000	.086	.661	1.403	2.101	2.667	3.129	3.371	3.366	3.183	2.805	2.238	1.560	.849	.225	0.000	0.000	0.000	27.643
9	0.000	.143	.730	1.405	2.131	2.703	3.149	3.415	3.421	3.116	2.822	1.286	.459	.350	.126	0.000	0.000	0.000	25.257
10	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	1.258	1.499	1.205	.709	.704	.112	0.000	0.000	0.000	M
16	0.000	.101	.631	1.318	2.013	2.612	2.904	2.846	2.974	.825	1.951	.884	.794	.279	.069	0.000	0.000	M	20.200
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	2.878	3.008	3.153	3.118	1.479	2.037	2.023	1.414	.634	.029	0.000	0.000	0.000	M
19	0.000	.113	.725	1.407	2.115	2.390	2.195	2.594	1.755	1.299	1.929	1.264	.706	.313	.060	0.000	0.000	0.000	18.863
20	0.000	.048	.337	.620	1.117	1.610	2.147	2.347	1.868	1.814	1.709	.518	.276	.271	.053	0.000	0.000	0.000	14.736
21	0.000	.075	.599	1.299	1.973	2.571	2.598	3.324	2.800	2.381	1.098	.360	.557	.355	.035	0.000	0.000	0.000	20.025
22	0.000	.075	.600	1.238	1.982	2.579	3.074	2.042	2.043	2.031	2.255	1.428	.509	.393	.103	0.000	0.000	0.000	20.351
23	0.000	.080	.598	1.268	1.996	2.556	3.014	3.439	1.546	2.430	1.253	1.108	.694	.306	.079	0.000	0.000	0.000	20.367
24	0.000	.085	.635	1.417	1.794	2.394	2.107	3.238	3.131	2.295	1.437	2.115	1.456	.745	.096	0.000	0.000	0.000	22.945
25	0.000	.071	.573	1.288	2.008	2.619	3.025	3.051	3.284	3.091	2.669	1.847	1.180	.646	.092	0.000	0.000	0.000	25.445
26	0.000	.090	.519	1.113	1.849	2.586	3.001	3.245	3.238	3.042	2.614	2.028	1.290	.574	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	2.553	2.185	1.513	1.113	.513	.066	0.000	0.000	0.000	M
29	0.000	.061	.559	1.242	1.950	2.594	3.004	3.237	3.236	2.977	2.524	1.977	1.024	.452	.080	0.000	0.000	0.000	24.917
30	0.000	.050	.540	1.226	1.943	2.580	3.012	3.235	3.240	3.045	2.566	1.987	1.245	.545	.044	0.000	0.000	0.000	25.260
31	0.000	.048	.555	1.258	1.943	2.579	3.019	3.198	3.188	3.009	2.550	1.971	1.254	.540	.035	0.000	0.000	0.000	25.146
AVERAGE VALUES																			
STANDARD DEVIATION																			

M

MISSING DATA
ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 21)
SERIAL NO. 12517 F3

SEPTEMBER 1975

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	0.000	.044	.511	1.199	1.869	2.473	2.898	3.130	3.129	2.915	2.460	1.892	1.133	.437	.026	0.000	0.000	0.000	24.116
2	0.000	.050	.485	1.289	1.523	2.217	2.698	2.678	3.209	2.332	.361	.101	.585	.535	.034	0.000	0.000	0.000	18.098
3	0.000	.036	.470	1.148	1.850	2.442	2.868	3.088	2.901	2.484	2.517	1.618	.944	.445	.021	0.000	0.000	0.000	22.831
4	0.000	.020	.455	1.228	1.699	2.564	3.021	3.177	3.135	2.952	1.913	.964	.420	.184	.015	0.000	0.000	0.000	21.746
5	0.000	.034	.450	1.139	1.850	2.443	2.862	3.092	3.100	2.845	2.414	1.817	1.119	.422	.019	0.000	0.000	0.000	23.606
6	0.000	.031	.461	1.170	1.897	2.493	2.933	3.130	3.140	2.912	2.461	1.847	1.143	.441	.022	0.000	0.000	0.000	24.083
7	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	M	M	M	.765	.702	.168	.008	0.000	0.000	0.000	M
9	0.000	.008	.165	.856	1.514	2.319	2.801	2.967	2.786	2.879	1.638	.818	.363	.071	.002	0.000	0.000	0.000	19.187
10	0.000	.017	.324	1.084	1.813	1.732	1.143	1.605	1.213	1.131	1.029	.935	.740	.141	.005	0.000	0.000	0.000	12.911
11	0.000	.004	.018	.146	.156	.218	.290	.307	.326	.166	.143	.122	.147	.120	.006	0.000	0.000	0.000	2.169
12	0.000	.010	.063	M	M	M	M	M	M	M	.569	.457	.223	.142	.006	0.000	0.000	0.000	M
13	0.000	.021	.357	.938	1.671	2.253	2.609	2.048	2.034	2.340	1.548	.880	.467	.111	.004	0.000	0.000	0.000	17.281
14	0.000	.015	.445	.993	1.735	2.423	1.909	2.742	.882	.385	.469	1.347	.471	.297	.003	0.000	0.000	0.000	14.116
15	0.000	.013	.377	1.071	1.771	2.348	1.808	.987	2.157	.856	1.073	.958	.272	.151	.003	0.000	0.000	0.000	13.846
16	0.000	.009	.319	.713	1.464	2.374	2.515	2.226	1.173	1.848	.904	1.416	.385	.289	.001	0.000	0.000	0.000	15.637
17	0.000	.011	.355	1.032	1.718	2.322	2.667	2.108	3.051	2.647	2.297	1.689	.974	.243	.001	0.000	0.000	0.000	21.115
18	0.000	.012	.343	.972	1.772	1.127	1.367	1.848	1.234	1.001	.651	.477	.139	.030	.003	0.000	0.000	0.000	10.975
19	0.000	.010	.320	1.030	1.721	2.288	2.730	2.944	2.934	2.668	2.236	1.603	.824	.216	.003	0.000	0.000	0.000	21.528
20	0.000	.009	.347	.993	1.686	2.193	2.396	2.367	2.808	2.625	2.177	1.389	.732	.143	.004	0.000	0.000	0.000	19.869
21	0.000	.013	.299	.978	1.711	2.303	2.710	2.951	2.954	2.659	2.223	1.592	.881	.182	.002	0.000	0.000	0.000	21.458
22	0.000	0.000	.322	.999	1.706	2.287	2.714	2.919	2.910	2.642	2.177	1.546	.858	.181	0.000	0.000	0.000	0.000	21.262
23	0.000	0.000	.316	1.004	1.683	2.240	2.660	2.862	2.851	2.591	2.154	1.531	.836	.150	0.000	0.000	0.000	0.000	20.879
24	0.000	0.000	.303	.981	1.661	2.223	2.669	2.888	2.872	2.598	2.146	1.500	.791	.146	0.000	0.000	0.000	0.000	20.777
25	0.000	0.000	.297	.957	1.653	2.222	2.640	2.813	2.816	2.559	2.105	1.468	.781	.125	0.000	0.000	0.000	0.000	20.434
26	0.000	0.000	.266	.941	1.598	2.097	2.617	2.587	2.664	1.848	1.028	1.069	.573	.093	0.000	0.000	0.000	0.000	17.383
27	0.000	0.000	.255	.898	1.584	2.141	2.567	2.778	2.739	2.476	2.029	1.384	.765	.110	0.000	0.000	0.000	0.000	19.726
28	0.000	0.000	.306	.906	1.583	2.186	2.605	2.820	2.763	2.524	2.065	1.353	.615	.099	0.000	0.000	0.000	0.000	19.823
29	0.000	0.000	.394	.280	1.276	1.988	2.733	2.074	.903	.596	.447	.361	.386	.090	0.000	0.000	0.000	0.000	11.527
30	0.000	0.000	.107	.232	.229	.506	1.171	2.249	2.381	2.513	1.866	1.342	.531	.110	0.000	0.000	0.000	0.000	13.238
AVERAGE VALUES	0.000	.013	.326	.932	1.570	2.090	2.393	2.496	2.410	2.148	1.611	1.181	.648	.203	.006	0.000	0.000	0.000	18.134
STANDARD DEVIATION	0.000	.014	.122	.285	.419	.571	.670	.691	.851	.852	.770	.513	.288	.132	.009	0.000	0.000	0.000	5.000

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 6.

OCTOBER 1975

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. STD. 12-13	TIME 13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	0.000	0.000	.289	.962	1.634	2.137	2.555	2.776	2.739	2.402	1.965	1.368	.870	.057	0.000	0.000	0.000	0.000	19.754
2	0.000	0.000	.276	.922	1.517	2.105	2.555	2.737	2.711	2.439	1.980	1.539	.690	.056	0.000	0.000	0.000	0.000	19.527
3	0.000	0.000	.244	.808	1.505	2.102	2.526	2.714	2.678	2.389	1.929	1.450	.456	0.000	0.000	0.000	0.000	0.000	18.800
4	0.000	0.000	.267	.863	.655	1.039	2.010	1.882	2.591	M	M	M	M	M	M	M	M	M	M
5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
7	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
9	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
10	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
AVERAGE VALUES	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
STANDARD DEVIATION	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

JANUARY 1976

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. STD. TIME 12-13 13-14 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
4	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
7	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
9	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
10	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	1.841	1.879	1.791	1.363	.843	.164	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	.086	.673	1.222	1.532	1.790	1.867	1.728	1.372	.836	.176	0.000	0.000	0.000	0.000
21	0.000	0.000	0.000	.048	.479	1.024	1.480	1.765	1.868	1.759	1.390	.864	.173	0.000	0.000	0.000	0.000
22	0.000	0.000	0.000	.053	.501	1.075	1.524	1.816	1.921	1.807	1.429	.916	.203	0.000	0.000	0.000	0.000
23	0.000	0.000	0.000	.054	.514	1.088	1.541	2.020	1.800	1.241	.420	.135	.115	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	.893	.719	.285	.064	0.000	0.000	0.000	0.000
27	0.000	0.000	0.000	.068	.519	1.202	1.354	1.729	1.448	1.513	1.207	.460	.090	0.000	0.000	0.000	0.000
28	0.000	0.000	0.000	.059	.454	.899	1.272	1.759	1.935	1.776	1.481	.994	.277	0.000	0.000	0.000	0.000
29	0.000	0.000	0.000	.069	.536	1.107	1.547	1.871	1.985	1.888	1.517	1.013	.312	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	.027	.477	.909	.887	1.265	1.734	.311	.459	.288	.166	0.000	0.000	0.000	0.000
31	0.000	0.000	0.000	.115	.496	.766	1.476	1.424	1.326	1.489	.833	.466	.175	0.000	0.000	0.000	0.000
AVERAGE VALUES																	
STANDARD DEVIATION																	

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER MODEL 21
SERIAL NO. 12513 F3

Table 8.

FEBRUARY 1976

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/ISQ. AFTER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. STD. TIME 12-13 13-14 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	0.000	0.000	0.000	.072	.551	1.271	1.508	1.602	1.107	1.632	2.032	1.292	.524	0.000	0.000	0.000	11.591
2	0.000	0.000	0.000	.057	.346	.854	1.700	2.112	2.244	2.099	1.808	1.200	.359	0.000	0.000	0.000	12.783
3	0.000	0.000	0.000	.089	.529	1.219	1.608	1.480	1.343	1.243	.780	.977	.209	0.000	0.000	0.000	9.476
4	0.000	0.000	0.000	.049	.279	.359	.465	.728	.709	.529	.339	.271	.091	0.000	0.000	0.000	3.819
5	0.000	0.000	0.000	.051	.281	.430	.835	1.155	1.326	.778	.505	.305	.119	.002	0.000	0.000	5.787
6	0.000	0.000	0.000	.058	.273	.466	.793	.788	1.181	1.150	1.003	.742	.334	.004	0.000	0.000	6.791
7	0.000	0.000	0.000	.076	.261	1.196	1.859	2.221	2.303	2.301	1.987	1.444	.611	.010	0.000	0.000	14.359
8	0.000	0.000	0.000	.094	.658	1.310	1.835	1.982	1.897	1.433	.722	.397	.621	.020	0.000	0.000	10.969
9	0.000	0.000	0.000	.096	.510	1.247	1.798	1.538	1.548	1.843	1.730	.968	.281	.013	0.000	0.000	11.572
10	0.000	0.000	0.000	.108	.659	1.176	2.048	1.806	2.500	2.370	2.010	1.370	.640	.017	0.000	0.000	14.704
11	0.000	0.000	0.000	.116	.671	1.338	1.871	2.214	2.418	2.359	2.028	1.465	.671	.010	0.000	0.000	15.161
12	0.000	0.000	0.000	.117	.702	1.362	1.868	2.234	2.472	2.402	2.077	1.576	.713	.015	M	M	15.537
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	.354	.932	1.573	1.294	.153	0.000	0.000	M
24	0.000	0.000	.003	.233	.923	1.586	2.118	2.441	2.781	2.794	.908	.630	.204	.047	0.000	0.000	14.666
25	0.000	0.000	.006	.096	.628	1.613	2.142	2.388	2.484	2.544	2.311	1.381	.581	.064	0.000	0.000	16.242
26	0.000	0.000	.004	.206	.571	1.117	1.910	2.278	2.650	2.737	1.972	1.469	.666	.148	0.000	0.000	15.729
27	0.000	0.000	.008	.211	.506	.815	.803	.872	1.454	1.752	1.830	.794	.476	.147	0.000	0.000	9.669
28	0.000	0.000	.015	.304	.788	1.349	1.862	2.102	1.688	1.859	1.980	2.066	1.336	.180	0.000	0.000	15.529
29	0.000	0.000	.002	.136	.327	.498	.580	.643	.795	1.475	2.192	1.571	.410	.086	0.000	0.000	8.715
AVERAGE VALUES	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
STANDARD DEVIATION	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

M E MISSING DATA
ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 9.

MARCH 1976

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	0.000	0.000	.008	.202	.904	1.607	2.194	2.514	2.751	2.736	2.444	1.835	.941	.085	0.000	0.000	0.000	0.000	18.220
2	0.000	0.000	.003	.059	.584	.821	.770	.725	1.717	2.800	1.001	.911	.461	.056	0.000	0.000	0.000	0.000	9.909
3	0.000	0.000	.021	.243	.690	1.741	2.239	2.534	2.389	1.713	1.136	.940	.484	.038	0.000	0.000	0.000	0.000	14.228
4	0.000	0.000	.006	.136	.468	.818	1.015	1.289	1.466	1.428	1.177	.781	.465	.230	0.000	0.000	0.000	0.000	9.279
5	0.000	0.000	.056	.582	1.430	2.161	2.626	2.908	3.066	2.946	2.556	1.949	1.169	.242	0.000	0.000	0.000	0.000	21.691
6	0.000	0.000	.025	.428	1.209	1.927	2.510	2.882	3.117	3.017	2.622	1.995	1.204	.247	0.000	0.000	0.000	0.000	21.186
7	0.000	0.000	.028	.423	1.172	1.877	2.439	2.807	2.970	2.887	2.502	1.893	1.124	.224	0.000	0.000	0.000	0.000	20.347
8	0.000	0.000	.040	.463	1.113	1.892	2.478	2.845	3.016	2.919	2.555	1.956	1.169	.240	0.000	0.000	0.000	0.000	20.686
9	0.000	0.000	.031	.439	1.182	1.870	2.455	2.786	2.975	2.917	2.540	1.975	1.080	.250	0.000	0.000	0.000	0.000	20.501
10	0.000	0.000	.074	.585	1.199	1.926	2.509	2.853	3.011	2.889	2.523	1.922	1.151	.279	0.000	0.000	0.000	0.000	20.921
11	0.000	0.000	.034	.359	.486	1.447	1.796	3.110	1.314	1.027	.967	.869	.289	.114	0.000	0.000	0.000	0.000	11.811
12	0.000	0.000	.054	.456	1.097	1.834	2.503	2.952	2.769	2.779	2.165	1.941	.876	.333	0.000	0.000	0.000	0.000	19.778
13	0.000	0.000	.085	.387	1.286	1.987	2.582	3.013	1.481	1.272	2.329	1.728	1.450	.417	0.000	0.000	0.000	0.000	18.017
14	0.000	0.000	.049	.499	1.248	1.505	1.841	2.510	2.100	1.598	.955	.213	.214	.094	0.000	0.000	0.000	0.000	12.826
15	0.000	0.000	.058	.555	1.299	1.433	.940	1.643	1.416	.963	1.145	1.553	1.276	.393	0.000	M	M	M	12.674
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M	1.167	.480	0.000	0.000	0.000	0.000	M
20	0.000	0.000	.103	.617	1.281	2.134	2.598	2.977	3.257	3.118	2.779	2.199	1.409	.445	0.000	0.000	0.000	0.000	22.917
21	0.000	0.000	.077	.594	1.410	2.170	2.803	3.014	1.158	2.206	2.666	1.662	.772	.177	0.000	0.000	0.000	0.000	18.710
22	0.000	0.000	.093	.643	1.401	2.284	2.807	3.047	3.165	2.970	2.560	1.610	1.072	.295	0.000	0.000	0.000	0.000	21.937
23	0.000	0.000	.161	.728	1.446	1.993	2.205	2.448	2.571	2.542	2.607	1.958	1.176	.214	.001	0.000	0.000	0.000	20.050
24	0.000	0.000	.229	.917	1.545	2.283	2.833	3.120	3.037	3.037	2.142	.598	.865	.370	.008	0.000	0.000	0.000	20.982
25	0.000	0.000	.299	1.004	1.753	2.490	3.221	2.276	3.303	2.279	.861	.311	.133	.006	0.000	0.000	0.000	0.000	17.936
26	0.000	.000	.240	1.032	1.828	2.511	3.008	3.289	3.357	3.148	2.686	2.015	1.228	.415	.007	0.000	0.000	0.000	24.763
27	0.000	0.000	.083	1.018	1.807	2.469	2.918	3.137	2.553	2.867	1.977	1.428	.738	.218	.011	0.000	0.000	0.000	21.225
28	0.000	.001	.129	.546	.663	1.774	2.227	1.730	2.000	.475	.111	.151	.094	.045	.000	0.000	0.000	0.000	9.948
29	0.000	.001	.237	.723	1.176	1.555	2.083	3.124	3.217	3.050	2.011	.962	.699	.310	.008	0.000	0.000	0.000	19.157
30	0.000	.002	.292	1.114	1.885	2.564	2.470	2.183	2.802	2.940	2.373	1.482	.446	.303	.013	0.000	0.000	0.000	20.868
31	0.000	.006	.337	1.113	1.885	2.552	3.024	3.297	3.349	3.126	2.672	2.011	1.220	.456	.011	0.000	0.000	0.000	25.060
AVERAGE VALUES	0.000	.000	.106	.588	1.239	1.912	2.337	2.630	2.568	2.434	2.002	1.440	.871	.249	.002	0.000	0.000	0.000	18.357
STANDARD DEVIATION	0.000	.001	.100	.292	.411	.463	.617	.634	.713	.792	.763	.630	.403	.136	.004	0.000	0.000	0.000	4.532

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 10.

APRIL 1976

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	0.000	.005	.372	1.146	1.921	2.587	3.063	3.294	3.349	3.139	2.489	.902	.492	.576	.049	0.000	0.000	0.000	23.385
2	0.000	.005	.374	1.152	1.922	2.575	3.019	3.299	3.319	3.051	2.531	1.889	1.145	.446	.021	0.000	0.000	0.000	24.749
3	0.000	.010	.383	1.144	1.912	2.582	3.058	3.316	3.364	3.134	2.689	2.032	1.260	.478	.018	0.000	0.000	0.000	25.380
4	0.000	.013	.400	1.165	1.940	2.602	3.074	3.303	3.375	2.794	1.482	.990	.858	.414	.022	0.000	0.000	0.000	22.431
5	0.000	.015	.408	1.166	1.903	2.567	2.996	3.248	3.343	2.856	1.496	1.047	.621	.064	0.000	0.000	0.000	0.000	21.729
6	0.000	.000	.020	M	M	M	M	M	M	M	M	M	.342	.149	0.000	0.000	0.000	0.000	M
7	0.000	.007	.104	.721	2.065	2.767	2.091	1.280	1.549	1.718	2.531	2.182	1.674	.560	.024	0.000	0.000	0.000	19.095
8	0.000	.002	.058	.158	.294	.564	.859	1.276	1.303	.683	.549	.172	.081	.123	.002	0.000	0.000	0.000	6.321
9	0.000	.030	.513	1.285	2.002	2.637	3.118	3.351	3.154	2.616	2.987	2.395	1.122	.493	.045	0.000	0.000	0.000	25.648
10	0.000	.038	.536	1.343	2.065	2.726	3.201	3.431	3.457	3.251	2.791	2.152	1.332	.580	.035	0.000	0.000	0.000	26.938
11	0.000	.002	.053	.136	.356	.827	1.968	2.121	3.417	2.915	2.557	2.074	1.289	.640	.040	0.000	0.000	0.000	18.394
12	0.000	.038	.434	1.275	1.888	2.457	3.124	3.509	3.240	3.096	.774	1.182	.271	.204	.004	0.000	0.000	0.000	21.497
13	0.000	.028	.490	1.131	2.026	2.555	2.977	2.789	1.123	1.930	1.548	2.229	1.433	.491	.062	0.000	0.000	0.000	20.813
14	0.000	.048	.556	1.327	2.100	2.431	2.936	3.479	3.414	3.088	1.710	1.392	.864	.424	.078	0.000	0.000	0.000	23.848
15	0.000	.029	.396	1.189	1.847	1.594	1.800	2.202	2.164	2.984	1.868	.797	.912	.134	.063	0.000	0.000	0.000	17.980
16	0.000	.007	.110	.314	.885	1.158	1.237	1.512	1.467	1.504	1.205	.709	.381	.145	.012	0.000	0.000	0.000	10.646
17	0.000	.010	.103	.175	.442	.625	.770	.790	1.150	.966	.927	.876	.698	.433	.048	0.000	0.000	0.000	8.014
18	0.000	.045	.272	1.323	2.170	2.326	1.864	2.891	2.945	1.961	.609	.357	.126	.044	.013	0.000	0.000	0.000	16.945
19	0.000	.079	.596	1.456	2.216	2.866	2.408	2.245	2.087	1.132	.925	1.254	.634	.284	.067	0.000	0.000	0.000	18.249
20	0.000	.084	.639	1.447	2.231	2.824	3.345	3.610	3.591	3.353	2.450	1.933	.530	.531	.087	0.000	0.000	0.000	26.655
21	0.000	.068	.608	1.275	2.236	1.842	1.415	2.603	2.789	1.733	1.248	.974	1.603	.651	.031	0.000	0.000	0.000	19.076
22	0.000	.145	.730	1.464	2.186	2.862	3.062	3.669	2.241	1.998	.988	1.850	1.045	.883	.125	0.000	0.000	0.000	23.249
23	0.000	.090	.502	1.110	.947	1.982	2.140	.573	1.547	.580	.743	1.237	1.382	.499	.183	0.000	0.000	0.000	13.515
24	0.000	.122	.760	1.528	2.345	2.958	3.480	3.678	3.717	3.045	2.993	1.482	1.562	.851	.112	0.000	0.000	0.000	28.633
25	0.000	.132	.422	1.230	2.226	2.457	1.991	2.163	3.222	2.467	2.262	1.294	.944	.400	.074	0.000	0.000	0.000	21.284
26	0.000	.001	.033	.162	.176	.126	.220	.263	.081	.055	.029	.020	.033	.015	.005	0.000	0.000	0.000	1.219
27	0.000	.008	.082	.164	.280	.547	.687	.703	.850	.683	.972	.442	.157	.039	.016	0.000	0.000	0.000	5.630
28	0.000	.021	.109	.705	.783	.662	.713	.872	.713	.838	1.876	.746	.440	.083	.007	0.000	0.000	0.000	8.548
29	0.000	.036	.144	.381	.968	.772	1.119	1.854	1.809	.856	1.023	.732	.176	.081	.009	0.000	0.000	0.000	9.960
30	0.000	.056	.483	1.430	2.531	2.647	2.919	3.376	2.459	2.464	2.955	2.166	1.287	.756	.196	0.000	0.000	0.000	25.725

AVERAGE	0.000	.039	.356	.983	1.616	2.004	2.229	2.438	2.422	2.106	1.687	1.293	.823	.382	.048	0.000	0.000	0.000	18.468
VALUES	0.000	.041	.224	.479	.749	.904	.982	1.100	1.054	.998	.857	.680	.505	.254	.051	0.000	0.000	0.000	7.409
STANDARD																			
DEVIATION																			

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 11.

MAY 1976		HEMISPHERIC SOLAR IRRADIANCE HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)													FORT COLLINS COLORADO COLORADO STATE UNIVERSITY DEPARTMENT OF ATMOSPHERIC SCIENCE						
DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. STD. TIME 12-13 13-14 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)				
1	0.000	.176	.868	1.676	2.424	3.043	3.520	3.727	3.734 3.540 2.441	1.398	.646	.339	.177	0.000	0.000	0.000	27.709				
2	0.000	.198	.878	1.657	2.403	3.011	3.445	3.492	3.539 3.384 2.961	2.060	1.528	.737	.139	0.000	0.000	0.000	29.432				
3	0.000	.192	.859	1.609	2.348	2.948	3.477	3.758	3.381 3.131 1.682	2.182	1.405	.362	.052	0.000	0.000	0.000	27.386				
4	0.000	.089	.386	.884	1.253	1.530	2.031	1.443	1.531 1.174 1.341	.911	.388	.538	.076	0.000	0.000	0.000	13.576				
5	0.000	.211	1.265	1.975	2.412	2.802	2.525	2.122	2.368 1.054 .520	.272	1.060	.471	.035	0.000	0.000	0.000	19.090				
6	0.000	.021	.211	.289	.385	.425	.412	.493	.741 .559 .372	.268	.156	.078	.008	0.000	0.000	0.000	4.421				
7	0.000	.132	.315	.387	.923	1.488	1.200	1.865	3.028 2.988 2.962	2.305	1.542	.248	.068	0.000	0.000	0.000	19.651				
8	.004	.232	.792	1.539	2.342	2.571	2.113	3.520	3.307 2.978 1.875	1.607	.717	.791	.231	0.000	0.000	0.000	24.618				
9	.002	.228	.722	1.694	2.416	2.320	.951	1.694	1.073 1.511 2.074	1.439	1.144	.389	.061	.001	0.000	0.000	18.718				
10	.003	.241	.920	1.572	2.408	2.995	3.488	3.296	3.153 3.309 2.793	.379	.823	.613	.023	0.000	0.000	0.000	26.016				
11	.002	.318	.788	.587	1.105	1.987	2.793	2.129	.595 .334 .272	.243	.202	.133	.089	.000	0.000	0.000	11.579				
12	M	M	M	1.659	2.620	1.933	3.016	2.417	3.351 2.738 2.028	2.608	1.746	.889	.233	0.000	0.000	0.000	M				
13	.004	.280	.973	1.785	2.515	3.127	3.591	3.819	3.790 3.582 3.100	2.221	1.615	1.054	.255	.000	0.000	0.000	31.709				
14	M	M	M	M	M	3.136	3.598	3.798	3.778 3.650 2.237	2.045	.668	.515	.197	.006	0.000	0.000	M				
15	.001	.041	.080	.155	.299	.588	.650	.679	.875 .458 1.065	.738	.844	.247	.051	.001	0.000	0.000	6.772				
16	.006	.097	.387	.871	1.582	2.533	3.133	2.958	3.091 3.605 2.548	2.345	1.778	.945	.255	.002	0.000	0.000	26.134				
17	.007	.318	1.029	1.812	2.528	3.131	3.578	3.803	3.785 3.569 3.133	2.502	1.765	.987	.251	.002	0.000	0.000	32.200				
18	.008	.312	1.020	1.732	2.378	3.072	3.422	3.725	3.692 2.210 1.533	1.088	.509	.570	.042	.001	0.000	0.000	25.355				
19	.014	.346	1.003	1.687	1.230	1.139	2.568	3.731	1.873 1.039 2.703	1.473	.485	.015	.008	0.000	0.000	0.000	19.314				
20	.002	.248	.961	1.719	2.399	3.015	3.597	3.477	2.455 2.136 .683	.623	.418	.195	.080	.000	0.000	0.000	22.009				
21	.002	.167	.220	.524	1.427	2.301	.507	.504	.943 .530 .195	.183	.233	.205	.055	.001	0.000	0.000	7.999				
22	.005	.017	.068	.208	.659	.948	.585	1.061	1.945 1.541 .459	.860	.489	.159	.028	.002	0.000	0.000	9.033				
23	.003	.135	.391	.529	.693	.883	.725	.640	.674 .507 .466	.544	.635	.544	.114	.004	0.000	0.000	7.489				
24	.005	.116	.335	.419	.602	.922	1.424	2.437	1.551 2.693 2.098	1.225	1.354	.537	.172	.001	0.000	0.000	15.892				
25	.005	.174	.748	1.059	2.262	2.382	1.821	3.395	1.129 .142 1.327	1.861	1.541	.092	.208	.007	0.000	0.000	18.155				
26	.020	.285	.542	1.251	2.748	M	M	M	M M M	M	M	M	M	M	M	M	M				
27	M	M	M	M	M	M	M	M	M M M	M	M	M	M	M	M	M	M				
28	M	M	M	M	M	M	M	M	M M M	M	M	M	M	M	M	M	M				
29	M	M	M	M	M	M	M	M	M M M	M	M	M	M	M	M	M	M				
30	M	M	M	M	M	M	M	M	M M M	M	M	M	M	M	M	M	M				
31	M	M	M	M	M	M	M	M	M M M	M	M	M	M	M	M	M	M				
AVERAGE VALUES		M	M	M	M	M	M	M	M M M	M	M	M	M	M	M	M	M				
STANDARD DEVIATION		M	M	M	M	M	M	M	M M M	M	M	M	M	M	M	M	M				

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATION

INSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 12.

JUNE 1976

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)
1	M	M	M	M	M	M	M	M	M	M	.452	2.038	1.281	.334	.010	.001	0.000	0.000	M
2	.028	.449	1.158	1.839	2.516	3.169	3.651	.841	2.844	3.168	1.548	1.217	1.583	1.106	.463	.018	0.000	0.000	25.398
3	.024	.382	1.073	1.801	2.504	3.098	3.570	3.790	2.842	2.707	2.898	1.354	1.260	1.080	.221	.028	0.000	0.000	28.633
4	.023	.385	1.082	1.805	2.476	3.019	3.494	3.740	3.682	1.632	1.669	.555	M	M	M	M	M	M	M
5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
7	M	M	M	M	M	2.868	3.315	3.587	3.355	2.933	2.990	1.572	.661	.613	.508	.009	0.000	0.000	M
8	.020	.376	1.002	1.707	2.369	2.929	3.319	3.598	2.262	1.955	2.246	1.977	.926	.022	.067	.001	0.000	0.000	24.776
9	.008	.310	1.285	1.244	2.326	1.328	.981	1.080	M	M	M	2.007	.759	.607	.286	.008	0.000	0.000	M
10	.020	.366	1.009	1.742	1.440	1.855	3.475	3.517	3.572	1.065	.906	2.008	1.468	.989	.156	.002	0.000	0.000	23.599
11	.023	.374	1.029	1.762	2.437	3.006	3.439	3.607	3.124	3.092	2.960	2.313	2.006	.849	.231	.015	0.000	0.000	30.268
12	.006	.080	.427	.734	2.220	3.114	3.499	3.666	3.586	3.523	3.151	2.212	.794	.379	.225	.018	0.000	0.000	27.631
13	.006	.200	.973	1.902	2.153	2.627	2.927	3.283	2.771	1.437	2.076	2.201	1.642	1.307	.572	.025	0.000	0.000	26.101
14	.009	.197	1.144	1.852	2.539	3.128	3.569	3.792	3.761	3.034	3.141	1.494	1.088	.478	.149	.012	0.000	0.000	29.387
15	.007	.210	1.210	1.648	2.472	3.011	3.255	3.677	3.622	M	M	2.392	1.795	1.087	.275	.009	0.000	0.000	M
16	.014	.131	.392	.688	.994	1.865	1.444	2.700	2.536	1.248	1.134	.550	.762	1.342	.521	.013	0.000	0.000	16.334
17	0.000	.014	.102	.239	.255	.286	.462	1.278	1.422	1.007	2.313	.704	.300	.256	.127	.001	0.000	0.000	8.766
18	.000	.059	.224	.323	.882	.945	.494	.792	.895	.358	1.005	.694	1.132	1.072	.231	.025	0.000	0.000	9.131
19	.024	.427	1.074	1.812	2.447	3.059	3.451	3.703	3.567	3.287	3.069	2.483	1.752	1.080	.421	.014	0.000	0.000	31.672
20	.043	.297	1.011	1.788	2.240	3.015	3.379	3.625	3.446	3.267	3.057	2.183	1.075	.611	.275	.022	0.000	0.000	29.332
21	.018	.393	1.067	1.791	2.399	2.988	3.381	3.619	3.510	2.519	2.265	2.345	1.540	1.132	.384	.021	0.000	0.000	29.372
22	.016	.334	.997	1.669	2.297	2.866	3.295	3.480	3.103	2.873	2.630	.222	.379	.167	.374	.013	0.000	0.000	24.716
23	.008	.365	.854	.678	1.974	2.260	.429	.675	.802	1.901	M	M	.506	.432	.198	.003	0.000	0.000	M
24	.023	.402	1.060	1.772	2.406	3.119	3.500	2.762	2.989	2.444	2.388	2.704	1.757	1.071	.459	.012	0.000	0.000	28.868
25	.022	.397	1.040	1.759	2.397	3.018	3.373	3.656	2.947	2.890	1.762	1.385	1.583	1.033	.416	.010	0.000	0.000	27.718
26	.009	.294	1.051	1.739	2.379	3.006	3.350	3.606	3.394	2.386	2.698	2.444	1.823	1.138	.444	.025	0.000	0.000	29.790
27	.019	.374	1.004	1.725	2.340	2.962	3.334	3.686	3.363	2.993	2.681	2.482	1.575	1.133	.408	.019	0.000	0.000	30.097
28	.016	.361	1.010	1.725	2.342	2.955	3.326	3.579	3.485	3.305	2.108	1.091	.686	.779	.455	.016	0.000	0.000	27.240
29	.017	.355	.980	1.688	2.282	2.831	3.279	3.363	2.857	2.438	1.346	.980	.776	.323	.236	.022	0.000	0.000	23.773
30	.009	.178	.671	.659	1.649	2.686	3.199	3.672	1.831	.788	.376	.470	.430	.402	.206	.014	0.000	0.000	17.250
AVERAGE	.016	.297	.920	1.465	2.107	2.630	2.896	3.052	2.906	2.330	2.113	1.625	1.161	.771	.308	.014	0.000	0.000	M
VALUES																			
STANDARD	.010	.122	.302	.531	.582	.740	1.060	1.065	.833	.912	.864	.760	.509	.386	.148	.008	0.000	0.000	M
DEVIATION																			

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 13.

JULY 1976

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	.005	.340	.878	1.619	2.174	2.043	2.023	1.795	2.068	1.648	.092	.508	.618	.572	.170	.025	0.000	0.000	16.580
2	.019	.321	.867	1.676	2.311	2.613	2.938	1.914	.519	.564	1.131	.764	.594	.422	.148	.014	0.000	0.000	16.816
3	.012	.307	.922	1.626	2.257	2.834	3.241	3.494	3.454	3.107	2.969	2.425	1.576	.951	.376	.022	0.000	0.000	29.573
4	.011	.236	.842	1.605	2.240	2.861	3.269	3.538	3.531	3.315	3.008	1.215	.153	.850	.366	.061	0.000	0.000	27.101
5	.007	.236	.893	1.472	2.291	2.896	3.326	2.233	2.458	2.086	.223	.176	1.126	.941	.411	.059	0.000	0.000	20.832
6	.004	.262	.920	1.607	2.234	2.832	3.262	3.504	3.193	3.070	2.503	2.405	.260	.132	.317	.049	0.000	0.000	26.552
7	.010	.210	.380	1.619	1.937	2.921	2.674	.977	.552	2.113	2.679	.420	.061	.631	.124	.063	0.000	0.000	17.371
8	.009	.298	.926	1.607	2.200	2.855	3.326	3.580	2.006	2.586	3.110	1.849	.465	.449	.155	.005	0.000	0.000	25.426
9	.006	.301	.908	1.577	2.211	2.857	3.068	2.583	M	.963	.861	.688	.402	.160	.065	.027	0.000	0.000	M
10	.010	.291	.899	1.592	2.228	2.775	3.274	3.192	1.207	1.340	1.375	1.889	1.120	.642	.254	.019	0.000	0.000	22.107
11	.008	.287	.894	1.600	2.264	2.825	3.291	3.554	3.566	3.354	2.944	2.436	1.769	1.095	.404	.007	0.000	0.000	30.300
12	.007	.276	.884	1.590	2.239	2.784	3.209	3.482	3.434	1.533	1.101	.909	.891	.717	.100	.003	0.000	0.000	23.161
13	.002	.065	.158	.697	1.095	.995	.824	1.753	2.755	1.261	.513	.950	1.322	1.017	.391	.020	0.000	0.000	13.817
14	.005	.276	.888	1.619	2.298	2.867	3.301	3.533	3.607	3.190	1.752	1.678	1.684	.571	.260	.015	0.000	0.000	27.543
15	.001	.295	.282	.564	.753	2.517	1.824	1.671	2.550	3.366	3.079	2.763	1.727	.957	.386	.020	0.000	0.000	22.758
16	.002	.262	.870	1.575	2.262	2.825	3.287	3.530	3.238	2.912	1.864	1.953	.788	.780	.260	.007	0.000	0.000	26.415
17	.002	.245	.830	1.524	2.163	2.155	3.207	3.176	3.533	2.884	2.911	.858	.068	.282	.172	.009	0.000	0.000	24.019
18	.000	.080	.438	.414	1.039	1.089	1.511	2.319	3.185	1.949	.504	.945	.265	.158	.165	.002	0.000	0.000	14.064
19	.001	.054	.262	.562	1.066	1.941	1.710	1.648	1.690	2.010	.506	.389	.174	.108	.139	.013	0.000	0.000	12.273
20	.000	.185	.568	.646	.584	.550	.508	1.094	2.486	1.707	1.221	.203	.523	.890	.216	.002	0.000	0.000	11.385
21	.001	.206	.829	1.453	1.797	1.776	1.701	1.939	1.247	1.963	1.810	.507	.485	.886	.355	.004	0.000	0.000	16.959
22	.000	.220	.816	1.528	2.232	2.779	3.189	3.654	2.138	1.039	1.908	2.424	1.201	.656	.226	.005	0.000	0.000	24.015
23	0.000	.205	.811	1.525	2.226	2.478	3.206	3.467	3.527	3.284	2.114	2.299	1.694	1.107	.355	.011	0.000	0.000	28.309
24	.001	.218	.705	1.470	2.158	2.730	3.199	3.467	3.436	3.241	2.767	2.290	1.669	.970	.200	.003	0.000	0.000	28.524
25	.001	.204	.802	1.541	1.364	1.935	1.356	1.467	2.663	.994	.271	.266	.786	.514	.227	.004	0.000	0.000	14.396
26	0.000	.043	.122	.508	2.403	2.860	3.020	3.513	2.396	2.631	2.045	1.077	.220	.712	.153	.002	0.000	0.000	21.706
27	.001	.182	.791	1.072	1.660	2.802	3.346	2.854	3.637	2.556	2.435	2.599	1.517	.916	.386	.010	0.000	0.000	26.764
28	.001	.086	.249	.545	1.959	2.711	3.119	3.414	3.443	3.286	2.900	1.917	.725	.428	.237	.004	0.000	0.000	25.021
29	.001	.191	.798	1.487	2.186	2.752	1.773	3.652	2.484	1.314	1.458	.776	.460	.416	.075	.000	0.000	0.000	19.821
30	0.000	.161	.760	1.226	1.994	2.111	3.130	2.206	.994	.860	.674	1.754	.698	.581	.091	.000	0.000	0.000	17.240
31	.002	.041	.326	.580	1.788	2.236	2.108	2.239	2.469	2.740	2.124	.692	.568	.100	.012	0.000	0.000	0.000	18.025

AVERAGE	.004	.212	.694	1.281	1.923	2.426	2.652	2.724	2.582	2.222	1.769	1.356	.826	.633	.232	.016	0.000	0.000	21.629
VALUES																			
STANDARD	.005	.087	.265	.447	.509	.619	.843	.877	.951	.895	.988	.835	.560	.309	.116	.018	0.000	0.000	5.564
DEVIATION																			

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 14.

AUGUST 1976

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. STD. TIME 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	3.113	.137	.159	1.844	.681	M	1.184	0.000	0.000	M
4	0.000	.173	.449	.546	M	2.671	1.851	3.400	3.042	1.198	1.823	2.094	.757	.968	M	1.196	0.000	0.000	M
5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
7	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
9	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
10	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
AVERAGE VALUES																			
STANDARD DEVIATION																			
M																			
M																			

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 15.

SEPTEMBER 1976

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
4	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
7	M	M	M	M	.924	1.883	1.541	.164	.199	2.044	.809	1.128	.407	.079	.005	0.000	0.000	0.000	M
8	0.000	.004	.039	.162	.330	.284	.378	.540	.521	.323	.219	.184	.147	.052	.013	0.000	0.000	0.000	3.195
9	0.000	.028	.267	1.168	1.916	2.505	2.942	3.165	3.159	2.920	2.397	1.815	1.082	.353	.006	0.000	0.000	0.000	23.723
10	0.000	.030	.383	.910	1.749	2.354	2.862	3.015	2.758	2.535	1.381	1.864	.383	.146	.002	0.000	0.000	0.000	20.372
11	0.000	.018	.155	.608	1.444	1.436	2.154	2.904	2.752	2.260	1.901	.974	.887	.206	.002	0.000	0.000	0.000	17.794
12	0.000	.013	.457	1.143	1.781	2.253	2.790	1.637	.270	.738	.539	.418	.470	.162	.002	0.000	0.000	0.000	12.673
13	0.000	.013	.359	.969	1.106	.969	1.417	2.925	3.007	2.193	1.651	.672	.378	.186	.001	0.000	0.000	0.000	15.846
14	0.000	.019	.053	.350	.722	1.660	1.079	1.654	.266	.171	.517	.829	1.238	.271	.004	0.000	0.000	0.000	9.032
15	0.000	.016	.252	.720	1.517	1.915	2.139	1.887	.708	.498	.151	.113	.167	.199	.003	0.000	0.000	0.000	10.285
16	0.000	.010	.336	1.007	1.714	2.295	2.678	2.945	2.897	2.560	2.165	1.552	.604	.148	.003	0.000	0.000	0.000	20.913
17	0.000	.008	.328	.764	1.090	2.194	2.746	2.990	3.005	2.841	1.765	.661	.316	.058	.003	0.000	0.000	0.000	18.769
18	0.000	.005	.327	1.051	1.750	2.277	2.780	2.934	2.916	2.658	1.997	.679	.174	.133	.002	0.000	0.000	0.000	19.683
19	0.000	.004	.024	.030	.064	.498	.720	1.197	.335	.288	.313	.150	.055	.018	.002	0.000	0.000	0.000	3.694
20	0.000	.005	.048	.203	.317	.444	1.007	1.761	1.915	2.271	1.775	.828	.505	.047	.001	0.000	0.000	0.000	11.128
21	0.000	0.000	.304	.975	1.702	2.322	2.752	2.931	2.919	2.661	2.180	1.560	.834	.162	0.000	0.000	0.000	0.000	21.303
22	0.000	0.000	.126	.468	.855	.843	1.002	1.417	1.838	1.924	1.228	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	1.958	.604	.341	.109	0.000	0.000	0.000	0.000	M
24	0.000	0.000	.057	.149	.294	.483	1.089	.308	.357	.971	.661	.419	.308	.096	0.000	0.000	0.000	0.000	5.193
25	0.000	0.000	.095	.447	.969	1.685	1.603	1.300	1.427	.327	.971	.613	.321	.081	0.000	0.000	0.000	0.000	9.840
26	0.000	0.000	.111	.271	.394	1.300	2.297	1.204	1.981	1.951	.565	.153	.043	.007	0.000	0.000	0.000	0.000	10.275
27	0.000	0.000	.033	.117	.291	.552	.637	.420	.295	.676	.494	.635	.152	.031	0.000	0.000	0.000	0.000	4.333
28	0.000	0.000	.176	.634	.865	1.140	2.515	2.906	2.854	2.559	2.122	1.328	.542	.113	0.000	0.000	0.000	0.000	17.755
29	0.000	0.000	.243	.910	1.632	2.244	2.654	2.826	2.808	2.545	2.072	1.445	.716	.078	0.000	0.000	0.000	0.000	20.172
30	0.000	0.000	.233	.890	1.598	2.228	2.650	2.850	2.802	2.501	2.011	1.380	.575	.064	0.000	0.000	0.000	0.000	19.782
AVERAGE	M	M	M	M	1.088	1.555	1.932	2.003	1.826	1.757	1.330	.970	.463	.122	.002	0.000	0.000	0.000	M
VALUES	M	M	M	M	.600	.754	.855	1.025	1.171	.983	.753	.543	.317	.044	.003	0.000	0.000	0.000	M
STANDARD																			
DEVIATION																			

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 16.

OCTOBER 1976

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	0.000	0.000	.216	.859	1.558	2.171	2.596	2.788	2.756	2.287	1.656	1.011	.535	.053	0.000	0.000	0.000	0.000	18.486
2	0.000	0.000	.093	.344	1.127	1.366	2.436	2.047	1.405	1.673	1.884	.799	.515	.026	0.000	0.000	0.000	0.000	13.713
3	0.000	0.000	.196	.834	1.527	2.219	1.642	.551	1.185	.928	.538	1.257	.435	.039	0.000	0.000	0.000	0.000	11.352
4	0.000	0.000	.087	.544	.783	1.539	2.642	2.056	1.509	.996	.765	.595	.353	.036	0.000	0.000	0.000	0.000	11.906
5	0.000	0.000	.031	.301	1.022	1.948	1.541	1.651	2.153	1.998	1.876	1.178	.197	.021	0.000	0.000	0.000	0.000	M
6	0.000	0.000	.058	.335	.244	.350	1.271	1.744	2.711	2.409	.548	.471	.048	.011	0.000	0.000	0.000	0.000	10.200
7	0.000	0.000	.216	.836	1.635	2.203	2.602	2.745	2.661	2.425	1.810	1.338	.502	.007	0.000	0.000	0.000	0.000	18.979
8	M	M	M	M	M	M	M	M	M	M	M	1.139	.562	0.000	0.000	0.000	0.000	0.000	M
9	0.000	0.000	.159	.773	1.477	2.021	2.467	2.665	2.617	2.361	1.830	1.174	.523	.022	0.000	0.000	0.000	0.000	18.090
10	0.000	0.000	.102	.812	1.655	2.183	2.427	2.650	2.567	2.328	1.817	1.129	.468	0.000	0.000	0.000	0.000	0.000	18.139
11	0.000	0.000	.030	.285	.583	.621	.818	.405	.350	.305	.377	.383	.088	.025	0.000	0.000	0.000	0.000	4.262
12	0.000	0.000	.073	.529	1.538	1.866	2.318	2.536	2.476	2.230	1.738	1.064	.311	.034	0.000	0.000	0.000	0.000	16.712
13	0.000	0.000	.104	.694	1.362	M	M	M	M	M	M	1.122	.367	0.000	0.000	0.000	0.000	0.000	M
14	0.000	0.000	.145	.668	1.553	1.931	2.457	2.622	2.596	2.138	1.652	1.285	.367	.000	0.000	0.000	0.000	0.000	17.412
15	0.000	0.000	.129	.498	1.540	2.088	2.444	2.550	2.553	2.027	1.447	.666	.257	0.000	0.000	0.000	0.000	0.000	16.198
16	0.000	0.000	.091	.666	1.513	1.978	2.398	2.557	2.509	2.052	1.756	1.036	.305	.002	0.000	0.000	0.000	0.000	16.862
17	0.000	0.000	.083	.436	1.102	2.026	2.394	1.479	2.515	2.263	.829	.341	.007	0.000	0.000	0.000	0.000	0.000	13.474
18	0.000	0.000	.258	.836	1.300	1.660	2.112	1.363	1.393	1.465	1.084	.753	.243	0.000	0.000	0.000	0.000	0.000	12.465
19	0.000	0.000	.252	1.018	1.784	1.941	2.243	2.570	2.521	2.054	1.780	1.016	.312	0.000	0.000	0.000	0.000	0.000	17.489
20	0.000	0.000	.068	.758	1.491	1.812	2.318	2.498	2.447	M	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	M
21	M	M	M	M	M	M	M	M	M	M	1.509	1.125	.213	0.000	0.000	0.000	0.000	0.000	M
22	0.000	0.000	.047	.526	.663	1.697	2.481	2.648	2.499	2.069	1.350	.350	.112	.002	0.000	0.000	0.000	0.000	14.445
23	0.000	0.000	.061	.572	1.237	1.836	2.238	2.418	2.312	2.086	1.287	1.088	.217	0.000	0.000	0.000	0.000	0.000	15.351
24	0.000	0.000	.058	.363	1.050	1.733	2.099	2.260	2.308	1.907	1.391	.881	.140	0.000	0.000	0.000	0.000	0.000	14.191
25	0.000	0.000	.004	.143	.293	1.112	2.236	2.366	2.272	2.094	1.244	.301	.068	0.000	0.000	0.000	0.000	0.000	12.114
26	0.000	0.000	.006	M	.251	.248	.253	.136	.154	.234	.249	.175	.030	0.000	0.000	0.000	0.000	0.000	M
27	0.000	0.000	.040	.312	1.075	.881	1.639	1.955	1.134	1.995	1.188	.815	.122	0.000	0.000	0.000	0.000	0.000	11.156
28	0.000	0.000	.016	.555	1.234	1.841	2.207	2.425	2.358	2.051	1.562	.961	.156	0.000	0.000	0.000	0.000	0.000	15.366
29	0.000	0.000	.012	.484	1.170	1.750	2.134	2.288	2.238	1.927	1.479	.881	.118	0.000	0.000	0.000	0.000	0.000	14.481
30	0.000	0.000	.015	.437	.456	.845	1.074	1.511	1.973	1.648	1.698	1.094	.235	0.000	0.000	0.000	0.000	0.000	10.986
31	0.000	0.000	.020	.443	1.124	1.740	2.097	2.290	2.196	1.794	1.452	.831	.122	0.000	0.000	0.000	0.000	0.000	14.110

AVERAGE VALUES STANDARD DEVIATION	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 17.

NOVEMBER 1976

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. STD. 12-13	TIME 13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	0.000	0.000	0.000	.369	1.078	1.670	2.070	2.266	2.003	1.628	1.393	.725	.183	0.000	0.000	0.000	0.000	0.000	13.384
2	0.000	0.000	0.000	.421	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
4	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
7	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	M	M	1.098	.679	.073	0.000	0.000	0.000	0.000	0.000	M
9	0.000	0.000	0.000	.332	.970	1.546	1.886	2.074	2.036	1.721	.993	.266	.042	0.000	0.000	0.000	0.000	0.000	11.868
10	0.000	0.000	0.000	.107	.462	.541	.848	1.522	1.012	.747	.562	.216	.013	0.000	0.000	0.000	0.000	0.000	6.031
11	0.000	0.000	0.000	.032	.142	.147	.152	.163	.158	.138	.084	.051	.004	0.000	0.000	0.000	0.000	0.000	1.072
12	0.000	0.000	0.000	.032	.138	.343	.397	.312	.221	.185	.113	.044	.008	0.000	0.000	0.000	0.000	0.000	1.793
13	0.000	0.000	0.000	.127	.526	.613	.750	.896	.900	.623	.375	.149	.035	0.000	0.000	0.000	0.000	0.000	4.994
14	0.000	0.000	0.000	.429	1.160	1.911	1.851	.786	1.514	.768	.748	.327	.068	0.000	0.000	0.000	0.000	0.000	9.562
15	0.000	0.000	0.000	.285	.904	1.460	1.858	2.042	2.012	1.718	1.221	.592	.035	0.000	0.000	0.000	0.000	0.000	12.126
16	0.000	0.000	0.000	.252	.836	1.362	1.690	2.010	1.835	1.660	1.165	.571	.028	0.000	0.000	0.000	0.000	0.000	11.410
17	0.000	0.000	0.000	.255	.782	1.479	1.751	1.926	1.960	1.702	1.128	.509	.024	0.000	0.000	0.000	0.000	0.000	11.518
18	0.000	0.000	0.000	.180	.876	1.590	.757	.549	.505	.317	.216	.179	.046	0.000	0.000	0.000	0.000	0.000	5.215
19	0.000	0.000	0.000	.220	.782	1.304	1.688	1.851	1.817	1.664	.736	.372	.021	0.000	0.000	0.000	0.000	0.000	10.455
20	0.000	0.000	0.000	.212	.773	1.308	1.487	1.570	1.635	.931	.591	.091	.007	0.000	0.000	0.000	0.000	0.000	8.606
21	0.000	0.000	0.000	.209	.768	1.308	1.708	1.906	1.846	1.570	1.116	.528	.025	0.000	0.000	0.000	0.000	0.000	10.982
22	0.000	0.000	0.000	.118	.358	.477	M	M	M	M	.163	.115	.019	0.000	0.000	0.000	0.000	0.000	M
23	M	M	M	M	M	1.433	1.390	1.950	.949	1.283	.965	.300	.021	0.000	0.000	0.000	0.000	0.000	M
24	M	M	M	M	M	1.541	1.827	2.129	1.604	1.547	1.184	.364	.019	0.000	0.000	0.000	0.000	0.000	M
25	M	M	M	M	M	.983	1.763	1.861	1.794	1.572	.984	.373	.016	0.000	0.000	0.000	0.000	0.000	M
26	M	M	M	M	M	.326	.907	1.215	1.361	.985	.656	.402	.038	0.000	0.000	0.000	0.000	0.000	M
27	M	M	M	M	M	1.307	1.686	1.889	1.663	1.033	.529	.160	.017	0.000	0.000	0.000	0.000	0.000	M
28	M	M	M	M	M	.910	1.285	1.400	1.334	1.181	.973	.370	.058	0.000	0.000	0.000	0.000	0.000	M
29	M	M	M	M	M	.577	1.239	.948	.771	.875	.832	.506	.043	0.000	0.000	0.000	0.000	0.000	M
30	M	M	M	M	M	.626	1.561	.637	.693	1.203	.742	.286	.006	0.000	0.000	0.000	0.000	0.000	M

AVERAGE	M	M	M	M	M	1.077	M	M	M	M	.774	.341	.035	0.000	0.000	0.000	0.000	0.000	M
VALUES	M	M	M	M	M	.513	M	M	M	M	.381	.196	.037	0.000	0.000	0.000	0.000	0.000	M
STANDARD																			
DEVIATION																			

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 18.

DECEMBER 1976

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	MTN. STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	M	M	M	M	M	1.259	1.683	1.553	1.026	.787	1.000	.273	.034	0.000	0.000	0.000	0.000	0.000	M
2	M	M	M	M	M	1.186	1.567	1.896	2.097	1.025	.676	.390	.049	0.000	0.000	0.000	0.000	0.000	M
3	M	M	M	M	M	.591	1.117	1.549	1.725	1.492	.983	.449	.021	0.000	0.000	0.000	0.000	0.000	M
4	M	M	M	M	M	1.649	1.679	1.498	1.180	1.167	.291	.272	.019	0.000	0.000	0.000	0.000	0.000	M
5	M	M	M	M	M	.819	1.038	1.826	1.763	1.492	1.051	.210	.022	0.000	0.000	0.000	0.000	0.000	M
6	M	M	M	M	M	1.148	1.543	1.736	1.741	1.468	1.046	.475	.030	0.000	0.000	0.000	0.000	0.000	M
7	M	M	M	M	M	1.108	1.385	1.666	1.766	1.479	.312	.359	.026	0.000	0.000	0.000	0.000	0.000	M
8	M	M	M	M	M	1.172	1.527	1.733	1.698	1.112	.821	.610	.028	0.000	0.000	0.000	0.000	0.000	M
9	M	M	M	M	M	.929	1.416	1.524	1.093	1.030	.530	.421	.043	0.000	0.000	0.000	0.000	0.000	M
10	M	M	M	M	M	1.286	1.520	1.723	1.707	1.469	1.044	.430	.034	0.000	0.000	0.000	0.000	0.000	M
11	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	1.221	1.530	1.707	1.718	1.486	1.054	.400	.013	0.000	0.000	0.000	0.000	0.000	M
14	0.000	0.000	0.000	.063	.384	.685	.927	1.274	1.793	1.435	1.024	.457	.023	0.000	0.000	0.000	0.000	0.000	8.066
15	0.000	0.000	0.000	.035	.632	1.106	1.500	1.312	1.699	1.459	1.025	.449	.017	0.000	0.000	0.000	0.000	0.000	9.234
16	0.000	0.000	0.000	.066	.513	1.184	1.514	1.509	1.367	1.159	.861	.206	.031	0.000	0.000	0.000	0.000	0.000	8.411
17	0.000	0.000	0.000	.069	.526	1.045	1.423	1.654	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	.632	1.071	1.483	1.698	1.673	1.456	1.043	.497	.021	0.000	0.000	0.000	0.000	0.000	M
21	0.000	0.000	0.000	.062	.533	1.086	1.516	1.723	1.855	1.222	1.111	.532	.025	0.000	0.000	0.000	0.000	0.000	9.666
22	0.000	0.000	0.000	.042	.279	1.053	1.486	1.733	1.809	1.676	1.089	.478	.014	0.000	0.000	0.000	0.000	0.000	9.660
23	0.000	0.000	0.000	.054	.243	.436	.701	.532	.601	1.476	1.438	.584	.017	0.000	0.000	0.000	0.000	0.000	6.082
24	0.000	0.000	0.000	.024	.437	.992	.910	.442	.224	.144	.117	.020	.005	0.000	0.000	0.000	0.000	0.000	3.317
25	0.000	0.000	0.000	.102	.558	1.172	1.191	.929	1.544	1.874	1.118	.576	.044	0.000	0.000	0.000	0.000	0.000	9.110
26	0.000	0.000	0.000	.077	.493	.844	1.053	1.673	1.581	.834	.443	.533	.035	0.000	0.000	0.000	0.000	0.000	7.566
27	0.000	0.000	0.000	.045	.498	1.052	1.454	1.749	1.409	1.043	1.088	.573	.026	0.000	0.000	0.000	0.000	0.000	8.938
28	0.000	0.000	0.000	.051	.492	1.051	1.465	1.684	1.687	1.497	1.107	.569	.029	0.000	0.000	0.000	0.000	0.000	9.632
29	0.000	0.000	0.000	.046	.455	.979	1.478	1.623	1.268	.928	1.303	.732	.058	0.000	0.000	0.000	0.000	0.000	8.869
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
AVERAGE VALUES	M	M	M	M	M	1.045	1.364	1.518	1.501	1.259	.899	.437	.028	0.000	0.000	0.000	0.000	0.000	M
STANDARD DEVIATION	M	M	M	M	M	.242	.259	.369	.425	.362	.333	.156	.012	0.000	0.000	0.000	0.000	0.000	M

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 19.

JANUARY 1977

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	1.406	1.443	1.465	.774	.276	.043	0.000	0.000	0.000	0.000	0.000	M
4	0.000	0.000	0.000	.015	.164	.257	.530	.552	.481	.545	.686	.290	.075	0.000	0.000	0.000	0.000	0.000	3.594
5	0.000	0.000	0.000	.037	.443	1.005	1.279	1.216	1.503	.755	.449	.305	.056	0.000	0.000	0.000	0.000	0.000	7.046
6	0.000	0.000	0.000	.115	.453	.730	.841	1.245	1.538	1.464	.805	.668	.086	0.000	0.000	0.000	0.000	0.000	7.945
7	0.000	0.000	0.000	.041	.474	1.036	1.449	1.727	1.801	1.821	1.072	.281	.045	0.000	0.000	0.000	0.000	0.000	9.748
8	0.000	0.000	0.000	.023	.273	.687	.947	1.129	1.201	1.052	.646	.287	.057	0.000	0.000	0.000	0.000	0.000	6.304
9	0.000	0.000	0.000	.131	.777	1.333	1.708	1.875	1.876	1.712	1.283	.707	.093	0.000	0.000	0.000	0.000	0.000	11.495
10	0.000	0.000	0.000	.057	.467	1.137	1.773	1.467	1.120	.783	M	.720	.127	0.000	0.000	0.000	0.000	0.000	M
11	0.000	0.000	0.000	.052	.515	1.102	1.550	1.789	1.858	1.664	1.255	.686	.092	0.000	0.000	0.000	0.000	0.000	10.562
12	0.000	0.000	0.000	.042	.203	.456	.739	.812	.772	.632	.424	.253	.031	0.000	0.000	0.000	0.000	0.000	4.365
13	0.000	0.000	0.000	.051	.507	1.072	1.545	1.820	1.855	1.689	1.074	.316	.065	0.000	0.000	0.000	0.000	0.000	9.995
14	0.000	0.000	0.000	.059	.539	1.096	1.560	1.805	1.349	.976	.700	.720	.087	0.000	0.000	0.000	0.000	0.000	8.893
15	0.000	0.000	0.000	.022	.206	.530	1.124	.954	.978	1.214	.730	.280	.034	0.000	0.000	0.000	0.000	0.000	6.071
16	0.000	0.000	0.000	.098	.499	1.219	1.705	2.232	1.930	1.282	.563	.634	.190	0.000	0.000	0.000	0.000	0.000	10.352
17	0.000	0.000	0.000	.027	.399	.613	1.474	1.412	1.596	1.753	1.338	.934	.212	0.000	0.000	0.000	0.000	0.000	9.759
18	0.000	0.000	0.000	.044	.458	.674	.907	.606	.648	1.046	.646	.604	.191	0.000	0.000	0.000	0.000	0.000	5.824
19	0.000	0.000	0.000	.033	.599	1.154	1.602	1.883	1.941	1.692	1.223	.753	.151	0.000	0.000	0.000	0.000	0.000	11.030
20	0.000	0.000	0.000	.024	.560	1.152	1.619	1.864	1.773	1.723	1.371	.823	.138	0.000	0.000	0.000	0.000	0.000	11.045
21	0.000	0.000	0.000	.066	.492	1.050	1.292	1.677	1.580	1.207	1.013	.532	.119	0.000	0.000	0.000	0.000	0.000	9.028
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	1.331	1.690	1.981	1.618	1.761	1.289	.890	.263	0.000	0.000	0.000	0.000	0.000	M
25	0.000	0.000	0.000	.084	.621	1.230	1.725	2.008	2.064	1.881	1.472	.924	.231	0.000	0.000	0.000	0.000	0.000	12.241
26	0.000	0.000	0.000	.071	.406	1.235	1.739	2.022	1.364	.731	.462	.231	.190	0.000	0.000	0.000	0.000	0.000	8.451
27	0.000	0.000	0.000	.088	.609	1.219	1.734	1.997	2.062	1.897	1.535	.941	.256	0.000	0.000	0.000	0.000	0.000	12.337
28	0.000	0.000	0.000	.062	.471	1.321	1.757	1.956	2.116	1.998	1.567	1.030	.271	0.000	0.000	0.000	0.000	0.000	12.550
29	0.000	0.000	0.000	.104	.639	1.243	1.746	2.045	2.133	1.955	1.594	.541	.213	0.000	0.000	0.000	0.000	0.000	12.212
30	0.000	0.000	0.000	.207	1.020	1.480	1.767	2.038	2.106	1.958	1.574	.982	.318	0.000	0.000	0.000	0.000	0.000	13.449
31	0.000	0.000	0.000	.119	.703	1.356	1.926	1.995	1.970	2.147	1.659	1.170	.275	0.000	0.000	0.000	0.000	0.000	13.319

AVERAGE	0.000	0.000	0.000	.067	.500	1.028	1.451	1.612	1.581	1.437	1.046	.621	.145	0.000	0.000	0.000	0.000	0.000	9.484
VALUES																			
STANDARD	0.000	0.000	0.000	.044	.185	.317	.377	.472	.466	.478	.407	.286	.087	0.000	0.000	0.000	0.000	0.000	2.799
DEVIATION																			

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 20.

FEBRUARY 1977

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLUMADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SUM-DAY)
1	0.000	0.000	0.000	.030	.309	.671	1.187	1.234	.819	.777	.759	.750	.214	0.000	0.000	0.000	0.000	0.000	6.752
2	0.000	0.000	0.000	.038	.355	1.012	1.480	1.187	1.656	1.964	1.446	.946	.199	0.000	0.000	0.000	0.000	0.000	10.284
3	0.000	0.000	0.000	.150	.707	1.315	1.805	2.093	2.177	2.017	1.636	1.072	.316	0.000	0.000	0.000	0.000	0.000	13.290
4	0.000	0.000	0.000	.213	.761	1.330	1.840	2.194	2.226	2.038	1.623	1.042	.313	0.000	0.000	0.000	0.000	0.000	13.580
5	0.000	0.000	.001	.141	.428	.488	.942	.977	1.275	1.283	.918	.635	.188	.008	0.000	0.000	0.000	0.000	7.285
6	0.000	0.000	.001	.146	.733	1.356	1.853	2.177	2.210	2.133	1.365	.613	.295	.020	0.000	0.000	0.000	0.000	12.902
7	0.000	0.000	0.000	.165	.793	1.408	1.902	2.207	2.291	2.067	1.747	1.049	.423	.011	0.000	0.000	0.000	0.000	14.104
8	0.000	0.000	0.000	.161	.784	1.430	1.935	2.239	2.322	2.150	1.748	1.117	.386	.008	0.000	0.000	0.000	0.000	14.281
9	0.000	0.000	0.000	.177	.801	1.426	1.951	2.270	2.328	2.147	1.772	1.137	.411	.013	0.000	0.000	0.000	0.000	14.431
10	0.000	0.000	.000	.184	.788	1.430	1.951	2.222	2.284	2.110	1.720	1.139	.442	.015	0.000	0.000	0.000	0.000	14.286
11	0.000	0.000	.000	.312	.418	.792	1.524	1.244	1.733	1.734	1.667	1.064	.434	.023	0.000	0.000	0.000	0.000	10.945
12	0.000	0.000	.002	.153	.347	.568	.674	.786	2.327	1.899	1.030	.723	.313	.033	0.000	0.000	0.000	0.000	8.853
13	0.000	0.000	.000	.134	.470	1.010	.693	2.283	2.513	2.419	1.523	1.280	.683	.031	0.000	0.000	0.000	0.000	13.039
14	0.000	0.000	.001	.125	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
AVERAGE VALUES STANDARD DEVIATION	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 21.

MARCH 1977

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	.278	.647	.770	.910	.698	.361	.185	.057	0.000	0.000	0.000	0.000	M
3	0.000	0.000	.021	.225	.715	1.549	2.235	2.257	2.678	2.356	1.919	1.165	.219	.038	0.000	0.000	0.000	0.000	15.377
4	0.000	0.000	.063	.581	1.317	1.942	2.306	2.788	2.894	2.726	2.269	1.651	.848	.063	0.000	0.000	0.000	0.000	19.449
5	0.000	0.000	.063	.407	.939	1.685	2.455	2.109	1.410	1.914	1.154	1.586	.690	.167	0.000	0.000	0.000	0.000	14.579
6	0.000	0.000	.040	.522	1.258	1.937	2.489	2.786	2.816	2.648	2.253	1.602	.829	.180	0.000	0.000	0.000	0.000	19.362
7	0.000	0.000	.072	.571	1.359	1.864	2.278	1.252	1.380	1.784	1.979	1.380	1.273	.184	0.000	0.000	0.000	0.000	15.376
8	0.000	0.000	.093	.215	.852	1.918	2.531	2.810	2.804	2.479	1.516	1.039	1.192	.316	0.000	0.000	0.000	0.000	17.764
9	0.000	0.000	.087	.657	1.348	1.996	2.318	1.218	1.052	1.445	1.089	2.063	1.251	.303	0.000	0.000	0.000	0.000	14.828
10	M	M	M	M	M	M	M	M	M	M	M	.126	.078	.015	0.000	0.000	0.000	0.000	M
11	0.000	0.000	.035	.552	1.099	.834	.787	1.046	.846	.569	.622	.550	.250	.119	0.000	0.000	0.000	0.000	7.308
12	0.000	0.000	.061	.685	1.495	2.184	2.716	2.988	3.054	2.859	2.455	1.802	1.031	.220	0.000	0.000	0.000	0.000	21.551
13	0.000	0.000	.103	.816	1.500	2.205	2.766	2.948	3.179	2.865	2.392	1.824	1.043	.194	0.000	0.000	0.000	0.000	21.835
14	0.000	0.000	.100	.712	1.477	2.151	2.691	2.936	2.141	.799	.361	.172	.088	.011	0.000	0.000	0.000	0.000	13.639
15	0.000	0.000	.116	.714	1.524	2.214	2.829	2.943	2.903	.905	1.613	1.328	.860	.253	0.000	0.000	0.000	0.000	18.203
16	0.000	0.000	.121	.762	1.528	2.146	2.201	2.272	2.812	2.838	2.370	1.726	.968	.228	0.000	0.000	0.000	0.000	19.972
17	0.000	0.000	.118	.705	1.453	1.173	1.516	1.296	1.290	1.187	.833	.884	.872	.207	0.000	0.000	0.000	0.000	11.536
18	0.000	0.000	.072	.331	.741	2.118	1.337	.739	.204	1.029	1.740	1.794	1.124	.304	0.000	0.000	0.000	0.000	11.532
19	0.000	0.000	.166	.810	1.580	2.290	2.823	3.116	3.184	2.650	2.260	.837	1.201	.304	0.000	0.000	0.000	0.000	21.221
20	0.000	0.000	.172	.886	1.681	2.291	2.753	3.127	3.167	2.983	1.236	.588	.281	.072	0.000	0.000	0.000	0.000	19.236
21	0.000	0.000	.137	.696	1.542	1.862	2.866	3.040	3.248	2.962	2.296	1.892	1.145	.327	0.000	0.000	0.000	0.000	22.013
22	0.000	0.000	.196	.923	1.704	2.390	2.846	3.037	3.179	2.965	2.509	1.902	1.160	.338	0.000	0.000	0.000	0.000	23.149
23	0.000	0.000	.172	.978	1.693	2.367	2.831	3.106	3.143	2.913	2.042	1.046	.333	.153	0.000	0.000	0.000	0.000	20.776
24	0.000	.001	.095	.545	1.110	2.241	2.939	2.693	2.688	2.951	2.599	1.979	.962	.433	.007	0.000	0.000	0.000	21.244
25	0.000	0.000	.205	.921	1.707	2.364	2.834	3.185	2.997	2.734	2.412	.815	.968	.268	.001	0.000	0.000	0.000	21.411
26	0.000	.000	.171	.851	1.604	2.364	3.041	2.467	2.988	1.005	1.545	1.742	.690	.400	.006	0.000	0.000	0.000	18.873
27	0.000	0.000	.258	.971	1.743	2.424	2.857	3.150	3.181	2.969	2.550	1.677	.325	.151	.001	0.000	0.000	0.000	22.255
28	0.000	0.000	.121	.477	1.561	1.713	2.216	3.233	2.806	1.821	2.725	2.069	1.449	.516	.013	0.000	0.000	0.000	20.720
29	0.000	.004	.339	1.130	1.531	1.347	1.531	1.674	1.735	1.377	1.065	.663	.510	.211	.008	0.000	0.000	0.000	13.123
30	0.000	.007	.321	1.084	1.861	2.590	3.104	3.366	3.389	2.958	2.680	1.700	1.115	.312	.009	0.000	0.000	0.000	24.495
31	0.000	.003	.326	1.091	1.768	2.473	2.886	3.148	2.659	2.153	1.298	1.169	.768	.230	.004	0.000	0.000	0.000	19.975
AVERAGE VALUES	0.000	.001	.137	.708	1.417	2.023	2.388	2.461	2.434	2.129	1.810	1.304	.790	.219	.002	0.000	0.000	0.000	18.243
STANDARD DEVIATION	0.000	.002	.087	.248	.312	.413	.686	.838	.911	.838	.698	.584	.402	.125	.003	0.000	0.000	0.000	4.157

M
E MISSING DATA
ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 22.

APRIL 1977

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. STD. 12-13	TIME 13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)
1	0.000	.005	.319	1.065	1.957	2.592	1.738	1.135	1.022	1.311	.663	.374	.071	.158	.019	0.000	0.000	0.000	12.429
2	0.000	.002	.132	.213	.483	.736	1.388	1.429	1.249	1.096	.719	.423	.099	.046	.002	0.000	0.000	0.000	8.018
3	0.000	.003	.167	.450	.647	.793	.932	2.395	3.599	3.389	2.891	2.055	1.335	.514	.016	0.000	0.000	0.000	19.187
4	0.000	.013	.411	.993	1.040	1.486	1.885	2.031	2.056	2.052	1.880	1.916	.874	.337	.013	0.000	0.000	0.000	16.986
5	0.000	.015	.397	1.234	2.004	2.673	3.164	3.419	3.445	3.110	2.744	2.095	1.320	.529	.013	0.000	0.000	0.000	26.162
6	0.000	.015	.442	1.222	1.991	2.655	3.140	3.368	3.392	3.151	M	M	M	M	M	M	M	M	M
7	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
9	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
10	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	3.565	3.354	2.909	1.767	.910	.507	.062	0.000	0.000	0.000	M
23	0.000	.105	.661	1.442	2.142	2.779	3.399	2.663	1.862	3.538	2.761	2.514	1.340	.662	.063	0.000	0.000	0.000	25.930
24	0.000	.109	.695	1.464	2.200	2.843	3.298	3.491	3.524	3.324	2.879	M	M	M	M	M	M	M	M
25	M	M	M	1.571	2.250	2.868	3.301	3.508	3.256	3.274	1.950	1.887	1.474	.658	.103	0.000	0.000	0.000	M
26	0.000	.132	.740	1.504	2.196	2.842	3.337	3.212	3.179	2.876	2.991	2.085	1.487	.593	.110	0.000	0.000	0.000	27.285
27	0.000	.157	.736	1.512	1.430	.545	.525	.690	1.108	1.030	.990	1.225	.722	.052	.003	0.000	0.000	0.000	10.724
28	0.000	.124	.673	1.455	2.124	2.766	2.395	.760	1.015	.712	.357	.104	.073	.050	.003	0.000	0.000	0.000	12.613
29	0.000	.110	.495	.693	1.178	2.155	2.056	.658	.868	.357	.485	1.901	1.105	.327	.023	0.000	0.000	0.000	12.411
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
AVERAGE	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
VALUES	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
STANDARD																			
DEVIATION																			

MISSING DATA
ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 23.

MAY 1977

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FUMT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	2.557	2.916	3.364	3.572	3.384	2.565	2.624	2.288	1.029	.511	.064	0.000	0.000	0.000	M
3	0.000	.088	.418	1.325	2.029	2.149	2.350	3.371	3.348	1.709	.522	1.060	.562	.226	.031	0.000	0.000	0.000	19.188
4	0.000	.076	.539	1.509	2.046	2.346	3.473	3.492	3.685	3.526	3.036	2.451	1.633	.824	.109	0.000	0.000	0.000	28.746
5	0.000	.091	.393	.821	2.491	3.011	3.448	3.641	3.624	3.383	2.338	2.294	1.506	.533	.050	0.000	0.000	0.000	27.623
6	0.000	.206	.840	1.390	2.257	2.901	3.362	3.573	3.585	2.554	2.950	2.279	1.552	.783	.134	0.000	0.000	0.000	28.366
7	0.000	.095	.182	.695	.364	1.227	2.202	2.506	1.833	2.224	2.326	2.242	1.630	.837	.132	0.000	0.000	0.000	18.493
8	0.000	.203	.864	1.810	2.152	2.971	3.382	3.578	3.621	3.458	2.837	1.754	.498	.249	.086	0.000	0.000	0.000	27.463
9	0.000	.237	.916	1.659	2.363	2.948	3.297	3.523	3.514	3.332	2.958	1.608	.458	.063	.010	.001	0.000	0.000	26.887
10	0.000	.072	.635	1.627	2.337	2.945	3.235	3.622	3.126	.565	2.193	.871	.388	.458	.281	.003	0.000	0.000	22.357
11	.002	.277	.984	1.749	2.474	3.091	3.517	3.633	3.611	2.874	2.842	1.938	1.805	.961	.228	.000	0.000	0.000	29.984
12	.002	.202	.452	.974	1.858	1.545	1.830	2.960	2.917	3.452	2.597	1.870	1.323	.890	.234	.001	0.000	0.000	23.109
13	.001	.143	.531	.829	1.421	1.570	2.696	2.950	3.299	3.422	1.890	2.183	1.535	.321	.066	0.000	0.000	0.000	22.857
14	.002	.137	.631	1.574	2.378	2.481	1.734	.471	2.095	3.418	1.210	.585	.263	.049	.005	.000	0.000	0.000	17.031
15	.001	.247	1.207	1.808	1.416	2.811	2.829	3.676	3.387	2.958	2.564	1.691	.910	.552	.191	0.000	0.000	0.000	26.253
16	.008	.188	.399	.871	2.382	3.008	3.375	2.756	1.604	.518	.409	2.194	1.138	.743	.194	.000	0.000	0.000	19.787
17	.003	.157	.927	1.684	2.394	2.952	3.369	3.628	3.639	M	M	1.218	.958	1.083	.198	0.000	0.000	0.000	M
18	.003	.271	1.064	1.749	2.461	3.053	3.470	3.654	3.030	2.509	2.640	1.473	1.058	.511	.211	.002	0.000	0.000	27.158
19	.004	.133	.902	1.845	2.550	3.226	3.577	3.655	3.922	3.019	2.243	.774	.735	.363	.079	.000	0.000	0.000	27.028
20	.001	.106	.219	.408	.969	2.475	2.392	2.346	.268	.289	1.578	1.369	.479	.591	.275	.018	0.000	0.000	13.783
21	.006	.331	1.159	1.907	2.590	3.011	3.535	3.407	3.482	2.547	2.519	2.389	1.165	.879	.345	.009	0.000	0.000	29.282
22	.010	.338	.995	1.762	2.479	2.616	3.375	3.417	1.818	3.145	1.977	1.781	1.496	.644	.101	.002	0.000	0.000	25.956
23	.008	.241	.901	1.089	2.310	3.130	3.506	3.716	3.617	3.088	2.400	2.556	1.413	.385	.175	.001	0.000	0.000	28.538
24	.016	.398	1.049	M	M	M	3.049	2.820	3.443	2.334	2.023	2.111	1.116	.663	.154	.002	0.000	0.000	M
25	.005	.194	1.003	.921	1.435	2.194	2.989	2.483	2.474	2.232	1.641	.805	.777	.228	.027	.001	0.000	0.000	19.409
26	.010	.411	1.053	1.654	2.214	2.499	3.065	3.252	3.483	2.004	1.446	.123	.049	.010	.014	.005	0.000	0.000	21.291
27	.011	.354	1.040	1.784	2.464	3.130	3.001	1.189	1.102	3.020	1.459	2.036	1.470	.985	.220	.004	0.000	0.000	23.270
28	0.000	.089	.386	1.136	2.312	2.369	1.699	2.507	3.083	2.881	.979	.415	.222	.213	.354	.002	0.000	0.000	18.647
29	.018	.405	1.097	1.878	2.756	2.870	3.319	3.701	3.368	3.027	2.059	1.165	.486	.120	.009	.009	0.000	0.000	26.287
30	.013	.224	1.037	1.753	2.473	3.061	3.525	3.706	3.661	3.493	2.973	2.074	1.517	.799	.146	.012	0.000	0.000	30.465
31	.016	.368	1.071	1.801	2.513	3.080	3.503	3.718	3.685	3.454	3.036	2.456	1.760	1.023	.202	.007	0.000	0.000	31.693

AVERAGE VALUES	.005	.217	.789	1.429	2.153	2.675	3.049	3.151	3.024	2.655	2.147	1.668	1.031	.550	.144	.003	0.000	0.000	24.480
STANDARD DEVIATION	.006	.108	.305	.435	.542	.520	.574	.771	.890	.905	.737	.681	.517	.318	.100	.004	0.000	0.000	4.699

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 24.

JUNE 1977

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	MTN. STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)
1	.018	.387	1.057	1.796	2.502	3.058	3.470	3.681	3.644	3.121	3.141	2.551	.764	.018	.256	.026	0.000	0.000	29.488
2	.040	.256	.876	1.763	2.635	3.206	2.727	.968	.665	1.684	1.464	1.370	1.226	.572	.238	.005	0.000	0.000	19.697
3	.026	.552	1.001	1.779	2.450	3.140	2.664	3.912	3.636	.900	.097	1.333	1.019	.610	.244	.010	0.000	0.000	23.373
4	.017	.369	1.040	1.750	2.464	3.051	3.458	3.683	3.655	3.458	3.007	2.486	1.751	1.007	.317	.005	0.000	0.000	31.518
5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	1.213	1.963	2.936	3.451	3.459	3.180	2.434	2.245	1.437	.678	.489	.157	.007	0.000	0.000	M
7	.012	.392	.765	1.651	2.282	2.693	3.142	3.646	3.581	3.426	1.920	.626	.187	.182	.076	.004	0.000	0.000	24.588
8	.024	.178	1.030	1.738	2.430	3.044	3.472	1.902	3.485	2.744	1.238	.349	.397	.371	M	M	M	M	M
9	M	M	M	1.353	2.355	3.087	3.439	3.694	2.557	1.329	1.088	.366	.059	.268	.328	.017	0.000	0.000	M
10	.018	.379	1.033	1.760	2.454	3.024	3.562	3.866	3.286	3.065	2.395	1.838	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	1.767	1.924	3.028	2.897	.345	.234	.860	1.668	1.845	1.262	1.055	.390	.018	0.000	0.000	M
14	.022	.391	1.069	1.831	2.526	3.077	3.500	3.757	3.633	3.330	2.808	2.176	.964	.471	.153	.009	0.000	0.000	29.717
15	.019	.411	1.121	1.872	2.550	3.109	3.503	3.719	3.732	3.600	3.106	2.777	1.612	1.089	.297	.015	0.000	0.000	32.532
16	.027	.329	.494	1.801	2.227	2.724	2.897	3.398	1.609	2.263	3.002	2.478	1.744	.591	.361	.009	0.000	0.000	25.955
17	.023	.398	1.073	1.793	2.464	3.023	3.263	3.563	3.162	3.075	2.254	1.243	.487	.134	.056	.000	0.000	0.000	26.011
18	.004	.108	.116	.238	.260	.326	.498	.483	.734	2.937	2.753	.786	.684	.516	.271	.015	0.000	0.000	10.729
19	.003	.109	.274	.592	.902	1.106	1.576	1.690	2.280	2.437	1.673	1.012	.369	.300	.082	.005	0.000	0.000	14.412
20	.003	.069	.335	.366	1.026	.729	.978	1.373	1.651	2.302	2.340	2.119	1.929	1.092	.349	.019	0.000	0.000	16.681
21	.001	.039	.341	1.547	2.465	3.031	3.141	3.548	3.018	2.726	3.050	1.210	1.523	.828	.427	.015	0.000	0.000	26.909
22	.018	.366	1.005	1.759	2.432	3.043	3.541	2.818	2.163	3.579	.855	1.510	1.637	.958	.354	.022	0.000	0.000	26.061
23	.014	.271	.771	1.552	2.461	2.679	2.798	2.733	3.025	1.973	1.693	1.444	1.433	.516	.078	.000	0.000	0.000	23.442
24	.026	.421	1.137	1.682	2.379	2.797	3.070	3.694	3.705	3.529	3.104	2.630	1.930	1.172	.443	.022	0.000	0.000	31.743
25	.015	.366	1.018	1.747	2.447	3.036	3.454	3.684	3.686	3.501	2.874	1.297	.423	.523	.256	.018	0.000	0.000	28.344
26	.010	.207	.659	1.890	2.328	2.987	2.061	2.867	2.715	2.399	1.476	1.814	1.028	.363	.230	.024	0.000	0.000	23.059
27	.012	.370	.790	1.705	2.446	3.007	3.413	3.675	3.728	3.406	2.656	1.960	1.853	.803	.328	.008	0.000	0.000	30.161
28	.026	.275	.647	M	2.400	3.011	3.422	3.654	3.662	3.455	3.054	2.489	1.758	1.058	.422	.023	0.000	0.000	M
29	.028	.320	.610	.782	.848	.932	1.266	1.353	1.437	1.954	2.486	.903	.778	.541	.499	.033	0.000	0.000	14.770
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
AVERAGE VALUES																			
STANDARD DEVIATION																			
MISSING DATA																			
ESTIMATED DATA REFER TO DOCUMENTATION																			

INSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 25.

JULY 1977

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. STD. 12-13	TIME 13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
4	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
5	M	M	M	M	2.224	2.794	2.722	1.401	.365	2.717	2.064	1.397	.430	.374	.043	.001	0.000	0.000	M
6	.014	.363	1.030	1.765	2.469	3.044	3.434	3.029	2.379	1.141	2.299	2.676	1.958	.782	.580	.023	0.000	0.000	26.976
7	.008	.349	1.013	1.741	2.442	3.025	2.632	3.652	3.895	2.217	.348	.139	.600	1.376	.468	.022	0.000	0.000	23.929
8	.001	.112	.199	1.160	2.100	2.283	2.367	3.099	2.515	2.986	1.914	.354	.583	.582	.389	.089	0.000	0.000	20.731
9	.005	.111	.313	1.471	1.272	2.427	2.685	2.774	3.368	2.377	1.574	.909	.356	.365	.513	.051	0.000	0.000	20.571
10	.014	.336	1.006	1.749	2.474	3.025	3.498	3.786	3.756	2.845	3.293	2.028	2.031	1.149	.426	.018	0.000	0.000	31.431
11	.010	.318	.978	1.697	2.416	3.028	3.465	3.709	3.236	3.063	2.907	2.343	1.732	.434	.161	.012	0.000	0.000	29.509
12	.006	.319	.999	1.735	2.434	3.021	3.454	3.703	3.099	3.059	2.987	2.559	1.926	.706	.119	.006	0.000	0.000	30.134
13	.007	.170	.636	1.053	2.026	1.791	1.292	1.417	1.683	1.859	1.107	.730	1.054	.553	.226	.013	0.000	0.000	15.617
14	.005	.298	.954	1.666	2.365	2.927	3.409	2.395	3.800	2.257	1.278	2.002	1.907	.946	.217	.049	0.000	0.000	26.474
15	.002	.288	.919	1.623	2.292	2.859	3.552	.719	1.267	3.092	3.090	1.893	1.748	1.202	.266	.008	0.000	0.000	24.820
16	.004	.289	.922	1.672	2.323	2.930	3.005	2.749	1.992	1.556	1.506	1.480	1.056	.459	.224	.013	0.000	0.000	22.182
17	.004	.258	.893	1.522	2.291	3.105	2.162	2.016	2.756	2.198	.970	1.069	.671	.092	.011	0.000	0.000	0.000	20.018
18	.001	.242	.934	1.284	.996	2.080	2.931	3.604	3.782	3.540	2.573	1.328	.618	.028	.002	0.000	0.000	0.000	23.942
19	.004	.303	.859	1.686	2.442	2.861	3.084	2.484	2.347	.894	.346	.341	.634	.435	.033	0.000	0.000	0.000	18.754
20	.001	.275	.371	.813	1.217	.801	1.889	3.770	3.109	1.630	.742	.078	.005	.012	.021	.001	0.000	0.000	14.734
21	.001	.016	.080	.217	.234	.273	.347	.760	.540	1.493	.236	.288	.503	.443	.114	.002	0.000	0.000	5.547
22	.000	.064	.220	.623	1.089	1.774	2.714	2.525	1.707	1.808	1.933	1.670	1.276	.274	.032	0.000	0.000	0.000	17.710
23	.004	.204	.327	1.648	2.158	3.065	3.260	3.573	3.617	2.501	2.233	2.587	.876	.363	.138	.003	0.000	0.000	26.555
24	.001	.099	.307	.814	1.702	2.314	2.767	3.844	1.430	.909	1.333	.975	.578	.422	.183	.007	0.000	0.000	17.684
25	.000	.025	.093	.131	.150	.284	.776	1.174	.568	.427	.465	.163	.190	.143	.022	0.000	0.000	0.000	4.611
26	.001	.022	.168	.757	1.594	2.558	2.524	3.183	3.607	3.379	3.058	2.029	.346	1.046	.375	.020	0.000	0.000	24.667
27	.001	.204	.816	1.537	2.293	2.880	3.326	3.583	3.607	3.309	2.463	1.447	.467	.937	.175	.002	0.000	0.000	27.046
28	0.000	.187	.832	1.538	2.231	2.845	3.085	3.483	1.661	3.439	2.983	2.380	1.223	.562	.195	.004	0.000	0.000	26.646
29	0.000	.205	.849	1.606	2.333	2.914	3.429	3.382	3.374	3.235	2.026	1.089	.780	.299	.063	.000	0.000	0.000	25.584
30	0.000	.197	.835	1.577	2.252	2.853	3.308	3.586	3.619	3.318	1.326	1.601	1.245	1.234	.338	.001	0.000	0.000	27.291
31	0.000	.192	.848	1.613	2.306	2.901	3.324	3.570	3.570	3.355	2.945	2.386	1.737	.796	.280	.002	0.000	0.000	29.826

AVERAGE	.003	.209	.669	1.335	1.931	2.469	2.757	2.851	2.617	2.392	1.852	1.465	.983	.593	.208	.013	0.000	0.000	22.423
VALUES																			
STANDARD	.004	.106	.340	.485	.672	.821	.837	.989	1.119	.909	.960	.835	.614	.383	.166	.021	0.000	0.000	6.829
DEVIATION																			

MISSING DATA
ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 26.

AUGUST 1977

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	MTN. STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	0.000	.197	.843	1.598	2.296	2.902	3.330	3.628	3.647	3.435	3.031	1.696	1.292	.608	.227	.007	0.000	0.000	28.738
2	0.000	.177	.810	1.543	2.250	2.853	3.287	3.554	3.606	3.396	3.029	1.554	.912	.383	.057	.001	0.000	0.000	27.412
3	0.000	.159	.679	1.555	2.233	2.819	3.270	3.274	2.576	1.988	.928	.799	.469	.230	.052	.002	0.000	0.000	21.033
4	0.000	.159	.764	M	2.212	2.806	2.790	1.681	1.813	1.074	.541	.818	.856	.136	.103	.004	0.000	0.000	M
5	.0000	.015	.266	1.597	1.679	.769	1.153	.327	2.089	.612	.629	.360	.373	.245	.059	.001	0.000	0.000	10.177
6	.0000	.016	.199	.699	2.034	2.722	3.083	3.435	3.597	2.900	2.800	2.093	1.225	.473	.120	.001	0.000	0.000	25.398
7	0.0000	.137	.736	1.155	1.643	2.048	2.772	3.296	3.412	2.263	1.418	1.710	.719	.298	.288	0.000	0.000	0.000	21.895
8	0.0000	.160	.918	1.365	2.123	2.370	2.830	2.666	.783	.282	.569	.703	.246	.327	.093	0.000	0.000	0.000	15.436
9	0.0000	.122	.719	1.418	2.133	2.736	3.198	3.521	3.424	2.176	2.343	1.333	.466	.174	.081	0.000	0.000	0.000	23.845
10	0.0000	.054	.545	1.376	2.095	2.700	3.047	3.384	1.869	.464	.364	.632	.198	.073	.016	0.000	0.000	0.000	16.817
11	0.0000	.054	.269	.318	.456	.457	.455	.534	.733	1.356	1.871	1.479	.873	.629	.143	0.000	0.000	0.000	9.629
12	0.0000	.115	.733	1.467	2.136	2.734	3.173	3.476	3.130	2.734	2.240	1.348	.998	.491	.104	0.000	0.000	0.000	24.878
13	0.0000	.075	.618	1.126	2.153	2.728	3.035	3.429	3.087	3.061	1.196	.679	.807	.245	.065	0.000	0.000	0.000	22.304
14	0.0000	.094	.569	.418	.605	.347	.419	.600	.479	1.459	1.094	1.035	1.554	.649	.138	0.000	0.000	0.000	9.460
15	0.0000	.067	.448	1.230	1.906	2.714	2.771	2.035	.496	.529	.560	.829	.297	.285	.027	0.000	0.000	0.000	14.193
16	0.0000	.001	.023	.066	.185	.264	.510	.412	1.038	1.411	.669	.788	1.165	.698	.123	0.000	0.000	0.000	7.354
17	0.0000	.004	.114	.324	.368	.595	.597	.668	.641	.643	.500	.285	.275	.205	.017	0.000	0.000	0.000	5.235
18	0.0000	.012	.114	.176	.506	.657	1.191	.485	2.278	2.394	.531	1.255	.563	.446	.069	0.000	0.000	0.000	10.678
19	0.0000	.018	.122	.290	.825	1.035	1.283	1.246	1.282	1.158	1.734	1.974	1.196	.487	.084	0.000	0.000	0.000	12.735
20	0.0000	.074	.607	1.325	2.039	2.671	3.112	3.378	3.396	3.178	2.749	1.962	1.195	.327	.047	0.000	0.000	0.000	26.061
21	0.0000	.034	.248	.785	1.770	2.571	2.559	3.376	3.054	1.464	.841	1.754	.828	.426	.122	0.000	0.000	0.000	19.831
22	0.0000	.090	.498	1.312	2.182	2.206	2.565	3.119	2.621	3.065	2.358	1.173	1.191	.470	.079	0.000	0.000	0.000	22.928
23	0.0000	.065	.587	1.306	1.646	2.278	3.072	3.365	1.826	1.155	2.525	1.539	.750	.642	.075	0.000	0.000	0.000	20.831
24	0.0000	.084	.584	1.291	2.011	2.720	2.613	2.631	3.123	3.043	1.079	2.091	.871	.205	.027	0.000	0.000	0.000	22.373
25	0.0000	.110	.123	.189	.579	.910	1.181	3.450	3.074	2.430	.958	1.351	.329	.547	.130	0.000	0.000	0.000	15.330
26	0.0000	.107	.745	1.457	2.093	2.670	2.827	2.193	3.118	3.110	2.174	2.076	.923	.160	.018	0.000	0.000	0.000	23.669
27	0.0000	0.0000	.191	.901	1.514	2.034	2.734	1.380	2.032	2.141	1.903	1.905	1.171	.420	.041	0.000	0.000	0.000	18.369
28	0.0000	.009	.033	.453	1.242	1.934	2.966	2.413	2.183	3.162	1.869	1.659	1.000	.439	.026	0.000	0.000	0.000	19.387
29	0.0000	.048	.582	1.254	1.941	2.565	3.018	3.276	3.069	2.931	2.424	1.952	1.086	.290	.048	0.000	0.000	0.000	24.485
30	0.0000	.052	.557	1.325	2.044	2.505	3.057	2.968	3.150	2.267	2.089	2.344	1.173	.200	.036	0.000	0.000	0.000	23.777
31	0.0000	.036	.578	1.294	1.962	2.584	3.047	3.385	3.374	2.128	.864	.889	1.156	.387	.017	0.000	0.000	0.000	21.700
AVERAGE VALUES	.0000	.076	.479	1.020	1.641	2.061	2.418	2.470	2.387	2.045	1.545	1.357	.844	.374	.081	.000	0.000	0.000	18.865
STANDARD DEVIATION	.0000	.057	.267	.503	.672	.901	.978	1.171	1.043	.981	.862	.568	.366	.169	.061	.001	0.000	0.000	6.419

M MISSING DATA
ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 21)
SERIAL NO. 12513 F3

SEPTEMBER 1977

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. STD. 12-13	TIME 13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	0.000	.009	.591	1.263	1.969	2.647	2.076	3.276	3.196	2.803	.893	1.238	.740	.238	.011	0.000	0.000	0.000	20.951
2	0.000	.017	.233	1.217	1.891	2.526	2.998	3.189	3.232	2.929	2.465	1.912	1.271	.185	.008	0.000	0.000	0.000	24.073
3	0.000	.002	.202	.347	1.685	2.471	2.702	1.337	1.070	.296	1.030	.716	.389	.008	0.000	0.000	0.000	0.000	12.255
4	0.000	.030	.485	1.136	1.832	2.467	2.946	3.194	3.187	2.990	2.498	1.838	.778	.576	0.000	0.000	0.000	0.000	23.957
5	M	M	M	1.535	1.931	2.541	2.995	3.207	3.198	2.947	2.494	1.885	1.153	.431	.010	0.000	0.000	0.000	M
6	0.000	.015	.471	1.189	1.940	2.551	3.004	3.240	3.207	2.946	2.275	1.636	1.107	.256	.002	0.000	0.000	0.000	23.839
7	0.000	.022	.270	.980	1.392	2.331	2.736	3.055	3.100	2.640	2.456	1.708	.590	.478	.014	0.000	0.000	0.000	21.771
8	0.000	.038	.470	1.177	1.532	1.971	2.471	2.636	2.591	2.568	2.613	1.621	1.150	.395	.007	0.000	0.000	0.000	21.241
9	0.000	.021	.432	1.171	1.944	2.540	2.992	3.211	3.173	2.942	1.731	.733	.862	.225	.008	0.000	0.000	0.000	21.984
10	0.000	.020	.449	1.179	1.908	2.197	2.912	3.254	2.855	1.344	1.392	1.368	.390	.068	0.000	0.000	0.000	0.000	19.337
11	0.000	.003	.127	.334	.697	.647	.450	.725	.995	1.145	1.331	.746	.295	.147	.002	0.000	0.000	0.000	7.644
12	0.000	.009	.258	1.062	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	1.460	1.867	1.767	1.606	2.331	2.064	1.612	.657	.185	0.000	0.000	0.000	0.000	M
20	0.000	.006	.275	.950	1.690	2.460	2.450	3.059	2.992	1.681	1.378	1.610	.894	.131	0.000	0.000	0.000	0.000	19.577
21	0.000	.002	.259	1.054	1.784	2.401	2.826	2.930	3.014	2.741	1.668	1.010	.385	.071	0.000	0.000	0.000	0.000	20.143
22	0.000	0.000	.271	1.095	1.768	1.602	2.418	3.022	2.953	2.691	2.223	1.598	.855	.174	0.000	0.000	0.000	0.000	20.670
23	0.000	0.000	.494	1.200	1.692	2.491	2.685	3.148	3.131	2.876	2.499	.999	.900	.164	0.000	0.000	0.000	0.000	22.278
24	0.000	0.000	.318	1.015	1.748	2.348	2.771	2.970	2.961	2.305	1.369	1.442	.837	.140	0.000	0.000	0.000	0.000	20.225
25	0.000	0.000	.303	1.015	1.726	2.337	2.760	2.953	2.918	2.628	2.150	1.500	.758	.101	0.000	0.000	0.000	0.000	21.149
26	0.000	0.000	.319	1.322	.581	.941	2.697	3.049	1.360	2.289	2.203	1.548	.799	.105	0.000	0.000	0.000	0.000	17.212
27	0.000	0.000	.280	.989	1.674	2.265	2.697	2.887	2.748	1.164	1.446	1.086	.415	.068	0.000	0.000	0.000	0.000	17.719
28	0.000	0.000	.263	.951	1.666	2.258	2.512	2.031	1.965	2.641	.620	.331	.465	.131	0.000	0.000	0.000	0.000	15.834
29	0.000	0.000	.127	1.055	1.470	2.159	2.516	2.164	2.384	1.224	1.007	1.338	.591	.070	0.000	0.000	0.000	0.000	16.105
30	0.000	0.000	.156	.627	.547	.721	.631	1.144	.787	.633	1.842	1.811	.739	.051	0.000	0.000	0.000	0.000	9.689
AVERAGE VALUES																			
STANDARD DEVIATION																			
M																			
M																			

MISSING DATA
ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 28.

OCTOBER 1977

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS, COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	MTN. STD. TIME 13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ.M-DAY)
1	0.000	0.000	.256	.974	1.714	2.319	2.731	2.906	2.847	2.547	2.053	1.095	.195	.058	0.000	0.000	0.000	0.000	19.695
2	0.000	0.000	.060	.321	.712	1.575	2.237	2.739	2.801	2.526	2.024	1.369	.641	.049	0.000	0.000	0.000	0.000	17.073
3	0.000	0.000	.186	.719	.755	.820	1.344	1.991	1.971	2.644	1.835	.630	.377	.037	0.000	0.000	0.000	0.000	13.310
4	0.000	0.000	.246	.539	1.525	.905	1.831	1.447	1.332	1.401	1.033	.722	.513	.051	0.000	0.000	0.000	0.000	11.545
5	0.000	0.000	.026	.033	.145	.402	.527	.643	.475	.352	.422	.317	.246	.022	0.000	0.000	0.000	0.000	3.610
6	0.000	0.000	.078	.306	.441	.660	1.146	1.480	1.630	.827	.575	.418	.197	.003	0.000	0.000	0.000	0.000	7.760
7	0.000	0.000	.179	.853	1.570	2.123	2.285	2.503	2.333	2.449	1.928	1.294	.473	.011	0.000	0.000	0.000	0.000	18.001
8	0.000	0.000	.186	.849	1.506	2.196	2.594	2.806	2.731	2.439	1.928	1.296	.551	.010	0.000	0.000	0.000	0.000	19.092
9	0.000	0.000	.089	.323	1.231	2.349	2.597	2.879	1.596	2.741	.809	.464	.493	.010	0.000	0.000	0.000	0.000	15.582
10	0.000	0.000	.030	.107	.290	.650	.899	.766	.835	1.444	1.725	1.157	.520	.011	0.000	0.000	0.000	0.000	8.434
11	0.000	0.000	.155	M	1.621	2.138	2.569	2.751	2.682	2.382	1.879	1.200	.494	.010	0.000	0.000	0.000	0.000	M
12	0.000	0.000	.158	.809	1.530	2.134	2.529	2.717	2.662	2.145	1.830	1.204	.465	.007	0.000	0.000	0.000	0.000	18.191
13	0.000	0.000	.138	.782	1.485	2.074	2.469	2.648	2.621	2.329	1.820	1.144	.416	.005	0.000	0.000	0.000	0.000	17.931
14	0.000	0.000	.136	.830	1.352	1.969	2.344	2.530	2.433	2.096	1.707	.953	.244	.008	0.000	0.000	0.000	0.000	16.602
15	0.000	0.000	.022	.251	1.229	1.852	2.296	2.534	2.453	2.211	1.741	1.236	.372	.008	0.000	0.000	0.000	0.000	16.207
16	0.000	0.000	.119	.736	1.413	2.012	2.418	2.597	2.537	2.231	1.751	1.117	.373	.002	0.000	0.000	0.000	0.000	17.305
17	0.000	0.000	.118	.658	1.103	1.974	2.363	2.528	2.472	2.053	1.640	.932	.367	.003	0.000	0.000	0.000	0.000	16.212
18	0.000	0.000	.094	.676	1.365	1.948	2.358	2.536	2.479	M	1.684	1.037	.316	.002	0.000	0.000	0.000	0.000	M
19	0.000	0.000	.089	.643	1.316	1.915	2.309	2.476	2.416	2.324	1.209	.651	.345	.005	0.000	0.000	0.000	0.000	15.697
20	0.000	0.000	.060	.673	1.142	1.722	1.503	2.037	2.371	1.373	.638	.761	.222	0.000	0.000	0.000	0.000	0.000	12.504
21	0.000	0.000	.036	.122	.228	.791	1.804	2.200	2.175	1.793	1.406	.436	.012	0.000	0.000	0.000	0.000	0.000	11.004
22	0.000	0.000	.019	.250	.878	1.355	1.479	2.303	2.291	1.995	1.503	.862	.229	.000	0.000	0.000	0.000	0.000	13.165
23	0.000	0.000	.073	.606	1.275	1.846	2.236	2.417	2.336	2.053	1.555	.916	.217	0.000	0.000	0.000	0.000	0.000	15.528
24	0.000	0.000	.033	.251	.755	1.269	1.447	1.605	2.115	1.160	.995	.586	.147	.001	0.000	0.000	0.000	0.000	10.364
25	0.000	0.000	.061	.591	1.262	1.844	2.228	2.404	2.291	2.041	1.535	.891	.189	0.000	0.000	0.000	0.000	0.000	15.336
26	0.000	0.000	.054	.578	1.248	1.807	2.187	2.356	2.298	2.021	1.522	.886	.170	.001	0.000	0.000	0.000	0.000	15.127
27	0.000	0.000	.053	.536	1.188	1.723	2.101	2.270	2.219	1.944	1.456	.827	.167	0.000	0.000	0.000	0.000	0.000	14.484
28	0.000	0.000	.047	.439	1.104	1.685	2.046	2.209	2.121	1.841	1.366	.779	.151	0.000	0.000	0.000	0.000	0.000	13.787
29	0.000	0.000	.056	.382	.661	.992	1.143	1.901	2.052	1.865	1.297	.501	.144	0.000	0.000	0.000	0.000	0.000	10.995
30	0.000	0.000	.017	.498	.441	1.524	2.155	2.334	2.264	1.977	1.493	.600	.144	0.000	0.000	0.000	0.000	0.000	13.448
31	0.000	0.000	.037	.532	.775	.767	1.541	1.775	1.706	1.020	.459	.142	M	M	M	M	M	M	M

AVERAGE	0.000	0.000	.095	.529	1.073	1.592	1.991	2.235	2.179	1.941	1.446	.852	.313	.010	0.000	0.000	0.000	0.000	14.214
VALUES																			
STANDARD	0.000	0.000	.066	.248	.442	.567	.563	.563	.542	.564	.467	.321	.156	.016	0.000	0.000	0.000	0.000	3.716
DEVIATION																			

MISSING DATA
ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 21)
SERIAL NO. 12513 F3

NOVEMBER 1977

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS			MTN. STD. TIME																	INTEGRATED
	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	DAILY VALUES (MJ/SQM-DAY)		
1	M	M	M	M	M	M	M	M	M	M	1.454	.835	.123	0.000	0.000	0.000	0.000	0.000	M		
2	0.000	0.000	.055	.638	.459	.929	1.132	1.517	2.210	1.891	1.400	.783	.103	0.000	0.000	0.000	0.000	0.000	11.116		
3	0.000	0.000	.023	.457	1.114	1.687	2.076	2.236	2.170	1.871	1.442	.693	.111	0.000	0.000	0.000	0.000	0.000	13.880		
4	0.000	0.000	.024	.172	.349	.766	1.344	1.616	1.823	1.406	1.389	.667	.087	0.000	0.000	0.000	0.000	0.000	9.642		
5	0.000	0.000	.027	.345	.762	1.652	1.500	2.210	1.979	1.519	.954	.461	.064	0.000	0.000	0.000	0.000	0.000	11.473		
6	0.000	0.000	.003	.110	.283	.479	.704	1.132	1.163	.934	.722	.805	.105	0.000	0.000	0.000	0.000	0.000	6.439		
7	0.000	0.000	.016	.365	1.035	1.506	1.876	1.978	1.984	1.720	1.234	.522	.072	0.000	0.000	0.000	0.000	0.000	12.307		
8	0.000	0.000	0.000	.082	.411	.865	1.748	1.018	1.568	.876	.525	.356	.063	0.000	0.000	0.000	0.000	0.000	7.513		
9	0.000	0.000	0.000	.408	1.071	1.656	2.170	1.616	1.468	.843	.515	.281	.061	0.000	0.000	0.000	0.000	0.000	10.089		
10	0.000	0.000	0.000	.371	.973	1.556	1.929	2.091	2.034	1.757	1.291	.676	.051	0.000	0.000	0.000	0.000	0.000	12.727		
11	0.000	0.000	0.000	.356	.980	1.517	1.894	2.072	1.929	1.886	.994	.411	.077	0.000	0.000	0.000	0.000	0.000	12.117		
12	0.000	0.000	0.000	.034	.094	.181	.265	.237	.496	1.271	1.286	.590	.045	0.000	0.000	0.000	0.000	0.000	4.499		
13	0.000	0.000	0.000	.324	.939	1.473	1.879	1.964	M	M	M	M	M	M	M	M	M	M	M		
14	M	M	M	M	1.188	1.653	1.729	1.988	1.894	1.392	.835	.432	.051	0.000	0.000	0.000	0.000	0.000	M		
15	0.000	0.000	0.000	.175	.361	.598	1.850	1.656	.724	.859	1.010	.580	.029	0.000	0.000	0.000	0.000	0.000	7.842		
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
23	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
28	M	M	M	M	.840	1.319	1.605	1.860	1.407	.421	.442	.250	.006	0.000	0.000	0.000	0.000	0.000	M		
29	0.000	0.000	0.000	.151	.638	.972	1.239	.958	.657	.725	.330	.191	.012	0.000	0.000	0.000	0.000	0.000	5.874		
30	0.000	0.000	0.000	.064	.294	.691	1.252	1.819	1.196	1.020	1.127	.501	.020	0.000	0.000	0.000	0.000	0.000	7.983		
AVERAGE VALUES	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
STANDARD DEVIATION	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

Table 30.

DECEMBER 1977

HEMISPHERIC SOLAR IRRADIANCE
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)
1	0.000	0.000	0.000	.114	.711	1.007	1.459	1.641	1.201	.794	.406	.112	.011	0.000	0.000	0.000	0.000	0.000	7.456
2	0.000	0.000	0.000	.024	.415	.638	1.085	1.866	1.662	1.165	.611	.329	.018	0.000	0.000	0.000	0.000	0.000	7.812
3	0.000	0.000	0.000	.048	.245	.396	.831	1.670	1.879	1.754	.868	.334	.041	0.000	0.000	0.000	0.000	0.000	8.066
4	0.000	0.000	0.000	.020	.254	.683	.940	1.194	1.790	1.527	1.089	.439	.015	0.000	0.000	0.000	0.000	0.000	7.958
5	0.000	0.000	0.000	.051	.200	.237	.584	.634	.789	1.121	.578	.185	.015	0.000	0.000	0.000	0.000	0.000	4.396
6	0.000	0.000	0.000	.146	.341	.563	.710	.717	.849	.845	.405	.160	.012	0.000	0.000	0.000	0.000	0.000	4.756
7	0.000	0.000	0.000	.049	.251	.490	1.512	1.493	.952	1.334	1.067	.469	.008	0.000	0.000	0.000	0.000	0.000	7.624
8	0.000	0.000	0.000	.043	.290	.586	1.221	1.618	1.147	1.297	.643	.260	.030	0.000	0.000	0.000	0.000	0.000	7.135
9	0.000	0.000	0.000	.126	.706	1.335	1.555	1.475	1.208	1.548	.790	.585	.043	0.000	0.000	0.000	0.000	0.000	9.371
10	0.000	0.000	0.000	.106	.655	1.216	1.205	1.750	1.242	1.799	1.198	.574	.028	0.000	0.000	0.000	0.000	0.000	9.773
11	0.000	0.000	0.000	.028	.603	1.143	1.506	1.706	1.674	1.472	.854	.163	.011	0.000	0.000	0.000	0.000	0.000	9.159
12	0.000	0.000	0.000	.116	.692	1.522	.673	.628	.595	.536	.454	.282	.033	0.000	0.000	0.000	0.000	0.000	5.532
13	0.000	0.000	0.000	.068	.324	.616	.843	1.175	1.794	1.555	.737	.269	.009	0.000	0.000	0.000	0.000	0.000	7.391
14	0.000	0.000	0.000	.034	.254	.455	.725	.889	1.191	1.133	.783	.420	.031	0.000	0.000	0.000	0.000	0.000	5.918
15	0.000	0.000	0.000	.028	.247	.599	.346	.399	.363	.340	.963	.428	.046	0.000	0.000	0.000	0.000	0.000	3.760
16	0.000	0.000	0.000	.044	.289	.804	.986	.901	1.302	1.332	1.056	.499	.027	0.000	0.000	0.000	0.000	0.000	7.240
17	0.000	0.000	0.000	.081	.585	1.122	1.529	1.571	1.581	1.405	.525	.475	.037	0.000	0.000	0.000	0.000	0.000	8.912
18	0.000	0.000	0.000	.067	.425	1.051	1.462	1.687	.580	1.502	.596	.164	.008	0.000	0.000	0.000	0.000	0.000	7.542
19	0.000	0.000	0.000	.071	.563	1.114	1.533	1.060	1.365	1.342	.829	.441	.017	0.000	0.000	0.000	0.000	0.000	8.335
20	0.000	0.000	0.000	.067	.561	1.117	1.533	1.775	1.759	1.539	1.111	.531	.020	0.000	0.000	0.000	0.000	0.000	10.013
21	0.000	0.000	0.000	.066	.534	1.094	1.421	1.730	1.480	1.508	.788	.286	.030	0.000	0.000	0.000	0.000	0.000	8.940
22	0.000	0.000	0.000	.026	.320	1.060	1.505	1.721	1.716	1.518	1.074	.431	.023	0.000	0.000	0.000	0.000	0.000	9.394
23	0.000	0.000	0.000	0.000	0.000	0.000	M	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

AVERAGE	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
VALUES	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
STANDARD	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
DEVIATION	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

MISSING DATA
ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
SERIAL NO. 12513 F3

MAY 1974

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. STD. TIME 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12	M	M	M	1.959	2.755	.982	1.814	.491	1.970	1.324	2.100	2.361	2.844	2.266	1.045	0.000	0.000	0.000	M
13	.027	1.103	2.305	3.088	3.407	3.555	3.455	3.439	2.701	1.787	.997	.373	.253	.214	.132	0.000	0.000	0.000	27.037
14	M	M	M	M	M	3.698	3.776	3.747	3.732	3.475	1.439	1.211	.183	.541	.640	0.000	0.000	0.000	M
15	.007	.041	0.000	0.000	.000	0.000	0.000	0.000	.001	.000	.002	0.000	.049	0.000	0.000	0.000	0.000	0.000	.101
16	.035	.042	0.000	.072	.160	1.440	1.467	1.526	2.072	3.120	2.263	2.467	2.906	2.444	1.199	0.000	0.000	0.000	21.214
17	.044	1.447	2.673	3.187	3.405	3.538	3.613	3.373	2.642	1.808	1.173	.769	.579	.521	.280	0.000	0.000	0.000	29.052
18	.075	1.593	2.657	2.464	2.635	3.285	3.046	3.188	2.760	1.261	.699	.546	0.000	.489	.000	.000	0.000	0.000	24.698
19	.029	.986	2.064	2.448	.552	.008	.818	2.803	1.165	.206	1.846	.356	.020	0.000	.000	.000	0.000	0.000	13.302
20	.005	.601	1.923	2.675	3.004	3.150	3.244	2.328	.822	.788	.074	0.000	.001	0.000	.000	0.000	0.000	0.000	18.615
21	.000	.000	.001	0.000	.075	.754	.001	.001	.044	.001	.000	.000	.000	0.000	0.000	.000	0.000	0.000	.878
22	.000	0.000	.000	.004	.003	.005	.003	.012	.042	.032	0.000	.003	.001	.002	.000	0.000	0.000	0.000	.107
23	.000	.000	.001	.001	0.000	.001	0.000	.001	.002	.001	.002	0.000	.001	.001	0.000	0.000	0.000	0.000	.011
24	.001	.000	0.000	.000	0.000	0.000	.003	.145	.326	1.432	.645	.044	.399	.094	0.000	0.000	0.000	0.000	3.089
25	0.000	.003	.345	.199	2.183	1.783	.902	2.279	.035	0.000	.136	.422	.733	.006	.121	0.000	0.000	0.000	9.147
26	.193	.663	.014	1.404	2.804	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
AVERAGE VALUES	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
STANDARD DEVIATION	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

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M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

Table 32.

JUNE 1976

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FJMT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. STD. 12-13 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-H-DAY)	
1	M	M	M	M	M	M	M	M	M	0.000	1.973	1.447	.184	.005	.001	0.000	0.000	M	
2	.047	.479	1.105	1.763	2.520	3.261	2.999	.004	1.348	2.348	.864	.350	.626	1.052	.899	.000	0.000	0.000	19.664
3	.207	1.672	2.626	2.990	3.252	3.408	3.419	3.205	1.837	1.903	2.098	.373	.470	.886	.227	0.000	0.000	0.000	28.574
4	.155	1.643	2.501	2.913	3.110	3.137	3.233	3.099	2.985	.268	.420	0.000	M	M	M	M	M	M	M
5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
7	M	M	M	M	M	3.042	3.113	3.243	2.782	2.197	2.086	1.326	.103	.532	1.141	.014	0.000	0.000	M
8	.204	1.746	2.473	2.794	3.034	3.150	3.143	3.100	1.122	.902	1.966	1.894	.832	.008	.018	.010	0.000	0.000	26.397
9	.056	.981	2.139	.758	1.702	.125	.028	.030	M	M	M	1.706	.621	.879	.862	.045	0.000	0.000	M
10	.263	1.820	2.655	3.024	1.767	1.415	3.394	2.996	3.212	.176	.109	1.692	2.082	2.399	.445	.015	0.000	0.000	27.465
11	.091	1.409	2.522	3.001	3.269	3.365	3.406	3.338	2.653	2.657	2.932	2.640	3.000	.860	.695	.099	0.000	0.000	35.937
12	.022	.024	.203	.436	2.324	3.509	3.433	3.225	3.210	3.534	2.444	2.388	.087	.018	.568	.106	0.000	0.000	26.531
13	.041	.434	2.216	2.687	2.342	2.115	1.417	1.613	.994	.244	1.310	1.796	1.711	2.066	1.777	.014	0.000	0.000	22.978
14	.030	.550	3.017	3.297	3.497	3.607	3.635	3.628	3.604	1.758	2.595	.580	.381	.015	.027	.032	0.000	0.000	30.252
15	.071	.509	2.574	2.162	3.274	3.020	2.932	3.413	3.422	M	M	3.196	2.953	2.569	.872	.019	0.000	0.000	M
16	.064	.029	.038	.094	.190	.668	.071	1.115	.797	.060	.033	.027	.252	2.352	1.654	.018	0.000	0.000	7.461
17	.024	.029	.021	.017	.030	.017	.026	.101	.231	.128	1.248	.029	.014	.015	.020	.017	0.000	0.000	1.968
18	.024	.026	.024	.029	.042	.034	.028	.030	.048	.028	.053	.029	.709	1.633	.290	.025	0.000	0.000	3.054
19	.241	2.059	2.863	3.194	3.308	3.447	3.508	3.518	3.483	3.383	2.245	3.118	2.934	2.589	1.845	.193	0.000	0.000	42.928
20	.449	1.257	2.582	3.140	2.547	3.359	3.369	3.206	3.075	3.153	2.055	2.379	1.045	.790	.806	.024	0.000	0.000	34.236
21	.244	1.854	2.708	3.128	3.287	3.337	3.397	3.405	3.385	2.140	1.787	2.573	2.292	2.575	1.037	.062	0.000	0.000	37.211
22	.173	1.420	2.580	2.773	3.118	3.229	3.272	3.024	2.274	2.596	2.522	.013	.073	.019	.617	.111	0.000	0.000	27.815
23	.046	.733	1.290	.030	1.997	2.096	.014	.026	.095	.899	M	M	.034	.035	.033	.023	0.000	0.000	M
24	.028	.048	.048	2.176	3.298	3.376	3.095	1.825	1.988	1.623	1.663	2.862	2.581	2.505	2.032	.227	0.000	0.000	29.376
25	.394	2.120	2.854	3.154	3.324	3.411	3.472	3.503	2.188	1.988	1.032	.687	1.961	2.308	1.816	.235	0.000	0.000	34.448
26	.053	1.232	2.624	3.044	3.243	3.366	3.386	3.388	3.085	1.701	2.237	2.753	2.930	2.528	1.661	.160	0.000	0.000	37.390
27	.224	1.797	2.634	3.025	3.229	3.306	3.369	3.403	2.627	2.541	2.438	2.848	1.889	2.449	1.559	.189	0.000	0.000	37.525
28	.199	1.744	2.761	3.109	3.233	3.290	3.349	3.356	3.234	3.224	1.803	.778	.451	1.370	1.467	.045	0.000	0.000	33.612
29	.243	1.699	2.596	2.944	3.064	3.021	3.160	2.847	1.979	.955	.103	.044	.127	.030	.033	.030	0.000	0.000	22.874
30	.081	.420	1.198	.126	.825	2.362	2.968	2.950	.565	.026	.016	.026	.022	.083	.028	.016	0.000	0.000	11.712
AVERAGE VALUES	.141	1.067	1.956	2.146	2.493	2.647	2.616	2.474	2.162	1.617	1.602	1.410	1.171	1.213	.831	.066	0.000	0.000	M
STANDARD DEVIATION	.118	.731	1.058	1.253	1.097	1.156	1.316	1.312	1.160	1.172	1.163	1.160	1.079	1.050	.688	.074	0.000	0.000	M

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

JULY 1976

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. STD. 12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)
1	.108	1.160	1.864	2.761	2.732	.706	.803	.375	.705	.443	.005	.028	.152	.191	.054	.031	0.000	0.000	12.117
2	.173	1.116	1.919	2.847	3.058	2.489	2.160	.695	.016	.118	.082	.036	.037	.038	.094	.017	0.000	0.000	14.845
3	.144	1.481	2.423	2.842	3.032	3.147	3.169	3.142	3.150	2.849	2.960	2.864	2.356	2.040	1.405	.124	0.000	0.000	37.129
4	.021	.102	1.153	2.696	2.956	3.126	3.229	3.263	3.250	3.095	2.891	1.091	.208	.900	.258	.119	0.000	0.000	28.357
5	.070	.829	2.268	2.430	3.121	3.221	3.028	.999	1.439	1.165	.014	.020	.619	1.108	1.016	.054	0.000	0.000	21.401
6	.059	1.150	2.469	2.852	3.047	3.143	3.230	2.890	2.608	2.510	2.101	2.179	.013	.022	.348	.085	0.000	0.000	28.704
7	.070	.266	.044	2.160	1.627	2.504	1.749	.390	.055	1.004	2.139	.028	.010	.459	.047	.031	0.000	0.000	12.583
8	.127	1.445	2.368	2.768	2.997	2.931	3.220	3.024	1.216	1.592	2.720	1.292	.015	.026	.043	.019	0.000	0.000	25.802
9	.086	1.339	2.335	2.777	2.967	3.109	2.681	1.625	M	.058	.037	.034	.018	.026	.071	.127	0.000	0.000	M
10	.111	1.399	2.379	2.821	3.027	3.134	3.170	2.132	.082	.050	.096	.957	.809	.623	.415	.113	0.000	0.000	21.317
11	.111	1.435	2.425	2.858	3.102	3.255	3.346	3.410	3.392	3.334	3.204	3.070	2.852	2.567	1.711	.056	0.000	0.000	40.127
12	.109	1.414	2.377	2.832	3.072	3.195	3.214	3.246	2.868	.597	.048	.024	.122	.201	.016	.007	0.000	0.000	23.342
13	.046	.137	.048	.068	.244	.039	.026	.267	1.566	.289	.022	.239	1.344	2.270	1.547	.089	0.000	0.000	8.241
14	.101	1.591	2.562	2.929	3.142	3.289	3.329	3.341	3.298	2.844	1.337	1.230	2.204	.670	.715	.026	0.000	0.000	32.607
15	.034	1.133	.101	.096	.044	1.788	.548	.054	.833	2.455	2.517	2.685	2.069	1.706	1.394	.064	0.000	0.000	17.519
16	.068	1.437	2.496	2.930	3.208	3.318	3.377	3.374	2.700	2.332	1.083	1.760	.274	1.058	.490	.041	0.000	0.000	29.947
17	.045	1.252	2.289	2.807	2.685	1.798	3.210	2.766	3.131	1.873	2.872	.557	.008	.294	.064	.021	0.000	0.000	25.672
18	.025	.019	.101	.023	.116	.094	.074	.910	2.160	.959	.062	.271	.018	.018	.024	.020	0.000	0.000	4.895
19	.019	.019	.027	.040	.115	.629	.160	.098	.458	1.065	.208	.024	.022	.017	.020	.020	0.000	0.000	2.939
20	.013	.363	.560	.028	.023	.025	.026	.115	.691	.648	.238	.014	.220	.859	.159	.013	0.000	0.000	3.994
21	.018	.963	2.077	2.406	1.323	.761	.322	.440	.052	.630	.655	.015	.024	1.553	1.632	.019	0.000	0.000	12.891
22	.043	1.385	2.480	2.930	3.153	3.248	3.323	3.207	1.232	.336	1.732	3.099	1.488	1.090	.730	.017	0.000	0.000	29.493
23	.018	1.183	2.409	2.851	3.072	2.563	3.229	3.288	3.298	2.643	1.400	2.510	2.612	2.455	1.132	.018	0.000	0.000	34.681
24	.042	1.134	1.904	2.769	3.065	3.175	3.272	3.294	3.240	3.147	2.861	2.790	2.691	2.283	.639	.019	0.000	0.000	36.324
25	.039	1.283	2.384	2.705	.827	.877	.231	.047	1.330	.179	.019	.020	.081	.056	.019	.019	0.000	0.000	10.119
26	.024	.027	.020	.031	1.153	2.613	2.436	3.098	1.414	.888	1.205	.191	.022	.860	.162	.023	0.000	0.000	14.168
27	.023	1.189	2.375	1.072	1.726	3.205	3.223	2.289	3.271	1.764	1.747	2.999	2.320	2.062	1.537	.016	0.000	0.000	30.817
28	.024	.166	.035	.034	2.112	3.033	3.070	3.177	3.204	3.147	3.090	2.150	.659	.549	.209	.022	0.000	0.000	24.679
29	.028	1.360	2.489	2.891	3.059	3.186	1.346	3.151	1.378	.097	.488	.075	.032	.041	.025	.023	0.000	0.000	19.666
30	.029	.781	2.126	1.538	1.912	.924	1.816	.634	.120	.096	.137	1.315	.635	.617	.027	.026	0.000	0.000	12.734
31	.029	.030	.044	.200	1.324	1.453	1.150	.974	1.207	1.587	1.481	.092	.342	.016	.016	.018	0.000	0.000	9.964
AVERAGE VALUES																			
STANDARD DEVIATION																			
AVERAGE VALUES																			
STANDARD DEVIATION																			

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIMETER
SERIAL NO. 11095 E6

Table 34.

AUGUST 1976

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	2.391	.013	.408	2.235	1.719	M	0.000	0.000	0.000	M
4	.014	1.182	2.145	.701	M	2.403	1.548	1.138	2.028	.118	1.712	2.793	2.467	2.235	M	0.000	0.000	0.000	M
5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
7	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
9	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
10	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
AVERAGE	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
VALUES	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
STANDARD	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
DEVIATION	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

M MISSING DATA
F ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENT PYRHELIOMETER
SERIAL NO. 11095 EA

SEPTEMBER 1976

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FURT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
4	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
7	M	M	M	M	.218	1.047	.368	.013	.014	.717	.051	.456	.019	.020	.014	0.000	0.000	0.000	M
8	0.000	.017	.021	.023	.023	.027	.025	.028	.031	.019	.025	.030	.026	.020	.020	0.000	0.000	0.000	.335
9	0.000	.065	.074	2.376	3.081	3.319	3.454	3.456	3.383	3.348	3.099	2.967	2.534	1.312	.015	0.000	0.000	0.000	32.484
10	0.000	.144	.860	1.405	2.480	2.984	3.237	2.890	2.479	2.413	1.037	2.381	.026	.027	.014	0.000	0.000	0.000	22.378
11	0.000	.142	.039	.249	1.243	.329	1.274	2.512	2.556	1.981	1.630	.640	1.849	.514	.010	0.000	0.000	0.000	14.967
12	0.000	.013	1.440	2.717	2.721	2.661	2.952	.967	.007	.094	.024	.021	.339	.025	.014	0.000	0.000	0.000	14.057
13	0.000	.181	1.730	1.834	.551	.117	.449	2.568	3.151	1.618	.953	.045	.026	.103	.017	0.000	0.000	0.000	13.343
14	0.000	.048	.021	.025	.053	.844	.160	.548	.011	.021	.029	.271	2.524	1.125	.022	0.000	0.000	0.000	5.702
15	0.000	.071	.058	.333	1.068	1.381	.911	.376	.018	.018	.011	.012	.009	.020	.015	0.000	0.000	0.000	4.303
16	0.000	.074	1.567	2.536	2.912	3.066	3.088	3.082	2.891	2.538	2.548	2.285	.885	.138	.015	0.000	0.000	0.000	27.626
17	0.000	.022	1.128	.653	.103	2.214	3.064	3.114	3.170	3.092	1.818	.130	.026	.014	.012	0.000	0.000	0.000	18.557
18	0.000	.037	1.766	2.791	3.121	3.299	3.361	3.328	3.287	3.199	2.379	.370	.020	.198	.014	0.000	0.000	0.000	27.172
19	0.000	.016	.012	.021	.017	.025	.036	.085	.015	.019	.019	.016	.013	.017	.015	0.000	0.000	0.000	.326
20	0.000	.023	.023	.028	.033	.031	.052	.251	.270	1.326	1.968	1.185	1.035	.012	.016	0.000	0.000	0.000	6.252
21	0.000	0.000	1.734	2.746	3.149	3.328	3.421	3.458	3.420	3.339	3.119	2.857	2.327	.678	0.000	0.000	0.000	0.000	33.577
22	0.000	0.000	.022	.048	.136	.035	.035	.105	.361	.759	.401	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	2.661	.407	.364	.143	0.000	0.000	0.000	0.000	M
24	0.000	0.000	.017	.020	.021	.022	.125	.022	.021	.053	.020	.021	.076	.013	0.000	0.000	0.000	0.000	.430
25	0.000	0.000	.014	.031	.698	.880	.466	.065	.547	.012	.115	.044	.018	.021	0.000	0.000	0.000	0.000	2.910
26	0.000	0.000	.041	.030	.031	.865	1.576	.129	.490	.603	.015	.013	.016	.019	0.000	0.000	0.000	0.000	3.828
27	0.000	0.000	.021	.027	.031	.017	.024	.015	.020	.031	.019	.024	.012	.017	0.000	0.000	0.000	0.000	.257
28	0.000	0.000	.023	.038	.026	.029	.001	.072	.056	.054	.050	.067	.049	.020	0.000	0.000	0.000	0.000	.574
29	0.000	0.000	.054	.074	.067	.062	.053	.050	.041	.036	.033	.022	.025	.016	0.000	0.000	0.000	0.000	.544
30	0.000	0.000	.030	1.375	3.321	3.477	3.558	3.589	3.541	3.441	3.234	2.938	2.242	.309	0.000	0.000	0.000	0.000	31.056
AVERAGE VALUES																			
VALUES	M	M	M	M	1.091	1.307	1.382	1.336	1.295	1.249	1.053	.748	.629	.210	.009	0.000	0.000	0.000	M
STANDARD DEVIATION	M	M	M	M	1.321	1.372	1.467	1.489	1.503	1.351	1.224	1.088	.946	.362	.008	0.000	0.000	0.000	M

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

Table 36.

OCTOBER 197A

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	0.000	0.000	1.634	2.839	3.219	3.388	3.482	3.512	3.463	2.811	2.185	1.503	.887	.041	0.000	0.000	0.000	0.000	28.963
2	0.000	0.000	.089	.055	.625	.717	2.223	.672	.306	.581	1.950	1.377	1.628	.017	0.000	0.000	0.000	0.000	10.238
3	0.000	0.000	1.595	2.801	3.176	3.257	1.359	.021	.226	.195	.066	1.704	.616	.094	0.000	0.000	0.000	0.000	15.110
4	0.000	0.000	.020	.190	.333	1.614	3.281	1.362	.430	.047	.066	.142	.235	.019	0.000	0.000	0.000	0.000	7.738
5	0.000	0.000	.018	.020	.156	2.535	.194	.263	1.325	1.693	2.691	1.822	.024	.015	0.000	0.000	0.000	0.000	M
6	0.000	0.000	.023	.022	.011	.021	.434	1.082	2.520	2.035	.032	.083	.020	.017	0.000	0.000	0.000	0.000	6.300
7	0.000	0.000	1.372	2.823	3.312	3.488	3.547	3.554	3.536	3.428	3.229	2.959	2.221	.014	0.000	0.000	0.000	0.000	33.484
8	M	M	M	M	M	M	M	M	M	M	M	3.095	2.552	.002	0.000	0.000	0.000	0.000	M
9	0.000	0.000	1.367	2.844	3.286	3.452	3.537	3.562	3.537	3.468	3.309	2.987	2.306	.006	0.000	0.000	0.000	0.000	33.642
10	0.000	0.000	.830	2.755	3.343	3.512	3.565	3.574	3.523	3.427	3.222	2.801	2.159	.006	0.000	0.000	0.000	0.000	32.715
11	0.000	0.000	.038	.029	.091	.020	.038	.011	.032	.011	.030	.022	.020	.018	0.000	0.000	0.000	0.000	.361
12	0.000	0.000	.135	1.017	2.973	3.145	3.275	3.313	3.270	3.155	3.024	2.563	.968	.025	0.000	0.000	0.000	0.000	26.867
13	0.000	0.000	.982	2.621	3.138	M	M	M	M	M	M	2.947	1.524	.001	0.000	0.000	0.000	0.000	M
14	0.000	0.000	1.081	2.479	3.371	3.217	3.542	3.672	3.660	3.493	3.304	3.129	1.584	.003	0.000	0.000	0.000	0.000	32.536
15	0.000	0.000	.870	2.174	3.133	3.412	3.533	3.546	3.509	3.067	2.149	.642	.795	.004	0.000	0.000	0.000	0.000	26.833
16	0.000	0.000	.699	2.457	3.211	3.388	3.510	3.520	3.427	3.255	3.079	2.556	1.191	.004	0.000	0.000	0.000	0.000	30.297
17	0.000	0.000	.008	.529	1.404	2.946	2.569	.617	3.111	2.960	.440	.010	.006	0.000	0.000	0.000	0.000	0.000	14.599
18	0.000	0.000	1.225	2.553	2.965	2.121	2.016	.268	.355	.645	.439	.955	.779	.015	0.000	0.000	0.000	0.000	14.335
19	0.000	0.000	.995	2.633	3.358	3.086	3.204	3.636	3.644	3.472	3.338	2.805	1.346	.005	0.000	0.000	0.000	0.000	31.521
20	0.000	0.000	.921	2.883	3.376	3.472	3.627	3.619	3.559	M	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	M
21	M	M	M	M	M	M	M	M	M	M	3.351	3.082	1.085	0.000	0.000	0.000	0.000	0.000	M
22	0.000	0.000	.196	.396	.124	1.491	3.475	3.654	3.545	3.286	2.381	.227	.102	.007	0.000	0.000	0.000	0.000	18.884
23	0.000	0.000	.574	2.543	3.168	3.417	3.313	2.776	2.322	2.207	1.158	2.031	.564	0.000	0.000	0.000	0.000	0.000	24.074
24	0.000	0.000	.140	.466	2.129	3.066	3.205	3.070	2.981	2.330	1.867	1.939	.077	0.000	0.000	0.000	0.000	0.000	21.268
25	0.000	0.000	.005	.002	0.000	1.301	3.174	3.188	3.195	3.165	1.560	.338	.128	.005	0.000	0.000	0.000	0.000	16.061
26	0.000	0.000	.017	M	.011	.014	.021	.010	.007	0.000	0.000	.015	0.000	.008	0.000	0.000	0.000	0.000	M
27	0.000	0.000	.220	.077	1.224	.241	1.348	1.492	.593	2.805	1.816	2.057	.328	0.000	0.000	0.000	0.000	0.000	12.201
28	0.000	0.000	.550	2.667	3.400	3.665	3.725	3.750	3.718	3.620	3.436	3.036	.748	.012	0.000	0.000	0.000	0.000	32.327
29	0.000	0.000	.455	2.431	3.202	3.494	3.574	3.603	3.586	3.521	3.323	2.846	.572	.007	0.000	0.000	0.000	0.000	30.613
30	0.000	0.000	.124	1.003	0.000	.003	.072	.868	2.084	2.223	2.558	2.298	.490	0.000	0.000	0.000	0.000	0.000	11.723
31	0.000	0.000	.333	2.344	3.234	3.533	3.641	3.646	3.444	2.161	2.648	2.653	.516	0.000	0.000	0.000	0.000	0.000	28.152

AVERAGE	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
VALUES	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
STANDARD																			
DEVIATION																			

M E MISSING DATA
ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

Table 37.

NOVEMBER 1976

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	MTN. STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	0.000	0.000	.339	1.963	3.171	3.487	3.596	3.692	2.399	2.173	2.651	2.006	.540	0.000	0.000	0.000	0.000	0.000	26.019
2	0.000	0.000	.015	1.968	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
4	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
7	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	M	M	2.654	2.594	.234	0.000	0.000	0.000	0.000	0.000	M
9	0.000	0.000	0.000	1.928	2.807	3.339	3.476	3.512	3.465	3.231	2.103	.454	.061	0.000	0.000	0.000	0.000	0.000	24.377
10	0.000	0.000	0.000	.086	.780	.127	.157	1.163	.169	.028	.032	.007	.001	0.000	0.000	0.000	0.000	0.000	2.549
11	0.000	0.000	0.000	.004	M	.006	.002	.005	.002	.002	.004	.004	.004	0.000	0.000	0.000	0.000	0.000	M
12	0.000	0.000	0.000	.004	.008	.005	.002	.005	.003	.007	.006	.005	.006	0.000	0.000	0.000	0.000	0.000	.051
13	0.000	0.000	0.000	.009	.007	.010	.008	.005	.002	.008	.004	.006	.003	0.000	0.000	0.000	0.000	0.000	.062
14	0.000	0.000	0.000	.662	2.384	3.218	2.250	.280	1.651	.240	.632	.223	.031	0.000	0.000	0.000	0.000	0.000	11.570
15	0.000	0.000	0.000	2.285	3.283	3.641	3.745	3.798	3.766	3.612	3.273	2.528	.073	0.000	0.000	0.000	0.000	0.000	30.004
16	0.000	0.000	0.000	1.828	2.940	3.206	3.155	3.503	2.583	3.431	3.092	2.487	.031	0.000	0.000	0.000	0.000	0.000	26.256
17	0.000	0.000	0.000	2.018	3.047	3.506	3.591	3.611	3.431	3.378	3.060	2.253	.011	0.000	0.000	0.000	0.000	0.000	27.906
18	0.000	0.000	0.000	.321	1.972	2.198	.065	.006	.002	.001	.004	.242	.009	0.000	0.000	0.000	0.000	0.000	4.819
19	0.000	0.000	0.000	1.339	2.772	3.282	3.450	3.433	3.399	2.898	1.320	1.129	.002	0.000	0.000	0.000	0.000	0.000	23.024
20	0.000	0.000	0.000	1.539	2.727	3.218	2.459	1.828	1.799	.916	.516	.003	.001	0.000	0.000	0.000	0.000	0.000	15.007
21	0.000	0.000	0.000	1.739	2.969	3.390	3.595	3.665	3.580	3.432	3.114	2.252	.002	0.000	0.000	0.000	0.000	0.000	27.739
22	0.000	0.000	0.000	.022	.015	.121	M	M	M	M	.006	.061	.006	0.000	0.000	0.000	0.000	0.000	M
23	M	M	M	M	M	2.137	1.217	2.694	.165	1.383	1.416	.820	.003	0.000	0.000	0.000	0.000	0.000	M
24	M	M	M	M	M	2.489	2.315	3.397	2.791	3.056	3.073	1.285	.004	0.000	0.000	0.000	0.000	0.000	M
25	M	M	M	M	M	2.226	3.529	3.514	3.541	3.521	2.620	.849	.004	0.000	0.000	0.000	0.000	0.000	M
26	M	M	M	M	M	.006	.211	.400	.886	.540	.090	.255	.003	0.000	0.000	0.000	0.000	0.000	M
27	M	M	M	M	M	3.402	3.565	3.671	2.941	1.030	.577	.007	.003	0.000	0.000	0.000	0.000	0.000	M
28	M	M	M	M	M	.709	.929	.923	.713	.877	1.258	.344	.010	0.000	0.000	0.000	0.000	0.000	M
29	M	M	M	M	M	.114	1.009	.517	.067	.683	1.299	1.169	.005	0.000	0.000	0.000	0.000	0.000	M
30	M	M	M	M	M	.168	1.589	.057	.173	1.455	.878	.356	.008	0.000	0.000	0.000	0.000	0.000	M
AVERAGE VALUES																			
STANDARD DEVIATION																			
M																			
E																			

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

Table 38.

DECEMBER 1976

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	MTN. STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)
1	M	M	M	M	M	3.541	2.947	.684	.068	.255	1.532	.098	.004	0.000	0.000	0.000	0.000	0.000	M
2	M	M	M	M	M	3.347	3.524	3.580	3.561	.509	.440	.974	.003	0.000	0.000	0.000	0.000	0.000	M
3	M	M	M	M	M	.124	.682	2.496	3.529	3.116	2.616	2.009	.001	0.000	0.000	0.000	0.000	0.000	M
4	M	M	M	M	M	3.156	3.085	1.691	.391	.716	.004	.053	.004	0.000	0.000	0.000	0.000	0.000	M
5	M	M	M	M	M	.521	.570	2.446	2.832	3.144	2.884	.178	.002	0.000	0.000	0.000	0.000	0.000	M
6	M	M	M	M	M	3.204	3.449	3.541	3.554	3.335	3.091	2.110	.004	0.000	0.000	0.000	0.000	0.000	M
7	M	M	M	M	M	2.408	2.965	3.013	2.815	2.981	.057	1.100	.002	0.000	0.000	0.000	0.000	0.000	M
8	M	M	M	M	M	3.397	3.428	3.514	1.283	.091	.048	.017	.003	0.000	0.000	0.000	0.000	0.000	M
9	M	M	M	M	M	.025	.032	.029	.015	.235	.173	.873	.002	0.000	0.000	0.000	0.000	0.000	M
10	M	M	M	M	M	3.316	3.473	3.577	3.552	3.426	3.151	1.773	.000	0.000	0.000	0.000	0.000	0.000	M
11	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	.047	.042	.039	.030	.023	.018	.010	.001	0.000	0.000	0.000	0.000	0.000	M
14	0.000	0.000	0.000	.011	.047	.196	.399	.894	3.254	3.259	3.064	2.100	.004	0.000	0.000	0.000	0.000	0.000	13.229
15	0.000	0.000	0.000	.178	2.865	3.423	2.710	1.732	3.525	3.383	3.021	2.001	.003	0.000	0.000	0.000	0.000	0.000	22.838
16	0.000	0.000	0.000	.269	1.304	2.431	2.439	1.286	.208	.048	.028	.020	.012	0.000	0.000	0.000	0.000	0.000	8.045
17	0.000	0.000	0.000	.022	2.019	3.338	3.570	2.018	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	3.002	3.458	3.672	3.727	3.672	3.505	3.180	2.379	.002	0.000	0.000	0.000	0.000	0.000	M
21	0.000	0.000	0.000	.983	2.919	3.516	3.723	3.805	3.728	1.123	.099	.027	.001	0.000	0.000	0.000	0.000	0.000	19.922
22	0.000	0.000	0.000	.010	.425	3.150	3.638	3.746	3.722	3.610	3.336	2.277	.005	0.000	0.000	0.000	0.000	0.000	23.919
23	0.000	0.000	0.000	.439	.036	.010	.038	.010	.008	2.499	3.049	2.271	.005	0.000	0.000	0.000	0.000	0.000	8.364
24	0.000	0.000	0.000	.007	2.044	2.976	1.351	.010	.006	.007	.002	.005	.003	0.000	0.000	0.000	0.000	0.000	6.412
25	0.000	0.000	0.000	.027	.378	2.285	1.670	.288	1.959	3.122	3.098	2.616	.003	0.000	0.000	0.000	0.000	0.000	15.446
26	0.000	0.000	0.000	.790	2.071	2.298	2.081	3.566	2.964	.498	.039	.184	.009	0.000	0.000	0.000	0.000	0.000	14.500
27	0.000	0.000	0.000	.045	.281	.421	.442	.444	.249	.264	.352	.291	.004	0.000	0.000	0.000	0.000	0.000	2.793
28	0.000	0.000	0.000	.055	2.315	3.364	3.545	3.586	3.574	3.531	3.313	2.720	.037	0.000	0.000	0.000	0.000	0.000	26.040
29	0.000	0.000	0.000	.013	1.761	3.091	3.607	3.371	2.325	1.306	2.135	2.659	.063	0.000	0.000	0.000	0.000	0.000	20.332
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
AVERAGE VALUES	M	M	M	M	M	2.282	2.283	2.124	2.118	1.833	1.614	1.198	.007	0.000	0.000	0.000	0.000	0.000	M
STANDARD DEVIATION	M	M	M	M	M	1.383	1.401	1.465	1.556	1.485	1.460	1.064	.014	0.000	0.000	0.000	0.000	0.000	M

JANUARY 1977

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	.702	2.170	2.912	1.133	.022	.009	0.000	0.000	0.000	0.000	0.000	M
4	0.000	0.000	0.000	.005	.011	.006	.016	.015	.013	.019	.180	.306	.003	0.000	0.000	0.000	0.000	0.000	.575
5	0.000	0.000	0.000	.096	1.622	2.804	2.161	.708	1.465	.063	.009	.011	.002	0.000	0.000	0.000	0.000	0.000	8.941
6	0.000	0.000	0.000	.477	.552	.253	.104	.857	1.636	2.046	.779	2.448	.288	0.000	0.000	0.000	0.000	0.000	9.440
7	0.000	0.000	0.000	.780	2.683	3.321	3.577	3.659	3.250	.510	2.122	.108	.012	0.000	0.000	0.000	0.000	0.000	20.022
8	0.000	0.000	0.000	.003	.010	.061	.050	.059	.141	.120	.027	.004	.006	0.000	0.000	0.000	0.000	0.000	.481
9	0.000	0.000	0.000	.756	2.828	3.464	3.702	3.804	3.737	3.740	3.486	2.967	.458	0.000	0.000	0.000	0.000	0.000	28.941
10	0.000	0.000	0.000	.746	2.370	3.290	3.322	1.499	.374	.376	M	1.834	.159	0.000	0.000	0.000	0.000	0.000	M
11	0.000	0.000	0.000	.802	2.761	3.427	3.652	3.687	3.714	3.576	3.313	2.780	.468	0.000	0.000	0.000	0.000	0.000	28.179
12	0.000	0.000	0.000	.433	.024	.007	.010	.017	.012	.009	.002	.379	.046	0.000	0.000	0.000	0.000	0.000	.940
13	0.000	0.000	0.000	.786	2.731	3.325	3.574	3.682	3.671	3.546	1.655	.018	.066	0.000	0.000	0.000	0.000	0.000	23.055
14	0.000	0.000	0.000	.750	2.664	3.328	3.596	3.454	1.151	.342	1.045	2.669	.319	0.000	0.000	0.000	0.000	0.000	19.318
15	0.000	0.000	0.000	.016	.005	.010	.208	.033	.090	.526	.074	.016	.007	0.000	0.000	0.000	0.000	0.000	.985
16	0.000	0.000	0.000	.107	.743	2.899	3.462	3.676	3.296	1.428	.720	.780	.444	0.000	0.000	0.000	0.000	0.000	17.554
17	0.000	0.000	0.000	.057	.723	.188	1.580	1.247	1.701	1.845	.097	.025	.012	0.000	0.000	0.000	0.000	0.000	7.476
18	0.000	0.000	0.000	.009	.021	.089	.229	.006	.014	.525	.122	.826	.382	0.000	0.000	0.000	0.000	0.000	2.224
19	0.000	0.000	0.000	.004	.136	3.204	3.510	3.598	3.614	3.358	2.786	2.440	.533	0.000	0.000	0.000	0.000	0.000	23.184
20	0.000	0.000	0.000	.273	2.809	3.426	3.660	2.099	.097	.031	2.894	2.781	.465	0.000	0.000	0.000	0.000	0.000	18.534
21	0.000	0.000	0.000	.024	.720	2.161	.685	.003	.004	.003	.002	.001	.003	0.000	0.000	0.000	0.000	0.000	3.607
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	3.535	3.678	3.754	2.654	3.002	2.717	2.722	1.105	0.000	0.000	0.000	0.000	0.000	M
25	0.000	0.000	0.000	1.089	2.929	3.517	3.763	3.820	3.820	3.763	3.620	3.253	1.303	0.000	0.000	0.000	0.000	0.000	30.876
26	0.000	0.000	0.000	.460	1.403	3.307	3.347	3.659	1.044	.009	.007	.005	.566	0.000	0.000	0.000	0.000	0.000	13.808
27	0.000	0.000	0.000	1.121	2.923	3.492	3.718	3.801	3.818	3.768	3.566	3.151	1.418	0.000	0.000	0.000	0.000	0.000	30.775
28	0.000	0.000	0.000	.005	.768	2.879	2.981	3.133	3.495	3.506	3.447	3.062	1.175	0.000	0.000	0.000	0.000	0.000	24.452
29	0.000	0.000	0.000	1.076	2.815	3.404	3.621	3.696	3.744	2.899	2.000	.254	.522	0.000	0.000	0.000	0.000	0.000	24.031
30	0.000	0.000	0.000	.856	2.851	3.371	3.576	3.684	3.710	3.572	3.400	2.427	.708	0.000	0.000	0.000	0.000	0.000	28.155
31	0.000	0.000	0.000	1.014	2.848	3.452	3.703	2.046	2.177	3.477	3.187	3.037	1.079	0.000	0.000	0.000	0.000	0.000	26.022
AVERAGE VALUES																			
STANDARD DEVIATION																			
0.000 0.000 0.000 .470 1.598 2.393 2.519 2.237 2.023 1.814 1.630 1.420 .428 0.000 0.000 0.000 0.000 0.000 0.000 16.316																			
0.000 0.000 0.000 .415 1.215 1.456 1.527 1.593 1.535 1.568 1.439 1.335 .443 0.000 0.000 0.000 0.000 0.000 0.000 10.873																			

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

Table 40.

FEBRUARY 1977

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	MTN. STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)
1	0.000	0.000	0.000	.009	.035	.099	.555	.328	.027	.030	.041	.563	.083	0.000	0.000	0.000	0.000	0.000	1.770
2	0.000	0.000	0.000	.003	.063	.788	1.518	.228	1.573	2.547	2.154	2.281	.545	0.000	0.000	0.000	0.000	0.000	11.700
3	0.000	0.000	0.000	1.276	2.909	3.485	3.664	3.730	3.764	3.612	3.447	2.402	.870	0.000	0.000	0.000	0.000	0.000	29.159
4	0.000	0.000	0.000	1.089	2.716	3.309	3.568	3.647	3.504	3.642	3.365	2.881	1.169	0.000	0.000	0.000	0.000	0.000	28.892
5	0.000	0.000	.008	.208	.312	.011	.101	.034	.267	.442	.211	.321	.007	.004	0.000	0.000	0.000	0.000	1.927
6	0.000	0.000	.004	1.145	2.669	3.188	3.436	3.554	3.147	3.368	1.350	.098	.137	.002	0.000	0.000	0.000	0.000	22.098
7	0.000	0.000	.005	.876	2.718	3.500	3.696	3.796	3.748	3.320	3.436	2.944	1.878	.002	0.000	0.000	0.000	0.000	29.919
8	0.000	0.000	.009	1.396	3.041	3.553	3.716	3.781	3.849	3.807	3.642	3.010	1.434	.004	0.000	0.000	0.000	0.000	31.242
9	0.000	0.000	.001	1.614	3.090	3.573	3.740	3.837	3.866	3.765	3.599	3.049	1.665	.000	0.000	0.000	0.000	0.000	31.797
10	0.000	0.000	.003	1.453	2.851	3.384	3.602	3.626	3.608	3.554	3.359	2.945	1.739	.003	0.000	0.000	0.000	0.000	30.127
11	0.000	0.000	.005	1.277	.040	.081	.781	.274	1.335	1.690	2.660	1.923	1.278	.003	0.000	0.000	0.000	0.000	11.346
12	0.000	0.000	.014	.486	.030	.025	.017	.019	2.766	2.267	.953	.970	.713	.006	0.000	0.000	0.000	0.000	8.266
13	0.000	0.000	.014	.064	.067	.793	.185	3.155	3.309	3.348	2.022	3.023	1.982	.003	0.000	0.000	0.000	0.000	17.966
14	0.000	0.000	.026	.038	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
AVERAGE VALUES	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
STANDARD DEVIATION	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

Table 41.

MARCH 1977

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. STD. TIME 12-13 13-14 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	.007	.005	.006	.002	.003	.009	.006	.008	0.000	0.000	0.000
3	0.000	0.000	.013	.022	.109	1.268	2.191	1.796	3.193	2.501	2.332	1.688	.115	.006	0.000	0.000	0.000
4	0.000	0.000	.381	1.385	2.532	3.240	2.439	2.865	3.497	3.788	3.748	3.517	2.665	.004	0.000	0.000	0.000
5	0.000	0.000	.338	.320	.550	2.142	3.078	1.870	.753	1.431	.414	1.809	1.541	.683	0.000	0.000	0.000
6	0.000	0.000	.263	1.931	2.847	3.326	3.612	3.780	3.776	3.711	3.487	3.347	2.644	.767	0.000	0.000	0.000
7	0.000	0.000	.655	2.464	3.328	3.039	2.443	.079	.391	.574	1.297	1.087	2.630	.708	0.000	0.000	0.000
8	0.000	0.000	.194	.166	1.511	3.094	3.472	3.536	3.370	2.938	.810	.464	2.285	.597	0.000	0.000	0.000
9	0.000	0.000	.537	2.345	2.636	2.861	2.124	.045	.044	.159	.359	2.701	2.657	.763	0.000	0.000	0.000
10	M	M	M	M	M	M	M	M	M	M	M	.019	.001	.007	0.000	0.000	0.000
11	0.000	0.000	.008	.011	.083	.033	.010	.013	.011	.007	.013	.012	.008	.007	0.000	0.000	0.000
12	0.000	0.000	.013	.010	.240	3.663	3.887	3.954	3.978	3.977	3.934	3.739	3.130	1.064	0.000	0.000	0.000
13	0.000	0.000	1.044	2.826	3.506	3.455	3.765	3.821	3.700	3.768	3.619	3.535	3.054	.863	0.000	0.000	0.000
14	0.000	0.000	.685	2.497	3.247	3.555	3.714	3.723	1.676	.013	.007	.003	.002	.003	0.000	0.000	0.000
15	0.000	0.000	.655	2.126	3.118	3.509	3.676	3.601	3.215	.178	1.237	1.025	1.975	1.165	0.000	0.000	0.000
16	0.000	0.000	1.046	2.812	3.438	3.308	2.096	1.482	3.227	3.739	3.575	3.298	2.688	.957	0.000	0.000	0.000
17	0.000	0.000	.452	2.113	2.727	.573	.231	.015	.020	.049	.010	.067	1.496	.436	0.000	0.000	0.000
18	0.000	0.000	.013	.012	.183	1.830	.107	.018	.003	.128	1.363	3.152	3.070	1.332	0.000	0.000	0.000
19	0.000	0.000	1.141	2.283	2.864	3.288	3.580	3.764	3.724	2.057	1.923	.138	2.327	1.223	0.000	0.000	0.000
20	0.000	0.000	.877	2.235	2.657	2.807	2.713	2.975	2.899	2.044	.202	.012	.002	.005	0.000	0.000	0.000
21	0.000	0.000	.074	1.415	2.462	1.868	3.463	3.475	3.837	3.677	3.081	3.425	3.025	1.467	0.000	0.000	0.000
22	0.000	0.000	1.498	3.000	3.467	3.676	3.806	3.713	3.846	3.756	3.603	3.381	2.912	1.500	0.000	0.000	0.000
23	0.000	0.000	1.294	2.993	3.450	3.678	3.788	3.819	3.782	3.655	2.573	.910	.050	.347	0.000	0.000	0.000
24	0.000	.007	.144	.080	.316	2.103	3.182	1.335	1.210	2.747	3.368	3.197	1.523	.946	.002	0.000	0.000
25	0.000	.002	.980	2.516	3.137	3.366	3.426	3.416	2.824	2.534	2.768	.506	1.154	.200	.003	0.000	0.000
26	0.000	.004	.541	2.043	2.693	3.195	3.284	1.619	2.125	.152	1.045	2.579	.875	1.052	.001	0.000	0.000
27	0.000	.014	1.671	2.956	3.384	3.617	3.724	3.712	3.680	3.568	3.304	2.413	.226	.305	.004	0.000	0.000
28	0.000	.001	.004	.108	1.778	.744	1.148	2.795	2.166	.331	2.966	3.294	.884	.011	.004	0.000	0.000
29	0.000	.012	.011	.015	2.687	.908	.287	.085	.119	.042	.027	.012	.016	.014	.003	0.000	0.000
30	0.000	.010	.022	.204	3.359	3.695	3.761	3.785	3.839	3.438	3.418	2.466	2.369	.960	.003	0.000	0.000
31	0.000	.040	1.546	2.901	2.996	3.368	3.176	2.765	1.532	.926	.105	.263	.271	.004	.007	0.000	0.000
AVERAGE VALUES																	
STANDARD DEVIATION																	
0.000																	
.003																	
.575																	
1.564																	
2.332																	
2.686																	
2.627																	
2.340																	
2.291																	
1.927																	
1.882																	
1.736																	
1.520																	
.580																	
.001																	
0.000																	
0.000																	
0.000																	
22.732																	
.000																	
.008																	
.529																	
1.184																	
1.206																	
1.094																	
1.334																	
1.527																	
1.523																	
1.588																	
1.471																	
1.442																	
1.207																	
.512																	
.002																	
0.000																	
0.000																	
0.000																	
9.747																	

M E MISSING DATA
ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

Table 42.

APRIL 1977

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	0.000	.027	1.338	2.543	3.088	2.203	.301	.012	.008	.056	.006	.007	.096	.005	.006	0.000	0.000	0.000	4.696
2	0.000	.007	.005	.006	.007	.007	.004	.008	.003	.002	.006	.004	.034	.023	.005	0.000	0.000	0.000	.120
3	0.000	.035	2.008	3.002	3.448	3.661	3.765	3.823	3.784	3.570	3.480	3.014	2.844	1.717	.004	0.000	0.000	0.000	38.158
4	0.000	.005	.047	.075	.032	.019	.044	.044	.046	.207	.288	.819	.429	.737	.007	0.000	0.000	0.000	2.801
5	0.000	.158	1.566	2.941	3.544	3.772	3.863	3.866	3.920	3.693	3.728	3.545	3.196	2.400	.007	0.000	0.000	0.000	40.198
6	0.000	.294	2.284	3.268	3.630	3.801	3.888	3.888	3.857	3.767	M	M	M	M	M	M	M	M	M
7	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
9	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
10	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	3.767	3.691	3.541	2.148	1.163	.721	.097	0.000	0.000	0.000	M
23	0.000	.682	2.203	2.840	3.141	3.332	3.396	1.973	1.044	3.220	2.731	2.436	1.500	.964	.004	0.000	0.000	0.000	29.465
24	0.000	.731	2.356	3.038	3.354	3.342	3.297	3.269	3.092	2.811	2.440	M	M	M	M	M	M	M	M
25	M	M	M	3.278	3.475	3.593	3.606	3.604	2.811	2.896	1.763	1.754	2.531	1.420	.238	0.000	0.000	0.000	M
26	0.000	.835	2.457	3.104	3.250	3.452	3.591	2.948	2.614	2.219	2.626	2.347	2.035	.994	.184	0.000	0.000	0.000	32.657
27	0.000	.106	.549	1.790	.654	.004	.004	.007	.006	.010	.005	.143	.099	.001	.001	0.000	0.000	0.000	3.377
28	0.000	.044	.394	1.480	2.289	2.766	1.490	.009	.012	.008	.005	.002	.006	.003	.003	0.000	0.000	0.000	8.511
29	0.000	.426	.617	.079	.120	1.227	1.030	.006	.112	.002	.010	1.640	1.346	.415	.002	0.000	0.000	0.000	7.031
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
AVERAGE VALUES																			
STANDARD DEVIATION																			
M																			
M																			

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

MAY 1977		DIRECT SOLAR COMPONENT HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)										FUMT COLLINS COLORADO COLUMADO STATE UNIVERSITY DEPARTMENT OF ATMOSPHERIC SCIENCE									
DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STO. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)		
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
2	M	M	M	M	3,317	3,399	3,450	3,472	3,043	1,915	2,374	2,438	1,323	.814	.035	0.000	0.000	0.000	M		
3	0.000	.006	.022	1.631	2,338	1,637	.980	2.161	2,336	.221	.028	.237	.006	.005	.004	0.000	0.000	0.000	11.512		
4	0.000	.033	.439	2,424	2,338	2,377	3,635	3,115	3,074	3,650	3,519	3,243	2,849	2,206	.208	0.000	0.000	0.000	33.109		
5	0.000	.052	.440	.469	3,028	3,490	3,577	3,605	3,541	3,322	2,014	2,884	2,469	1,086	.034	0.000	0.000	0.000	30.013		
6	0.000	.895	2,231	1,595	2,064	2,910	3,413	3,478	3,496	1,800	3,269	3,049	2,654	1,972	.433	0.000	0.000	0.000	33.259		
7	0.000	.008	.002	.031	.004	.151	.677	1,281	.432	1,287	1,755	2,826	2,559	1,800	.031	0.000	0.000	0.000	12.845		
8	0.000	.888	1,773	2,290	2,289	3,382	3,499	3,594	3,655	3,593	2,990	1,855	.301	.034	.150	0.000	0.000	0.000	30.293		
9	.003	1,410	2,730	3,132	3,335	3,443	3,473	3,507	3,526	3,509	3,445	1,103	.004	.002	.004	.004	0.000	0.000	32.631		
10	.002	.001	.541	2,495	2,970	3,182	3,038	3,326	2,150	.013	1,495	.259	.029	.364	.805	.004	0.000	0.000	20.674		
11	.016	1,805	2,839	3,232	3,500	3,667	3,683	3,382	3,042	1,478	2,433	1,611	2,357	2,386	.488	.003	0.000	0.000	35.920		
12	.007	.147	.015	.087	.749	.093	.160	1,315	1,534	3,156	2,001	1,410	1,104	1,414	.519	.003	0.000	0.000	13.716		
13	.003	.012	.088	.099	.324	.204	1,552	1,335	2,543	3,509	1,573	2,803	2,497	.200	.002	.003	0.000	0.000	16.747		
14	.005	.003	.648	2,544	3,141	1,759	.586	.036	1,187	2,976	.154	.049	.003	.002	.005	.005	0.000	0.000	13.101		
15	.101	.550	2,017	1,398	.477	1,718	2,264	2,997	2,238	1,597	1,236	.530	.071	.164	.280	.001	0.000	0.000	17.639		
16	.052	.284	.028	.110	2,701	3,349	3,144	2,149	.187	.016	.073	2,185	1,434	1,171	.549	.000	0.000	0.000	17.432		
17	.003	.198	1,849	2,511	2,851	2,892	2,985	3,316	3,503	M	M	.243	.399	2,208	.927	.002	0.000	0.000	M		
18	.006	1,093	2,594	3,016	3,293	3,418	3,468	3,476	2,355	1,733	2,306	.991	.927	.315	.489	.003	0.000	0.000	29.482		
19	.034	.006	2,164	3,381	3,584	3,747	3,409	2,972	3,444	2,413	1,721	.005	.060	.019	.002	.003	0.000	0.000	26.964		
20	.003	.006	.006	.006	.073	1,461	.857	.892	.012	.016	.411	.314	.005	.025	.083	.003	0.000	0.000	4.171		
21	.003	1,547	2,928	3,312	3,356	2,939	3,157	2,816	2,567	1,363	1,341	2,053	.579	1,002	1,023	.003	0.000	0.000	29.986		
22	.105	1,535	2,574	3,087	3,324	2,051	2,652	1,892	.340	1,903	.582	1,176	1,697	.745	.006	.004	0.000	0.000	23.675		
23	.036	.049	.472	.138	2,174	3,047	3,446	3,572	3,252	2,328	1,447	2,268	.899	.025	.032	.001	0.000	0.000	23.187		
24	.050	1,018	1,799	M	M	M	1,875	1,656	2,418	.903	.629	1,157	.548	.233	.004	.004	0.000	0.000	M		
25	.004	.270	1,995	.211	.170	.716	1,657	.797	.998	.850	.297	.057	.035	.006	.007	.006	0.000	0.000	8.076		
26	.087	.831	1,678	1,968	2,384	2,015	2,530	2,473	2,926	1,250	.824	.003	.001	.009	.028	.004	0.000	0.000	19.011		
27	.133	1,713	2,703	3,159	3,364	3,383	2,529	.187	.112	2,396	.924	1,991	1,863	1,540	.103	.004	0.000	0.000	26.106		
28	.006	.008	.055	.319	1,495	1,096	.151	.603	1,614	1,785	.209	.007	.004	.103	.775	.006	0.000	0.000	8.235		
29	.117	1,686	2,633	2,703	3,227	2,715	2,673	2,895	2,385	1,903	.763	.374	.036	.005	.007	.014	0.000	0.000	24.135		
30	.009	.522	2,576	3,053	3,338	3,421	3,497	3,350	3,383	3,345	2,903	2,246	2,244	1,407	.086	.004	0.000	0.000	35.385		
31	.227	1,937	2,891	3,307	3,499	3,566	3,631	3,649	3,623	3,550	3,467	3,302	3,039	2,450	.800	.005	0.000	0.000	42.942		
AVERAGE VALUES		.030	.638	1,473	1,847	2,369	2,456	2,518	2,443	2,297	1,992	1,592	1,422	1,067	.790	.264	.003	0.000	0.000	22.972	
STANDARD DEVIATION		.055	.682	1,124	1,290	1,195	1,152	1,163	1,155	1,189	1,167	1,119	1,128	1,078	.857	.328	.003	0.000	0.000	9.948	

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATION

INSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

Table 44.

JUNE 1977

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	.283	2.048	2.926	3.316	3.500	3.575	3.604	3.619	3.559	2.969	3.381	3.095	.658	.001	.533	.002	0.000	0.000	37.074
2	.234	.678	1.552	2.085	2.737	2.658	1.273	.172	.009	.072	.146	.540	.591	.424	.305	.001	0.000	0.000	13.476
3	.184	1.735	2.041	2.979	3.210	3.040	1.655	2.950	2.639	.083	0.000	.897	.714	.510	.505	.001	0.000	0.000	23.145
4	.179	1.743	2.650	3.091	3.302	3.420	3.495	3.501	3.469	3.403	3.130	3.116	2.818	2.339	1.239	.026	0.000	0.000	40.920
5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	.037	.067	.042	.064	.353	.286	.040	.041	.027	.002	.002	0.000	.001	0.000	0.000	M
7	.004	.023	.065	.073	.072	.068	.044	.201	.192	1.452	1.057	.056	.000	.000	.001	.001	0.000	0.000	3.308
8	.005	.022	.052	2.611	3.227	3.334	3.058	.680	2.266	1.199	.342	.000	.003	.036	M	M	M	M	M
9	M	M	M	1.625	2.049	2.948	3.365	3.245	1.307	.227	.204	.000	.004	.138	.402	.035	0.000	0.000	M
10	.188	1.677	2.546	2.997	3.230	3.355	3.559	3.640	2.697	2.495	2.075	1.717	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	1.264	1.022	2.458	1.843	.003	.009	.255	.737	1.012	1.277	2.017	1.271	.048	0.000	0.000	M
14	.182	1.758	2.752	3.257	3.481	3.527	3.560	3.544	3.268	3.044	2.683	2.292	.565	.199	.062	.018	0.000	0.000	34.192
15	.316	2.136	2.987	3.340	3.491	3.536	3.536	3.561	3.580	3.625	3.264	3.347	2.400	1.844	.651	.106	0.000	0.000	41.718
16	.113	1.114	.087	2.071	2.151	2.458	2.454	2.741	.662	1.603	2.938	2.849	2.547	.692	.709	.031	0.000	0.000	25.259
17	.202	1.719	2.689	3.114	3.315	3.389	3.060	3.135	2.575	2.489	1.480	.404	.038	.002	.006	.002	0.000	0.000	27.617
18	.004	.006	.004	.009	.021	.039	.022	.007	.010	1.755	2.155	.015	.190	.251	.409	.002	0.000	0.000	4.898
19	.004	.008	.007	.012	.010	.015	.025	.031	.421	.727	.334	.149	.012	.007	.004	.001	0.000	0.000	1.765
20	.007	.010	.012	.009	.017	.006	.014	.185	.182	.975	1.272	1.554	2.243	2.136	1.133	.082	0.000	0.000	9.836
21	.003	.003	.010	2.188	3.216	3.423	2.865	2.920	2.070	1.845	2.526	.544	1.456	.896	.429	.001	0.000	0.000	24.397
22	.170	1.681	2.620	3.051	3.252	3.389	3.304	1.822	1.161	3.364	.309	1.168	2.080	1.945	1.096	.056	0.000	0.000	30.468
23	.079	.393	1.191	1.806	2.335	2.263	1.708	.985	1.507	.310	.164	.172	.822	.182	.003	.006	0.000	0.000	13.927
24	.143	1.800	2.584	2.292	2.659	2.723	2.851	3.533	3.530	3.516	3.438	3.277	2.973	2.253	.048	.003	0.000	0.000	37.623
25	.010	.073	.229	.365	1.738	3.517	3.559	3.601	3.595	3.508	2.880	.777	.003	.007	.013	.004	0.000	0.000	23.878
26	.008	.306	.781	2.968	2.900	3.400	1.616	2.398	1.966	1.492	.637	1.572	1.018	.091	.392	.152	0.000	0.000	21.694
27	.266	1.918	1.730	2.955	3.295	3.320	3.469	3.524	3.529	3.007	2.078	1.908	2.716	1.435	.831	.001	0.000	0.000	35.983
28	.002	.032	.091	M	.498	.502	.140	.174	.206	.122	.099	.070	.049	.035	.024	.005	0.000	0.000	M
29	.011	.060	.030	.016	.007	.007	.012	.008	.014	.058	.938	.020	.009	.091	.521	.004	0.000	0.000	1.804
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
AVERAGE VALUES																			
STANDARD DEVIATION																			
.113																			
.108																			

MISSING DATA
ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

Table 45.

JULY 1977

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FUMT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
4	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
5	M	M	M	M	2.088	2.502	1.514	.440	.005	1.850	.980	.638	.026	.019	.002	.001	0.000	0.000	M
6	.214	1.897	2.735	3.109	3.370	3.496	3.277	2.561	1.763	.390	1.596	3.355	3.142	1.200	1.434	.172	0.000	0.000	33.714
7	.115	1.859	2.801	3.213	3.424	3.540	1.849	2.731	3.483	1.566	.001	.000	.872	2.777	1.833	.159	0.000	0.000	30.225
8	.002	.021	.006	.386	1.516	1.029	1.034	2.119	1.094	2.043	1.078	.004	.217	.641	1.022	.126	0.000	0.000	12.337
9	.012	.114	.043	1.743	.563	1.654	1.950	1.790	2.782	1.440	.405	.062	.002	.227	1.569	.156	0.000	0.000	14.510
10	.121	1.660	2.748	3.179	3.354	3.356	3.657	3.712	3.576	2.181	3.248	2.032	3.114	2.587	1.666	.105	0.000	0.000	40.295
11	.082	1.563	2.625	3.088	3.341	3.462	3.533	3.550	2.635	2.648	2.778	2.574	2.510	.222	.002	0.000	0.000	0.000	34.610
12	.105	1.631	2.692	3.165	3.405	3.522	3.571	3.566	2.266	2.183	2.967	2.915	2.816	1.001	.025	.003	0.000	0.000	35.833
13	.014	.254	.343	.472	.978	.285	.022	.044	.172	.242	.033	.008	.482	.101	.000	.003	0.000	0.000	3.454
14	.047	1.440	2.559	2.970	3.179	3.252	2.532	1.040	3.319	1.136	.124	1.620	2.795	1.168	.251	.050	0.000	0.000	27.482
15	.064	1.448	2.463	2.926	3.147	3.252	3.326	.263	.135	1.903	3.126	1.720	2.415	2.539	.791	.000	0.000	0.000	29.517
16	.078	1.544	2.583	3.024	3.229	3.265	2.296	1.466	.845	.591	.669	.862	.579	.015	.002	.000	0.000	0.000	21.049
17	.050	1.292	2.399	2.544	3.133	3.249	1.125	.720	1.777	1.100	.054	.200	.131	.005	.005	.002	0.000	0.000	17.785
18	.004	1.050	2.431	.579	.015	1.091	2.525	3.347	3.284	3.118	1.693	.400	.145	.000	.001	.001	0.000	0.000	19.685
19	.019	1.275	2.300	2.792	2.494	2.869	2.523	.841	.696	.042	0.000	.002	.072	.002	.000	.001	0.000	0.000	15.927
20	.000	1.181	.175	.033	.238	.023	.430	2.878	2.158	.170	.002	.039	.004	.004	.006	.005	0.000	0.000	7.344
21	.004	.001	.002	.008	.007	.006	.003	.010	.003	.028	.011	.014	.016	.037	.009	.008	0.000	0.000	.166
22	.006	.007	.006	.017	.011	.105	.912	.836	.178	.298	.624	.631	.570	.000	.001	.001	0.000	0.000	4.206
23	.004	.797	.290	2.709	1.596	2.883	3.346	3.337	3.033	1.588	1.324	2.352	.378	.001	.001	.002	0.000	0.000	23.641
24	.001	.002	.007	.023	.700	1.805	2.263	2.951	.196	.134	.166	.140	.008	.002	.038	.001	0.000	0.000	8.437
25	.005	.007	.004	.007	.004	.005	.018	.016	.005	.009	.010	.006	.005	.006	.008	.011	0.000	0.000	.125
26	.013	.012	.012	.021	.425	.968	.734	2.415	3.217	3.096	2.916	2.094	.006	2.154	1.039	.001	0.000	0.000	19.123
27	.002	.791	1.908	2.846	3.244	3.409	3.432	3.496	3.487	2.806	1.799	1.057	.340	1.340	.029	.002	0.000	0.000	29.988
28	.002	.985	2.493	2.932	3.190	3.339	3.001	3.024	1.394	3.485	3.277	3.070	1.623	.792	.730	.001	0.000	0.000	33.339
29	.008	1.385	2.661	3.167	3.411	3.495	3.482	2.897	2.828	2.735	1.139	.488	.338	.071	0.000	.001	0.000	0.000	28.104
30	.009	1.271	2.547	3.067	3.323	3.432	3.494	3.556	3.572	3.356	.912	1.505	1.277	2.678	1.619	.001	0.000	0.000	35.619
31	.005	1.126	2.589	3.174	3.459	3.579	3.591	3.606	3.560	3.473	3.342	3.162	2.824	1.820	1.115	.002	0.000	0.000	40.427
AVERAGE VALUES	.038	.947	1.593	1.969	2.105	2.329	2.202	2.119	1.906	1.615	1.269	1.146	.989	.793	.489	.030	0.000	0.000	21.805
STANDARD DEVIATION	.053	.665	1.227	1.370	1.393	1.359	1.266	1.324	1.372	1.204	1.232	1.166	1.167	.995	.663	.057	0.000	0.000	12.595

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

Table 46.

AUGUST 1977

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	MTN. STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	.001	1.374	2.732	3.230	3.458	3.537	3.608	3.669	3.669	3.627	3.509	1.870	1.974	1.230	.759	.002	0.000	0.000	38.249
2	.005	1.143	2.580	3.119	3.378	3.505	3.555	3.588	3.598	3.409	3.207	1.397	.597	.191	.113	.000	0.000	0.000	33.386
3	.010	.612	1.473	2.823	3.189	3.327	3.387	2.559	1.564	.713	.092	.024	.003	.052	.002	.000	0.000	0.000	14.829
4	.005	.974	2.351	M	3.026	3.146	2.087	.141	.501	.390	.008	.289	.376	.008	.006	.008	0.000	0.000	M
5	.008	.010	.095	2.643	1.176	.054	.093	.011	.510	.010	.011	.006	.004	.004	.002	.006	0.000	0.000	4.643
6	.007	.028	.011	.214	2.761	3.104	3.112	3.223	3.264	2.656	2.961	2.190	1.508	.302	.213	.003	0.000	0.000	25.557
7	0.000	.555	1.743	1.660	1.036	.760	1.588	3.201	3.267	1.810	.693	1.434	.775	.034	.037	0.000	0.000	0.000	18.593
8	0.000	.437	1.489	2.376	2.947	1.857	1.897	1.543	.243	.006	.020	.004	.003	.520	.064	0.000	0.000	0.000	13.407
9	0.000	.633	2.067	2.775	3.084	3.199	3.271	3.179	2.899	1.113	1.865	.820	.005	.003	.223	0.000	0.000	0.000	25.137
10	0.000	.016	1.120	2.414	2.825	3.042	2.954	3.090	1.033	.001	.006	.011	.006	.003	.003	0.000	0.000	0.000	16.525
11	0.000	.010	.010	.007	.010	.010	.007	.015	.013	.427	1.005	1.330	.745	.729	.332	0.000	0.000	0.000	4.650
12	0.000	.531	1.925	2.632	2.971	3.131	3.193	3.121	2.702	1.970	1.831	1.043	1.193	.872	.183	0.000	0.000	0.000	27.299
13	0.000	.183	.768	1.277	2.893	3.224	2.692	2.767	2.148	2.060	.116	.036	.313	.026	.081	0.000	0.000	0.000	18.583
14	0.000	.526	1.537	.008	.008	.006	.007	.011	.004	.196	.329	.493	1.824	1.324	.429	0.000	0.000	0.000	6.702
15	0.000	.006	.322	1.023	1.299	2.227	1.641	.877	.004	.001	.008	.023	.003	.006	.006	0.000	0.000	0.000	7.446
16	0.000	.003	.004	.005	.003	.008	.010	.007	.040	.148	.044	.081	.810	.882	.126	0.000	0.000	0.000	2.171
17	0.000	.003	.002	.005	.003	.005	.017	.016	.020	.018	.015	.015	.014	.008	.012	0.000	0.000	0.000	.154
18	0.000	.009	.015	.013	.013	.030	.013	.004	.871	1.785	.016	.444	.021	.392	.018	0.000	0.000	0.000	3.644
19	0.000	.003	.002	.011	.015	.015	.017	.024	.036	.012	.584	2.434	2.004	.633	.237	0.000	0.000	0.000	6.027
20	0.000	.621	2.160	2.884	3.218	3.369	3.437	3.481	3.453	3.388	3.045	2.420	1.180	.124	.002	0.000	0.000	0.000	32.781
21	0.000	.104	.064	.640	2.219	2.922	1.936	3.269	2.014	.356	.242	1.254	.537	.767	.491	0.000	0.000	0.000	16.815
22	0.000	.466	1.318	2.751	3.201	2.155	2.292	2.753	1.834	2.605	2.144	.712	1.730	1.019	.289	0.000	0.000	0.000	25.271
23	0.000	.462	1.971	2.739	1.533	2.003	3.256	3.122	.999	.357	2.561	1.651	.604	1.572	.342	0.000	0.000	0.000	23.174
24	0.000	.477	2.130	2.856	3.024	3.150	1.643	1.311	2.581	3.071	.836	.111	.054	.004	.001	0.000	0.000	0.000	21.248
25	0.000	.020	.013	.001	.011	.017	.148	3.086	1.008	2.033	.160	1.039	.050	1.028	.112	0.000	0.000	0.000	10.725
26	0.000	.640	2.318	3.012	3.308	2.735	1.714	.888	3.096	3.239	1.723	2.047	.965	0.000	.002	0.000	0.000	0.000	25.689
27	0.000	.005	.015	.718	1.478	1.303	2.100	.550	.924	1.260	1.966	2.359	1.138	.690	.027	0.000	0.000	0.000	14.532
28	0.000	.013	.009	.092	.247	.984	2.843	1.190	1.262	3.061	1.244	1.512	1.397	1.133	.009	0.000	0.000	0.000	14.994
29	0.000	.394	2.175	2.452	2.867	3.031	3.232	3.230	2.762	3.264	2.729	2.597	1.281	.305	.108	0.000	0.000	0.000	30.428
30	0.000	.616	2.478	3.173	3.418	3.512	3.386	2.580	2.776	1.782	1.765	3.255	1.775	.446	.017	0.000	0.000	0.000	30.979
31	0.000	.376	2.151	2.908	3.263	3.444	3.489	3.481	2.351	1.179	.012	.011	1.618	.890	.010	0.000	0.000	0.000	25.184
AVERAGE VALUES																			
STANDARD DEVIATION		.001	.363	1.195	1.682	1.996	2.026	2.020	1.935	1.724	1.482	1.121	1.062	.791	.490	.137	.001	0.000	18.127
		.003	.368	1.013	1.285	1.355	1.400	1.342	1.423	1.287	1.281	1.174	.974	.698	.478	.181	.002	0.000	10.504

MISSING DATA
ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

SEPTEMBER 1977

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	0.000	.174	2.158	2.956	3.258	3.463	2.062	3.513	3.219	2.964	.056	1.063	.475	.063	0.000	0.000	0.000	0.000	25.423
2	0.000	.007	.019	2.706	3.133	3.296	3.359	3.378	3.398	3.193	3.046	2.883	2.515	.056	0.000	0.000	0.000	0.000	30.988
3	0.000	.005	.010	.018	1.871	2.834	2.549	.407	.121	0.000	.063	.114	0.000	0.000	0.000	0.000	0.000	0.000	7.491
4	0.000	.101	.919	1.674	1.915	1.011	.793	.783	.740	.711	.596	.449	.142	.200	0.000	0.000	0.000	0.000	10.035
5	M	M	M	3.140	3.298	3.452	3.534	3.542	3.519	3.446	3.306	3.106	2.710	1.723	.001	0.000	0.000	0.000	M
6	0.000	.202	2.124	2.983	3.345	3.517	3.531	3.506	3.456	3.269	2.825	2.457	2.085	.348	.001	0.000	0.000	0.000	33.650
7	0.000	.077	.151	1.556	1.949	2.503	2.590	3.014	3.031	2.438	2.931	2.605	.967	1.501	.002	0.000	0.000	0.000	25.315
8	0.000	.228	.853	1.541	1.488	1.466	1.694	1.817	2.157	2.453	3.416	2.391	2.775	1.637	0.000	0.000	0.000	0.000	23.916
9	0.000	.115	1.705	2.688	3.214	3.374	3.523	3.530	3.436	3.390	1.705	.252	1.487	.406	.006	0.000	0.000	0.000	28.831
10	0.000	.149	1.973	2.900	3.278	2.276	3.281	3.367	2.382	.728	.920	2.012	.345	.003	.004	0.000	0.000	0.000	23.619
11	0.000	.007	.003	.005	.011	.009	.006	.011	.013	.012	.021	.007	.004	.004	.004	0.000	0.000	0.000	.118
12	0.000	.003	.006	1.783	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	.047	.402	.353	.215	1.479	1.794	2.379	.905	.584	.002	0.000	0.000	0.000	M
20	0.000	.098	1.224	2.631	2.968	3.534	2.854	3.646	3.280	1.351	1.215	2.652	2.291	.327	.004	0.000	0.000	0.000	28.075
21	0.000	.048	1.208	2.952	3.351	3.576	3.690	3.523	3.661	3.557	1.541	.853	.011	.003	.007	0.000	0.000	0.000	27.982
22	0.000	0.000	1.326	2.789	3.165	1.635	2.308	3.560	3.560	3.492	3.333	3.008	2.310	.587	0.000	0.000	0.000	0.000	31.074
23	0.000	0.000	.928	2.205	2.780	3.782	3.344	2.833	.106	.034	.028	.030	.035	.006	0.000	0.000	0.000	0.000	16.112
24	0.000	0.000	.056	.101	.073	.052	.048	.038	.046	.040	.038	.041	.023	.009	0.000	0.000	0.000	0.000	.564
25	0.000	0.000	.036	.042	.037	.030	.029	.029	.033	.032	.038	.048	.028	.007	0.000	0.000	0.000	0.000	.390
26	0.000	0.000	.028	.066	.021	.035	.062	.041	.023	.027	.024	.026	.017	.008	0.000	0.000	0.000	0.000	.378
27	0.000	0.000	.041	.055	.059	.049	.037	.036	.184	.809	1.496	1.280	.192	.015	0.000	0.000	0.000	0.000	4.254
28	0.000	0.000	1.788	2.992	3.378	3.506	3.015	1.716	1.377	2.721	.120	.004	.692	.442	0.000	0.000	0.000	0.000	21.752
29	0.000	0.000	.571	2.712	2.283	2.017	2.878	1.423	1.674	.066	.045	1.859	.706	.008	0.000	0.000	0.000	0.000	16.242
30	0.000	0.000	.370	.671	.009	.010	.007	.126	.015	.005	1.315	1.087	.059	.003	0.000	0.000	0.000	0.000	3.679

AVERAGE	M	M	M	1.790	M	1.977	1.982	1.921	1.724	1.575	1.299	1.331	.903	.345	.001	0.000	0.000	0.000	M
VALUES																			
STANDARD	M	M	M	1.217	M	1.506	1.443	1.540	1.529	1.445	1.278	1.167	1.020	.543	.002	0.000	0.000	0.000	M
DEVIATION																			

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

Table 48.

OCTOBER 1977

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)
1	0.000	0.000	.040	.063	.043	.040	.040	.034	.040	.032	.039	.036	.009	.012	0.000	0.000	0.000	0.000	.428
2	0.000	0.000	.014	.011	.014	.036	.048	.038	.040	.036	.031	.036	.032	.007	0.000	0.000	0.000	0.000	.343
3	0.000	0.000	.023	.758	.240	.042	.857	1.495	1.800	3.397	2.406	.394	.581	.021	0.000	0.000	0.000	0.000	12.015
4	0.000	0.000	1.127	.818	2.592	.115	.032	.190	.375	.485	.253	.105	.305	.008	0.000	0.000	0.000	0.000	6.406
5	0.000	0.000	.015	.013	.015	.016	.019	.018	.016	.018	.014	.014	.022	.008	0.000	0.000	0.000	0.000	.186
6	0.000	0.000	.012	.014	.015	.029	.155	.160	.274	.027	.019	.007	.023	.003	0.000	0.000	0.000	0.000	.739
7	0.000	0.000	1.153	2.825	3.302	3.436	2.980	2.991	2.707	3.589	3.427	2.630	.055	.003	0.000	0.000	0.000	0.000	29.096
8	0.000	0.000	.078	.163	.032	.036	.036	.038	.038	.035	.030	.028	.021	.001	0.000	0.000	0.000	0.000	.536
9	0.000	0.000	.011	.011	.051	.055	.033	.031	.035	.027	.011	.008	.018	.002	0.000	0.000	0.000	0.000	.295
10	0.000	0.000	.001	.002	.003	.005	.001	.002	.005	.026	.031	.020	.016	.002	0.000	0.000	0.000	0.000	.116
11	0.000	0.000	.015	M	3.550	3.743	3.796	3.840	3.794	3.723	3.532	3.121	2.295	.006	0.000	0.000	0.000	0.000	M
12	0.000	0.000	1.462	3.092	3.567	3.757	3.846	3.864	3.846	3.407	3.526	3.237	2.181	.008	0.000	0.000	0.000	0.000	35.793
13	0.000	0.000	1.386	3.034	3.541	3.746	3.851	3.867	3.824	3.737	3.539	3.073	1.984	.001	0.000	0.000	0.000	0.000	35.582
14	0.000	0.000	.824	2.180	2.859	3.504	3.584	3.602	3.242	2.676	3.111	2.194	.352	.002	0.000	0.000	0.000	0.000	28.129
15	0.000	0.000	.006	.006	.849	1.870	2.697	3.325	3.058	3.209	2.931	2.399	1.294	.003	0.000	0.000	0.000	0.000	21.645
16	0.000	0.000	1.213	2.940	3.465	3.682	3.762	3.754	3.707	3.628	3.500	3.196	1.869	.002	0.000	0.000	0.000	0.000	34.719
17	0.000	0.000	.612	1.472	1.926	3.522	3.591	3.594	3.507	2.776	2.861	1.917	1.395	.002	0.000	0.000	0.000	0.000	27.174
18	0.000	0.000	.900	2.756	3.323	3.576	3.687	3.698	3.680	M	3.380	2.921	1.398	.001	0.000	0.000	0.000	0.000	M
19	0.000	0.000	.841	2.643	3.255	3.490	3.614	3.621	3.551	3.269	.943	.567	1.029	.002	0.000	0.000	0.000	0.000	26.825
20	0.000	0.000	.305	2.137	2.114	1.899	.809	1.611	2.940	1.053	.032	.765	.055	.002	0.000	0.000	0.000	0.000	13.722
21	0.000	0.000	.003	.006	.005	.066	1.353	1.929	2.550	2.156	1.773	.002	.002	.002	0.000	0.000	0.000	0.000	9.847
22	0.000	0.000	.001	.006	.482	1.149	.539	2.880	3.111	3.039	2.741	2.185	.783	.006	0.000	0.000	0.000	0.000	16.922
23	0.000	0.000	.796	2.670	3.282	3.530	3.659	3.682	3.594	3.433	3.081	2.760	1.002	.003	0.000	0.000	0.000	0.000	31.493
24	0.000	0.000	.071	.008	.263	.755	.242	.192	1.557	.560	.609	.110	.012	.004	0.000	0.000	0.000	0.000	4.383
25	0.000	0.000	.724	2.735	3.370	3.633	3.698	3.743	3.717	3.602	3.347	2.841	.874	.002	0.000	0.000	0.000	0.000	32.288
26	0.000	0.000	.736	2.729	3.386	3.646	3.745	3.784	3.732	3.604	3.382	2.917	.910	.002	0.000	0.000	0.000	0.000	32.573
27	0.000	0.000	.506	2.247	3.067	3.314	3.485	3.530	3.507	3.429	3.158	2.596	.708	.002	0.000	0.000	0.000	0.000	29.550
28	0.000	0.000	.435	1.915	2.819	3.326	3.364	3.289	3.183	3.033	2.781	2.322	.594	.001	0.000	0.000	0.000	0.000	27.063
29	0.000	0.000	.538	.988	.277	.240	.223	1.573	2.704	3.087	2.063	.739	.530	.002	0.000	0.000	0.000	0.000	12.964
30	0.000	0.000	.118	1.841	.211	2.720	3.629	3.728	3.706	3.555	3.091	1.692	.668	.004	0.000	0.000	0.000	0.000	24.962
31	0.000	0.000	.468	2.538	1.558	.157	1.156	1.110	.768	.288	.166	.005	M	M	M	M	M	M	M
AVERAGE VALUES	0.000	0.000	.466	1.421	1.725	1.908	2.017	2.233	2.342	2.165	1.929	1.446	.701	.004	0.000	0.000	0.000	0.000	17.707
STANDARD DEVIATION	0.000	0.000	.474	1.228	1.503	1.652	1.666	1.598	1.512	1.540	1.476	1.295	.712	.004	0.000	0.000	0.000	0.000	13.344

MISSING DATA
PERMANENT DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIO METER
SERIAL NO. 11095 E6

NOVEMBER 1977

DIRECT SOLAR COMPONENT
HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)FORT COLLINS, COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	MTN. STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQM-DAY)
1	M	M	M	M	M	M	M	M	M	M	3.475	3.031	.635	.002	0.000	0.000	0.000	0.000	M
2	0.000	0.000	.502	1.962	.245	.349	.622	1.407	3.600	3.642	3.389	2.909	.595	.004	0.000	0.000	0.000	0.000	19.225
3	0.000	0.000	.418	2.370	3.184	3.511	3.655	3.682	3.628	3.483	3.223	2.239	.373	.006	0.000	0.000	0.000	0.000	29.773
4	0.000	0.000	.274	.034	.014	.165	.460	.754	1.732	1.808	3.077	2.337	.331	.003	0.000	0.000	0.000	0.000	10.990
5	0.000	0.000	.231	.708	.758	3.153	1.958	3.609	2.757	2.005	1.292	.311	.001	0.000	0.000	0.000	0.000	0.000	16.783
6	0.000	0.000	.045	.007	.005	.007	.010	.251	.311	.131	.190	1.471	.074	.003	0.000	0.000	0.000	0.000	2.505
7	0.000	0.000	.082	1.089	2.743	3.044	3.193	3.101	3.207	3.045	2.707	1.302	.118	.002	0.000	0.000	0.000	0.000	23.633
8	0.000	0.000	0.000	.002	.011	.195	1.406	.035	.745	.137	.047	.038	.004	0.000	0.000	0.000	0.000	0.000	2.620
9	0.000	0.000	0.000	2.618	3.428	3.735	3.042	.471	.666	.005	.006	.007	.085	0.000	0.000	0.000	0.000	0.000	14.062
10	0.000	0.000	0.000	2.357	3.066	3.527	3.693	3.690	3.673	3.554	3.272	2.788	.238	0.000	0.000	0.000	0.000	0.000	29.859
11	0.000	0.000	0.000	2.317	3.254	3.547	3.680	3.701	3.089	3.347	1.948	.956	.116	0.000	0.000	0.000	0.000	0.000	25.955
12	0.000	0.000	0.000	.010	.002	.005	.005	.002	.044	1.314	3.346	2.396	.178	0.000	0.000	0.000	0.000	0.000	7.301
13	0.000	0.000	0.000	2.159	3.162	3.477	3.633	3.146	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	3.374	3.499	1.779	3.353	3.291	1.142	.478	.098	.009	0.000	0.000	0.000	0.000	0.000	M
15	0.000	0.000	0.000	.489	.014	.456	3.573	2.189	.036	.879	2.020	2.367	.085	0.000	0.000	0.000	0.000	0.000	12.106
16	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	1.434	2.902	3.355	3.355	1.977	.056	.070	.091	.004	0.000	0.000	0.000	0.000	0.000	M
29	0.000	0.000	0.000	.780	1.132	.715	1.009	.393	.020	.100	.004	.008	.004	0.000	0.000	0.000	0.000	0.000	4.165
30	0.000	0.000	0.000	.014	.476	.475	1.065	3.145	1.364	.668	1.891	1.503	.005	0.000	0.000	0.000	0.000	0.000	10.605
AVERAGE VALUES STANDARD DEVIATION	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

MISSING DATA
ESTIMATED DATA REFER TO DOCUMENTATIONINSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

Table 50.

DECEMBER 1977

 DIRECT SOLAR COMPONENT
 HOURLY VALUES, MEGAJOULES/(SQ. METER-HR)

 FORT COLLINS COLORADO
 COLORADO STATE UNIVERSITY
 DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	HOURS 4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	MTN. 12-13	STD. 13-14	TIME 14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	INTEGRATED DAILY VALUES (MJ/SQ-M-DAY)
1	0.000	0.000	0.000	.609	2.117	1.220	2.434	2.742	.931	.005	.002	.002	.006	0.000	0.000	0.000	0.000	0.000	10.070
2	0.000	0.000	0.000	.004	.827	.715	1.509	3.451	.777	.113	.059	.059	.011	0.000	0.000	0.000	0.000	0.000	7.525
3	0.000	0.000	0.000	.015	.016	.031	.068	.061	.048	.036	.049	.026	.011	0.000	0.000	0.000	0.000	0.000	.360
4	0.000	0.000	0.000	.006	.009	.047	.045	.023	.030	.033	.029	.022	.005	0.000	0.000	0.000	0.000	0.000	.250
5	0.000	0.000	0.000	.004	.002	.004	.005	.003	.004	.018	.005	.001	.002	0.000	0.000	0.000	0.000	0.000	.048
6	0.000	0.000	0.000	.018	.047	.017	.012	.040	.025	.024	.006	.013	.003	0.000	0.000	0.000	0.000	0.000	.205
7	0.000	0.000	0.000	.101	.004	.024	.139	.134	.044	.086	.062	.029	.004	0.000	0.000	0.000	0.000	0.000	.627
8	0.000	0.000	0.000	.001	.005	.008	.596	1.166	.964	1.863	.730	.029	.004	0.000	0.000	0.000	0.000	0.000	5.366
9	0.000	0.000	0.000	.162	1.719	2.648	2.073	.901	.414	1.572	.611	1.869	.002	0.000	0.000	0.000	0.000	0.000	11.970
10	0.000	0.000	0.000	.877	2.591	2.709	1.850	2.713	.884	2.704	2.533	2.203	0.000	0.000	0.000	0.000	0.000	0.000	19.063
11	0.000	0.000	0.000	.140	2.888	3.481	3.707	3.731	3.723	3.565	1.905	.085	.002	0.000	0.000	0.000	0.000	0.000	23.228
12	0.000	0.000	0.000	.753	1.835	2.632	.010	.011	.007	.009	.049	.621	.001	0.000	0.000	0.000	0.000	0.000	5.934
13	0.000	0.000	0.000	.309	.107	.138	.712	1.595	3.450	3.310	1.020	1.197	.002	0.000	0.000	0.000	0.000	0.000	11.840
14	0.000	0.000	0.000	.002	.007	.006	.153	.402	1.141	1.695	2.250	1.451	.005	0.000	0.000	0.000	0.000	0.000	7.112
15	0.000	0.000	0.000	.113	.443	.658	.010	.010	.004	.007	2.050	1.187	.009	0.000	0.000	0.000	0.000	0.000	4.491
16	0.000	0.000	0.000	.004	.016	.450	.306	.074	.056	.019	.013	.007	.001	0.000	0.000	0.000	0.000	0.000	.947
17	0.000	0.000	0.000	1.116	2.936	3.476	3.689	3.261	2.871	3.226	.544	1.549	.003	0.000	0.000	0.000	0.000	0.000	22.673
18	0.000	0.000	0.000	.608	1.805	3.282	3.494	3.337	.188	3.357	1.042	.002	.003	0.000	0.000	0.000	0.000	0.000	17.118
19	0.000	0.000	0.000	1.009	2.838	3.458	3.721	1.878	2.396	3.097	2.170	2.131	.002	0.000	0.000	0.000	0.000	0.000	22.699
20	0.000	0.000	0.000	.754	2.772	3.387	3.686	3.807	3.825	3.724	3.484	2.708	.003	0.000	0.000	0.000	0.000	0.000	28.150
21	0.000	0.000	0.000	.801	2.674	3.338	2.865	3.520	2.438	2.846	1.315	.010	.002	0.000	0.000	0.000	0.000	0.000	19.810
22	0.000	0.000	0.000	.007	.361	1.336	.775	3.597	3.685	1.479	.018	.016	.006	0.000	0.000	0.000	0.000	0.000	11.280
23	0.000	0.000	0.000	0.000	0.000	0.000	M	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
AVERAGE VALUES																			
STANDARD DEVIATION																			
M																			
M																			

 MISSING DATA
 ESTIMATED DATA REFER TO DOCUMENTATION

 INSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENT PYRHELIOMETER
 SERIAL NO. 11095 E6

1975

 HEMISPHERIC SOLAR IRRADIANCE
 INTEGRATED DAILY VALUES, MEGAJOULES/(SQ. METER-DAY)

 FORT COLLINS COLORADO
 COLORADO STATE UNIVERSITY
 DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	1	2	3	4	5	6	MONTH	7	8	9	10	11	12
1	M	M	M	M	M	30.384	10.248	M	M	24.116	19.754	M	M
2	M	M	M	M	M	28.073	M	M	M	18.098	19.527	M	M
3	M	M	M	M	M	21.891E	26.402	M	M	22.831	18.800	M	M
4	M	M	M	M	M	26.745	28.219	M	M	21.746	M	M	M
5	M	M	M	M	M	30.695	18.876	23.702	23.606	M	M	M	M
6	M	M	M	M	M	25.010	29.041	15.224	24.083	M	M	M	M
7	M	M	M	M	M	19.524	M	18.612	M	M	M	M	M
8	M	M	M	M	M	17.368	M	27.643	M	M	M	M	M
9	M	M	M	M	M	14.637	17.902	25.257	19.187	M	M	M	M
10	M	M	M	M	M	12.202	26.437	M	12.911	M	M	M	M
11	M	M	M	M	M	29.657	28.513	M	2.169	M	M	M	M
12	M	M	M	M	M	23.242	30.701	M	M	M	M	M	M
13	M	M	M	M	M	27.043	29.178	M	17.281	M	M	M	M
14	M	M	M	M	M	M	16.534	M	14.116	M	M	M	M
15	M	M	M	M	M	M	22.214	M	13.846	M	M	M	M
16	M	M	M	M	M	M	M	20.200	15.637	M	M	M	M
17	M	M	M	M	M	17.825	21.256	M	21.115	M	M	M	M
18	M	M	M	M	M	15.465E	21.582	M	10.975	M	M	M	M
19	M	M	M	M	M	26.914E	24.046	18.863	21.528	M	M	M	M
20	M	M	M	M	M	27.747	M	14.736	19.969	M	M	M	M
21	M	M	M	M	M	19.816	M	20.025	21.458	M	M	M	M
22	M	M	M	M	M	23.514	M	20.351	21.262	M	M	M	M
23	M	M	M	M	M	30.950	M	20.367	20.879	M	M	M	M
24	M	M	M	M	30.620	27.218	M	22.945	20.777	M	M	M	M
25	M	M	M	M	12.622	25.924	M	25.445	20.434	M	M	M	M
26	M	M	M	M	31.073	32.184	M	M	17.383	M	M	M	M
27	M	M	M	M	18.664	31.641	M	M	19.726	M	M	M	M
28	M	M	M	M	2.913	19.983	M	M	19.823	M	M	M	M
29	M	M	M	M	8.026	30.952	M	24.917	11.527	M	M	M	M
30	M	M	M	M	25.848	31.281	M	25.260	13.238	M	M	M	M
31	M	M	M	M	20.364	M	M	25.146	M	M	M	M	M

AVERAGE	M	M	M	M	M	24.588	M	M	18.134	M	M	M	M
VALUES	M	M	M	M	M	6.089	M	M	5.000	M	M	M	M
STANDARD													
DEVIATION													

 M MISSING DATA
 E ESTIMATED DATA REFER TO DOCUMENTATION

 INSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
 SERIAL NO. 12513 F3

Table 52.

1976

 HEMISPHERIC SOLAR IRRADIANCE
 INTEGRATED DAILY VALUES, MEGAJOULES/(SQ. METER-DAY)

 FORT COLLINS COLORADO
 COLORADO STATE UNIVERSITY
 DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	1	2	3	4	5	6	7	8	9	10	11	12
1	M	11.591	14.220	23.395	27.709	M	16.580	M	M	18.486	M	M
2	M	12.782	9.909	24.749	29.432	25.398	16.816	M	M	13.713	M	M
3	M	9.476	14.224	25.380	27.396	28.633	29.573	M	M	11.352	M	M
4	M	3.914	9.279	22.431	13.576	25.814E	27.101	M	M	11.906	M	M
5	M	5.787	21.691	21.724	19.090	M	20.832	M	M	M	M	M
6	M	6.791	21.186	"	4.421	M	26.552	M	M	10.200	M	M
7	M	14.359	20.347	19.095	19.451	M	17.371	M	M	18.979	M	M
8	M	10.969	20.686	6.321	24.618	24.776	25.426	M	3.195	M	M	M
9	M	11.572	20.501	25.648	18.718	19.578E	19.258E	M	23.723	18.090	11.868	M
10	M	14.704	20.921	26.938	26.016	23.589	22.107	M	20.372	18.139	6.031	M
11	M	15.161	11.811	18.394	11.579	30.268	30.300	M	17.794	4.262	1.072	M
12	M	15.537	19.778	21.497	"	27.631	23.161	M	12.673	16.712	1.793	M
13	M	M	18.017	20.813	31.709	26.101	13.817	M	15.846	M	4.994	M
14	M	M	12.426	23.843	"	29.387	27.543	M	9.032	17.412	9.562	8.066
15	M	M	12.674	17.980	6.772	29.113E	22.758	M	10.285	16.198	12.126	9.234
16	M	M	M	10.646	26.134	16.334	26.415	M	20.913	16.862	11.410	8.411
17	M	M	M	8.014	32.200	8.766	24.017	M	18.769	13.474	11.518	M
18	M	M	M	16.945	25.355	9.131	14.064	M	19.683	12.465	5.215	M
19	M	M	M	18.249	19.314	31.672	12.273	M	3.698	17.489	10.455	M
20	11.282	M	22.917	26.455	22.009	29.332	11.385	M	11.128	M	8.606	M
21	10.950	M	18.719	19.076	7.999	29.372	16.959	M	21.303	M	10.982	9.666
22	11.244	M	21.937	23.249	9.033	24.716	24.015	M	11.159F	14.445	M	9.660
23	8.028	M	20.050	13.515	7.489	14.822E	28.309	M	M	15.351	M	6.082
24	M	14.666	20.982	28.633	15.892	28.868	28.524	M	5.193	14.191	M	3.317
25	M	16.242	17.936	21.294	18.155	27.718	14.396	M	9.860	12.114	M	9.110
26	M	15.729	24.763	1.218	M	29.790	21.706	M	10.275	M	M	7.566
27	9.591	9.669	21.225	5.630	M	30.097	26.764	M	4.333	11.156	M	8.938
28	10.906	15.529	9.948	8.568	M	27.240	25.021	M	17.755	15.366	M	9.632
29	11.846	8.715	19.157	9.960	M	23.773	19.821	M	20.172	14.481	M	8.869
30	6.524	M	20.868	25.725	M	17.250	17.240	M	19.782	10.986	M	M
31	8.565	M	25.060	M	M	M	18.025	M	M	14.110	M	M
AVERAGE VALUES	M	M	18.257	18.468	M	24.584	21.553	M	M	M	M	M
STANDARD DEVIATION	M	M	4.532	7.409	M	6.411	5.487	M	M	M	M	M

 MISSING DATA
 ESTIMATED DATA REFER TO DOCUMENTATION

 INSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 21)
 SERIAL NO. 12513 P3

1976

DIRECT SOLAR COMPONENT
INTEGRATED DAILY VALUES, MEGAJOULES/(SQ. METER-DAY)

FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	1	2	3	4	5	6	MONTH	7	8	9	10	11	12
1						M	12.117	M	M	28.963	M	M	
2						19.664	14.895	M	M	10.238	M	M	
3						28.574	37.129	M	M	15.110	M	M	
4						26.745E	24.357	M	M	7.734	M	M	
5						M	21.401	M	M	M	M	M	
6						M	28.704	M	M	6.300	M	M	
7						M	12.583	M	M	33.484	M	M	
8						26.397	25.802	M	.335	M	M	M	
9						15.354E	19.068E	M	32.484	33.662	24.377	M	
10						27.465	21.317	M	22.378	32.715	2.549	M	
11						35.937	40.127	M	14.967	.361	M	M	
12					M	26.531	23.342	M	14.057	26.867	.051	M	
13				27.037	22.972	8.241	M	13.343	M	.062	M		
14				M	30.252	32.607	M	5.702	32.536	11.570	13.229		
15				.101	34.205E	17.519	M	4.303	26.833	30.004	22.838		
16				21.214	7.461	29.447	M	27.626	30.297	26.256	8.045		
17				29.052	1.968	25.672	M	18.557	14.599	27.906	M		
18				24.698	3.054	4.895	M	27.172	14.335	4.819	M		
19				13.302	42.928	2.939	M	.326	31.521	23.024	M		
20				14.615	34.236	3.944	M	6.252	M	15.007	M		
21				.878	37.211	12.891	M	33.577	M	27.739	19.922		
22				.107	27.815	29.493	M	3.498E	18.884	M	23.919		
23				.011	10.362E	34.681	M	M	24.074	M	8.364		
24				3.089	29.376	36.324	M	.430	21.268	M	6.412		
25				9.147	34.448	10.119	M	2.910	16.061	M	15.446		
26				M	37.390	14.168	M	3.828	M	M	14.500		
27				M	37.525	30.817	M	.257	12.201	M	2.793		
28				M	33.412	24.679	M	.574	32.327	M	26.040		
29				M	22.874	19.666	M	.544	30.613	M	20.332		
30				M	11.712	12.734	M	31.056	11.723	M	M		
31				M	M	9.964	M	M	28.152	M	M		
AVERAGE					M	25.611	20.845	M	M	M	M	M	
VALUES					M	11.211	10.442	M	M	M	M	M	
STANDARD													
DEVIATION													

M MISSING DATA
F ESTIMATED DATA REFER TO DOCUMENTATION

INSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

Table 54.

1977

 HEMISPHERIC SOLAR IRRADIANCE
 INTEGRATED DAILY VALUES, MEGAJOULES/(SQ. METER-DAY)

 FORT COLLINS COLORADO
 COLORADO STATE UNIVERSITY
 DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	1	2	3	4	5	6 MONTH	7	8	9	10	11	12
1	M	6.752	M	12.429	M	29.488	M	28.738	20.951	19.695	M	7.456
2	M	10.284	M	8.018	27.314E	19.697	M	27.412	24.073	17.073	11.116	7.812
3	8.452E	13.290	15.377	19.187	19.188	23.373	M	21.033	12.255	13.310	13.880	8.066
4	3.594	13.580	19.449	16.986	28.746	31.518	M	16.777E	23.957	11.545	9.642	7.95H
5	7.046	7.285	14.579	26.162	27.623	M	18.748E	10.177	M	3.610	11.473	4.396
6	7.945	12.902	19.362	M	28.366	24.762E	26.976	25.398	23.839	7.760	6.439	4.756
7	9.748	14.104	15.376	M	18.493	24.588	23.929	21.895	21.771	18.001	12.307	7.624
8	6.304	14.281	17.764	M	27.463	22.689E	20.731	15.436	21.241	19.092	7.513	7.135
9	11.495	14.431	14.828	M	26.887	21.055E	20.571	23.845	21.984	15.582	10.089	9.371
10	8.697E	14.286	M	M	22.357	28.690E	31.431	16.817	19.337	8.434	12.727	9.773
11	10.562	10.945	7.308	M	29.984	M	29.509	9.629	7.644	18.410E	12.117	9.159
12	4.365	8.853	21.551	M	23.109	M	30.134	24.878	M	18.191	4.499	5.532
13	9.995	13.039	21.835	M	22.857	18.408E	15.617	22.304	M	17.931	M	7.391
14	8.493	M	13.639	M	17.031	29.717	26.474	9.460	M	16.602	M	5.918
15	6.071	M	18.203	M	26.253	32.532	24.820	14.193	M	16.207	7.842	3.760
16	10.352	M	19.972	M	19.787	25.955	22.182	7.354	M	17.305	M	7.240
17	9.759	M	11.536	M	27.011E	26.011	20.018	5.235	M	16.212	M	8.912
18	5.824	M	11.532	M	27.158	10.729	23.942	10.678	M	16.434E	M	7.542
19	11.030	M	21.221	M	27.028	14.412	18.754	12.735	M	15.697	M	8.335
20	11.045	M	19.236	M	13.783	16.681	14.734	26.061	19.577	12.504	M	10.013
21	9.028	M	22.013	M	29.282	26.909	5.547	19.831	20.143	11.004	M	8.940
22	M	M	23.149	M	25.956	26.061	17.710	22.928	20.670	13.165	M	9.394
23	M	M	20.776	25.930	28.538	23.442	26.555	20.831	22.278	15.528	M	M
24	11.390E	M	21.244	M	25.436E	31.743	17.684	22.373	20.225	10.364	M	M
25	12.241	M	21.411	M	19.409	28.344	4.611	15.330	21.149	15.336	M	M
26	8.451	M	18.873	27.285	21.291	23.059	24.667	23.669	17.212	15.127	M	M
27	12.337	M	22.255	10.724	23.270	30.161	27.046	18.369	17.719	14.484	M	M
28	12.550	M	20.720	12.613	18.647	30.866E	26.646	19.387	15.834	13.787	M	M
29	12.212	M	13.123	12.411	26.287	14.770	25.584	24.485	16.105	10.995	5.874	M
30	13.449	M	24.495	M	30.465	M	27.291	23.777	9.689	13.448	7.983	M
31	13.319	M	19.975	M	31.693	M	29.826	21.700	M	9.077E	M	M

AVERAGE	9.487	M	18.243	M	24.690	24.448	22.286	18.798	M	14.255	M	M
VALUES												
STANDARD												
DEVIATION	2.671	M	4.157	M	4.503	5.875	6.734	6.322	M	3.750	M	M

 MISSING DATA
 ESTIMATED DATA REFER TO DOCUMENTATION

 INSTRUMENTATION: EPPLEY LABORATORY PRECISION PYRANOMETER (MODEL 2)
 SERIAL NO. 32513 F3

1977

DIRECT SOLAR COMPONENT
INTEGRATED DAILY VALUES, MEGAJOULES/(SQ. METER-DAY)

FORT COLLINS COLORADO
COLORADO STATE UNIVERSITY
DEPARTMENT OF ATMOSPHERIC SCIENCE

DAY	MONTH											
	1	2	3	4	5	6	7	8	9	10	11	12
1	M	1.770	M	9.696	M	37.074	M	38.249	25.423	.428	M	10.070
2	M	11.700	M	.120	29.574E	13.476	M	33.386	30.988	.343	19.225	7.525
3	13.927E	29.159	15.233	38.158	11.512	23.145	M	19.829	7.991	12.015	29.773	.360
4	.575	28.892	30.063	2.801	33.109	40.920	M	14.999E	10.035	6.406	10.990	.250
5	8.941	1.927	14.929	40.198	30.013	M	14.612E	4.643	M	.186	16.783	.048
6	9.440	22.098	33.490	M	33.259	3.274E	33.714	25.557	33.650	.739	2.505	.205
7	20.022	29.919	18.695	M	12.845	3.308	30.225	18.593	25.315	29.096	23.633	.627
8	.481	31.242	22.436	M	30.293	17.300E	12.337	13.407	23.916	.536	2.620	5.366
9	28.941	31.797	17.230	M	32.631	17.862E	14.510	25.137	28.831	.295	14.062	11.970
10	15.601E	30.127	M	M	20.674	32.351E	40.295	16.525	23.619	.116	29.859	19.063
11	28.179	11.346	.215	M	35.920	M	34.610	4.650	.118	32.835E	25.955	23.228
12	.940	8.266	31.588	M	13.716	M	35.833	27.299	M	35.793	7.301	5.934
13	23.055	17.966	36.957	M	16.747	15.527E	3.454	18.583	M	35.582	M	11.840
14	19.318	M	19.124	M	13.101	34.192	27.482	6.702	M	28.129	M	7.112
15	.985	M	25.481	M	17.639	41.718	29.517	7.446	M	21.645	12.106	4.491
16	17.554	M	31.665	M	17.432	25.259	21.049	2.171	M	34.719	M	.947
17	7.475	M	8.188	M	27.473E	27.617	17.785	.154	M	27.174	M	22.673
18	2.224	M	11.211	M	29.482	4.898	19.685	3.644	M	31.485E	M	17.118
19	23.184	M	28.311	M	26.964	1.765	15.927	6.027	M	26.825	M	22.699
20	18.534	M	19.429	M	4.171	9.836	7.344	32.781	28.075	13.722	M	28.150
21	3.607	M	31.268	M	29.986	24.397	.166	16.815	27.982	9.847	M	19.810
22	M	M	38.158	M	23.675	30.468	4.206	25.271	31.074	16.922	M	11.280
23	M	M	30.340	29.465	23.187	13.927	23.641	23.174	16.112	31.493	M	M
24	25.234E	M	20.160	M	18.965E	37.623	8.437	21.248	.564	4.383	M	M
25	30.876	M	26.832	M	8.076	23.878	.125	10.725	.390	32.288	M	M
26	13.808	M	21.209	32.657	19.011	21.694	19.123	25.689	.378	32.573	M	M
27	30.775	M	32.578	3.377	26.106	35.983	29.988	14.532	4.254	29.550	M	M
28	24.452	M	16.232	8.511	8.235	3.952E	33.339	14.994	21.752	27.063	M	M
29	24.031	M	4.237	7.031	24.135	1.804	28.104	30.428	16.242	12.964	4.165	M
30	28.155	M	31.329	M	35.385	M	35.619	30.979	3.679	24.962	10.605	M
31	26.022	M	19.901	M	42.942	M	40.427	25.184	M	8.918E	M	M

AVERAGE	16.531	M	22.732	M	23.209	20.894	21.539	18.026	M	18.356	M	M
VALUES												
STANDARD												
DEVIATION	10.384	M	9.747	M	9.562	13.061	12.428	10.343	M	13.280	M	M

M MISSING DATA
E ESTIMATED DATA REFER TO DOCUMENTATION

INSTRUMENTATION: EPPLEY LABORATORY NORMAL INCIDENCE PYRHELIOMETER
SERIAL NO. 11095 E6

Table 56.