PROVISIONAL SUNSPOT RELATIVE NUMBERS FOR AUGUST 1938

[Dependent alone on observations at Zurich, Switzerland]

[Data furnished through the courtesy of Prof. W. Brunner]

August 1938	Relative numbers	August 1938	Relative numbers	August 1938	Relative numbers
1	*add* 144	11	*ad* 173	21	*a* 65
2	121	12	132	22	72
3	*EWcc* 121	13		23	*Macc* 94
4	d 153	14	*bd* 107	24	86
5	*dd* 132	15	102	25	*Ecc* 113
6	*a* 133	16	*Eac* 119	26	103
7	*aaa* 135	17	106	27	*d* 91
8	*d* 150	18	100	28	*a* 94
9	158	19	104	29	*d* 114
10	*ab* 161	20	76	30	105
				31	

Mean, 29 days=116.0

August 4^h at^m 8^h 34^m to 8^h 45^m U. T. Middle large bright chromospheric eruption.

August 4^h at^m 9^h 00^m to 9^h 25^m U. T. Middle large bright chromospheric eruption.

August 14^h at^m 13^h 27^m to 14^h 10^m U. T. Middle large bright chromospheric eruption.

a=Passage of an average-sized group through the central meridian.
b=Passage of a large group or spot through the central meridian.
c=New formation of a group developing into a middle-sized or large center of activity: E, on the eastern part of the sun's disk; W, on the western part; M, in the central circle zone.
d=Entrance of a large or average-sized center of activity on the east limb.

POSITIONS AND AREAS OF SUN SPOTS

[Communicated by Capt. J. F. Hellweg, U. S. Navy (Ret.), Superintendent, U. S. Naval Observatory. Data furnished by the U. S. Naval Observatory in cooperation with Harvard and Mount Wilson Observatories. The difference in longitude is measured from the central meridian, positive west. The north latitude is positive. Areas are corrected for foreshortening and are expressed in millionths of the sun's visible hemisphere. The total area for each day includes spots and groups]

Date	Eastern standard time	Mt. Wilson group No.	Heliographic: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot or group	Area: Total for each day	Spot count	Observatory
1938	*h m*		°	°	°				
Aug. 1	10 54	6029	−80.0	86.9	−7.0	291	-------	2	U. S. Naval
		6030	−79.0	87.9	−17.0	388	-------	4	
		6028	−79.0	87.9	+13.0	291	-------	2	
		6027	−74.5	92.4	+17.0	6	-------	2	
		6025	−67.0	99.9	−1.0	73	-------	1	
		6024	−60.5	106.4	−10.5	73	-------	1	
		6022	+30.0	196.9	+20.0	6	-------	3	
		6017	+33.0	199.9	−6.0	388	-------	32	
		6016	+41.0	207.9	−21.0	388	-------	15	
		6023	+49.5	216.4	+6.0	12	-------	2	
		6014	+59.5	226.4	−7.5	61	-------	2	
		6012	+81.0	247.9	+4.0	6	1,983	2	
Aug. 2	13 6	6029	−66.0	86.4	−7.0	291	-------	2	Do.
		6028	−65.0	87.4	+13.0	48	-------	4	
		6030	−63.0	89.4	−16.0	218	-------	3	
		6027	−62.0	90.4	+17.5	291	-------	8	
		6025	−52.0	100.4	−1.0	61	-------	1	
		6024	−47.5	104.9	−11.0	73	-------	1	
		6017	+49.0	201.4	−7.0	388	-------	32	
		6016	+59.0	211.4	−21.0	242	-------	6	
		6014	+72.0	224.4	−8.0	6	1,618	2	
Aug. 3	14 30	6028	−53.0	85.5	+12.5	388	-------	18	Do.
		6029	−51.5	87.0	−7.0	242	-------	2	
		6030	−51.0	87.5	−16.0	206	-------	2	
		6027	−49.0	89.5	+17.5	24	-------	6	
		6025	−37.5	101.0	−1.0	48	-------	2	
		6033	−37.0	101.5	−17.0	97	-------	10	
		6024	−32.0	106.5	−11.0	61	-------	2	
		6031	+50.0	188.5	+7.0	48	-------	3	
		6017	+64.0	202.5	−7.0	388	-------	18	
		6016	+73.0	211.5	−21.0	388	1,890	5	
Aug. 4	10 51	6037	−85.0	42.2	−13.0	97	-------	3	Do.
		6037	−82.0	45.2	−19.0	194	-------	2	
		6036	−73.0	54.2	−26.0	388	-------	3	
		6029	−40.0	87.2	−7.5	291	-------	3	
		6030	−39.0	88.2	−16.0	194	-------	4	
		6028	−39.0	88.2	+11.0	315	-------	18	
		6027	−33.0	94.2	+18.0	6	-------	3	
		6033	−26.0	101.2	−17.0	61	-------	12	

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time	Mt. Wilson group No.	Heliographic: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot or group	Area: Total for each day	Spot count	Observatory
1938	*h m*		°	°	°				
Aug. 4	10 51	6025	−24.0	103.2	−2.0	61	-------	2	U. S. Naval.
		6024	−20.5	106.7	−11.0	73	-------	3	
		6035	−15.0	112.2	+18.0	24	-------	2	
		6034	+12.0	139.2	+18.0	12	-------	3	
		6032	+39.0	166.2	+10.5	24	-------	6	
		6031	+63.0	190.2	+7.5	291	-------	15	
		6017	+75.0	202.2	−8.5	145	-------	6	
		6016	+88.0	215.2	−21.0	97	2,273	1	
Aug. 5	14 40	6039	−80.0	31.9	+3.0	194	-------	1	Do.
		6038	−77.0	34.9	+23.0	121	-------	1	
		6037	−69.0	42.9	−13.0	485	-------	11	
		6037	−65.0	46.9	−19.0	242	-------	1	
		6036	−59.0	52.9	−26.5	388	-------	10	
		6029	−26.0	85.9	−7.0	267	-------	1	
		6030	−25.0	86.9	−15.0	194	-------	1	
		6028	−23.0	88.9	+11.0	242	-------	8	
		6033	−10.0	101.9	−17.0	97	-------	9	
		6025	−8.0	103.9	−2.0	48	-------	1	
		6024	−6.0	105.9	−11.0	61	-------	1	
		6035	+1.0	112.9	+19.0	85	-------	9	
		6031	+79.0	190.9	+8.0	291	2,715	6	
Aug. 6	12 1	6039	−68.0	32.2	+3.0	194	-------	1	Do.
		6038	−65.0	35.2	+23.0	121	-------	2	
		6037	−57.0	43.2	−13.0	727	-------	22	
		6037	−53.0	47.2	−19.0	339	-------	3	
		6036	−49.0	51.2	−26.5	388	-------	7	
		6029	−13.0	87.2	−7.0	267	-------	1	
		6030	−12.0	88.2	−15.0	194	-------	2	
		6030	−9.0	91.2	−17.0	48	-------	6	
		6028	−10.0	90.2	+11.0	242	-------	5	
		6033	+3.0	103.2	−17.0	73	-------	6	
		6025	+6.0	106.2	−2.0	24	-------	2	
		6024	+7.5	107.7	−11.0	61	-------	2	
		6035	+11.0	111.2	+19.0	24	-------	1	
		6031	+89.0	189.2	+8.0	97	2,799	1	
Aug. 7	8 58	6039	−56.0	32.6	+3.0	194	-------	1	Mt. Wilson.
		6038	−52.0	36.6	+23.0	73	-------	1	
		6037	−46.0	42.6	−13.0	582	-------	22	
		6037	−41.5	47.1	−19.0	291	-------	-------	
		6036	−38.0	50.6	−27.5	388	-------	7	
		6029	−1.0	87.6	−7.0	267	-------	6	
		6030	−0.5	88.1	−15.0	218	-------	11	
		6030	+3.0	91.6	−17.0	61	-------	-------	
		6028	+3.0	91.6	+11.0	206	-------	7	
		6033	+13.0	101.6	−17.0	73	-------	6	
		6025	+18.0	106.6	−2.5	24	-------	1	
		6024	+19.5	108.1	−11.0	73	-------	2	
		6035	+21.0	109.6	+19.0	16	2,466	1	
Aug. 8	11 4	6042	−79.0	355.2	−24.0	873	-------	9	U. S. Naval.
		6039	−42.0	32.2	+3.0	194	-------	2	
		6038	−39.0	35.2	+22.5	97	-------	2	
		6037	−32.0	42.2	−13.5	582	-------	36	
		6037	−28.0	46.2	−19.0	291	-------	8	
		6036	−25.0	49.2	−27.5	388	-------	13	
		6029	+12.0	86.2	−7.0	242	-------	1	
		6029	+14.0	88.2	−14.5	194	-------	1	
		6030	+19.0	93.2	−17.0	24	-------	5	
		6028	+15.0	89.2	+11.0	242	-------	16	
		6041	+19.0	93.2	+13.0	6	-------	9	
		6033	+28.0	102.2	−16.5	97	-------	16	
		6024	+32.0	106.2	−11.0	61	-------	2	
		6025	+32.0	106.2	−3.0	36	3,327	1	
Aug. 9	11 2	6044	−74.0	347.0	+7.0	6	-------	2	Do.
		6042	−63.0	358.0	−25.0	970	-------	15	
		6039	−29.0	32.0	+3.0	145	-------	2	
		6038	−25.5	35.5	+22.5	73	-------	3	
		6037	−18.5	42.5	−14.0	533	-------	28	
		6037	−13.5	47.5	−19.0	291	-------	15	
		6036	−12.0	49.0	−28.0	291	-------	15	
		6029	+27.0	88.0	−7.0	200	-------	2	
		6028	+27.0	88.0	+11.0	339	-------	15	
		6030	+29.0	90.0	−15.0	194	-------	1	
		6030	+32.0	93.0	−17.0	12	-------	5	
		6041	+32.0	93.0	+13.0	97	-------	13	
		6033	+45.0	106.0	−16.5	48	-------	9	
		6025	+45.0	106.0	−3.0	24	-------	4	
		6024	+47.0	108.0	−11.5	61	3,284	2	
Aug. 10	11 3	6045	−80.0	327.8	−22.0	194	-------	1	Do.
		6044	−61.5	346.3	+7.0	24	-------	1	
		6042	−50.0	357.8	−25.0	824	-------	20	
		6039	−15.0	32.8	+3.0	97	-------	4	
		6038	−13.0	34.8	+22.5	61	-------	2	
		6037	−5.0	42.8	−14.0	582	-------	20	
		6037	−0.5	47.3	−19.0	291	-------	5	
		6036	+1.5	49.3	−28.0	242	-------	8	
		6029	+40.0	87.8	−7.0	242	-------	4	
		6028	+40.0	87.8	+11.0	291	-------	11	
		6030	+41.0	88.8	−15.0	194	-------	2	
		6041	+46.0	93.8	+14.0	48	-------	12	
		6033	+58.0	105.8	−16.0	16	-------	2	
		6024	+61.0	108.8	−11.0	36	3,142	1	

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time	Mt. Wilson group No.	Heliographic: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot or group	Area: Total for each day	Spot count	Observatory
1938	*h m*		°	°	°				
Aug. 11	13 3	6045	−65.0	328.5	−21.0	194	-------	1	U. S. Naval.
		6044	−47.0	346.5	+7.0	12	-------	1	
		6042	−35.0	358.5	−25.0	679	-------	28	
		6039	0.0	33.5	+3.0	97	-------	2	
		6038	+1.0	34.5	+22.0	36	-------	5	
		6037	+9.0	42.5	−14.0	533	-------	25	
		6037	+13.5	47.0	−19.0	291	-------	12	
		6036	+15.0	48.5	−28.0	145	-------	13	
		6046	+40.5	74.0	+13.0	24	-------	2	
		6029	+53.0	86.5	−7.0	218	-------	1	
		6030	+53.0	86.5	−14.0	194	-------	1	
		6028	+56.0	89.5	+12.0	267	-------	11	
		6041	+60.0	93.5	+14.0	73	-------	9	
		6033	+70.0	103.5	−15.0	12	-------	1	
		6024	+75.0	108.5	−12.0	36	2,811	1	
Aug. 12	11 15	6045	−52.0	329.3	−22.0	194	-------	3	Do.
		6044	−34.0	347.3	+7.5	12	-------	1	
		6042	−23.0	358.3	−25.0	485	-------	14	
		6039	+13.0	34.3	+3.0	121	-------	2	
		6038	+13.0	34.3	+22.5	24	-------	4	
		6037	+22.0	43.3	−14.0	388	-------	11	
		6037	+26.5	47.8	−19.0	291	-------	10	
		6036	+25.0	46.3	−28.5	61	-------	4	
		6046	+51.0	72.3	+14.0	12	-------	1	
		6029	+67.0	88.3	−7.0	194	-------	3	
		6030	+68.0	89.3	−14.5	194	-------	1	
		6028	+69.0	90.3	+12.0	145	-------	2	
		6041	+75.0	96.3	+13.0	48	2,169	4	
Aug. 13	10 50	6045	−40.0	328.3	−22.0	194	-------	2	Do.
		6049	−32.0	336.3	−18.0	24	-------	5	
		6044	−22.0	346.3	+8.0	12	-------	1	
		6042	−11.0	357.3	−25.0	485	-------	22	
		6039	+25.0	33.3	+4.0	73	-------	2	
		6050	+26.0	34.3	−24.5	6	-------	1	
		6038	+26.0	34.3	+23.0	24	-------	2	
		6037	+33.0	41.3	−14.0	388	-------	15	
		6037	+38.5	46.8	−19.0	242	-------	8	
		6036	+37.0	45.3	−28.0	48	-------	3	
		6046	+66.0	74.3	+14.0	12	-------	2	
		6029	+80.0	88.3	−7.0	206	-------	1	
		6030	+81.0	89.3	−14.5	145	-------	1	
		6028	+84.0	92.3	+12.0	145	2,004	2	
Aug. 14	12 32	6054	−82.0	272.1	+10.5	36	-------	1	Do.
		6053	−46.0	308.1	+9.0	6	-------	1	
		6045	−27.0	327.1	−21.0	194	-------	3	
		6042	+2.0	356.1	−25.0	485	-------	28	
		6052	+19.0	13.1	−11.0	6	-------	1	
		6039	+39.0	33.1	+4.0	73	-------	1	
		6038	+39.0	33.1	+23.0	12	-------	4	
		6037	+48.0	42.1	−14.5	339	-------	8	
		6037	+52.0	46.1	−19.0	242	-------	1	
		6036	+51.0	45.1	−28.0	12	1,405	1	
Aug. 15	11 9	6059	−82.0	259.6	+2.0	97	-------	1	Do.
		6058	−74.0	267.6	−18.0	24	-------	1	
		6054	−69.0	272.6	+10.5	145	-------	5	
		6057	−49.5	292.1	+18.0	36	-------	3	
		6056	−41.0	300.6	+18.0	24	-------	2	
		6053	−33.0	308.6	+9.5	6	-------	2	
		6045	−14.0	327.6	−21.0	218	-------	6	
		6055	+9.0	350.6	+11.0	24	-------	5	
		6042	+14.0	355.6	−26.0	485	-------	25	
		6039	+51.0	32.6	+4.0	73	-------	1	
		6037	+61.0	42.6	−14.0	339	-------	5	
		6037	+66.0	47.6	−19.0	218	-------	1	
		6036	+65.0	46.6	−29.0	12	1,701	1	
Aug. 16	14 2	6059	−67.0	259.9	+2.0	73	-------	1	Do.
		6058	−62.0	264.9	−19.0	24	-------	4	
		6054	−55.0	271.9	+10.5	97	-------	13	
		6061	−55.0	271.9	+16.0	36	-------	6	
		6057	−34.0	292.9	+18.0	12	-------	2	
		6056	−27.0	299.9	+18.0	97	-------	13	
		6060	−30.5	296.4	+8.0	6	-------	1	
		6045	+1.0	327.9	−21.0	194	-------	4	
		6042	+27.0	353.9	−27.0	291	-------	17	
		6039	+67.0	33.9	+4.0	73	-------	1	
		6037	+77.0	43.9	−13.0	291	-------	1	
		6037	+80.5	47.4	−19.0	194	1,388	1	
Aug. 17	11 52	6059	−53.0	261.8	+2.0	48	-------	3	Do.
		6058	−49.0	265.8	−19.0	24	-------	3	
		6061	−43.0	271.8	+15.5	36	-------	9	
		6054	−41.0	273.8	+10.5	73	-------	10	
		6056	−14.0	300.8	+17.0	48	-------	8	
		6062	+4.0	318.8	+7.0	36	-------	6	
		6045	+12.0	326.8	−21.0	97	-------	5	
		6042	+40.0	354.8	−27.0	194	-------	12	
		6039	+79.0	33.8	+4.0	36	592	2	

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time	Mt. Wilson group No.	Heliographic: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot or group	Area: Total for each day	Spot count	Observatory
1938	*h m*		°	°	°				
Aug. 18	11 25	6059	−40.0	261.9	+2.0	97	-------	5	U. S. Naval.
		6061	−29.0	272.9	+16.0	61	-------	10	
		6054	−28.5	273.4	+11.0	97	-------	38	
		6065	−9.0	292.9	+17.0	36	-------	11	
		6056	−3.0	298.9	+19.0	61	-------	7	
		6053	+6.0	307.9	+10.0	73	-------	16	
		6063	+13.0	314.9	−11.0	6	-------	6	
		6045	+25.0	326.9	−21.0	194	-------	2	
		6064	+27.0	328.9	+25.0	6	-------	4	
		6042	+52.0	353.9	−27.0	121	752	10	
Aug. 19	10 59	6067	−40.0	248.9	−25.5	24	-------	4	Do.
		6059	−27.0	261.9	+2.0	97	-------	1	
		6054	−16.0	272.9	+11.0	121	-------	22	
		6061	−15.0	273.9	+16.0	61	-------	11	
		6065	−4.0	284.9	+18.0	36	-------	4	
		6066	−3.5	285.4	+36.0	6	-------	2	
		6056	+10.0	298.9	+19.0	6	-------	2	
		6053	+20.0	308.9	+10.5	61	-------	11	
		6045	+38.5	327.4	−21.0	194	-------	2	
		6064	+41.0	329.9	+25.0	36	-------	5	
		6042	+65.0	358.9	−27.0	109	751	7	
Aug. 20	11 0	6071	−80.0	195.6	+8.5	24	-------	1	Do.
		6070	−70.0	205.6	−24.0	24	-------	1	
		*	−50.0	225.6	+6.0	6	-------	1	
		6059	−13.0	262.6	+2.0	109	-------	1	
		6054	−4.0	271.6	+10.0	48	-------	5	
		6061	+1.0	276.6	+16.0	36	-------	2	
		6063	+15.0	290.6	−11.0	6	-------	6	
		6068	+19.0	294.6	+17.0	61	-------	5	
		6053	+34.5	310.1	+10.0	12	-------	3	
		6045	+51.0	326.6	−22.0	194	520	3	
Aug. 21	11 55	6072	−86.0	175.9	+7.0	145	-------	1	Mt. Wilson.
		6071	−66.0	195.9	+9.0	16	-------	3	
		6070	−57.0	204.9	−23.0	24	-------	3	
		6067	−10.0	251.9	−24.0	24	-------	3	
		6059	+1.0	262.9	+2.0	73	-------	1	
		6054	+12.0	273.9	+11.0	73	-------	8	
		6065	+22.0	283.9	+19.0	85	-------	8	
		6068	+33.0	294.9	+19.0	73	-------	9	
		6045	+65.0	326.9	−22.0	121	634	2	
Aug. 22	11 55	6072	−71.0	177.7	+7.0	12	-------	2	Do.
		6071	−51.0	197.7	+9.5	16	-------	5	
		6074	−13.0	235.7	−19.0	24	-------	4	
		6067	0.0	248.7	−25.0	48	-------	9	
		6059	+13.0	261.7	+2.0	97	-------	1	
		6054	+28.0	276.7	+11.0	73	-------	13	
		6065	+37.5	286.2	+18.0	36	-------	6	
		6068	+47.0	295.7	+18.0	61	-------	7	
		6073	+58.0	306.7	−9.0	12	-------	4	
		6045	+79.0	327.7	−22.0	121	500	2	
Aug. 23	11 4	6072	−58.0	178.0	+6.5	36	-------	2	U. S. Naval.
		6071	−39.0	197.0	+9.0	24	-------	2	
		6070	−31.0	205.0	−23.0	6	-------	2	
		6074	0.0	236.0	−18.0	170	-------	17	
		6067	+13.0	249.0	−24.0	61	-------	10	
		6059	+27.0	263.0	+2.0	97	-------	2	
		6054	+41.0	277.0	+11.0	97	-------	10	
		6065	+48.0	284.0	+19.0	24	-------	2	
		6068	+60.0	296.0	+19.0	36	551	5	
Aug. 24	11 3	6078	−85.0	137.8	+27.0	6	-------	2	Do.
		6072	−44.0	178.8	+6.5	12	-------	1	
		6076	−25.5	197.3	+15.0	24	-------	4	
		6071	−25.5	197.3	+9.0	12	-------	1	
		6070	−17.0	205.8	−22.0	24	-------	6	
		6074	+13.5	236.3	−19.0	194	-------	30	
		6067	+28.0	250.8	−25.0	24	-------	8	
		6059	+40.0	262.8	+2.0	97	-------	1	
		6054	+55.0	277.8	+9.5	73	-------	6	
		6068	+71.0	293.8	+18.0	24	490	1	
Aug. 25	11 14	6082	−75.0	134.5	−16.0	12	-------	4	Do.
		6078	−90.0	139.5	+27.0	6	-------	3	
		6077	−43.0	166.5	+12.0	97	-------	8	
		6072	−30.0	179.5	+7.0	12	-------	1	
		6076	−12.0	197.5	+16.0	12	-------	1	
		6071	−11.5	198.0	+10.0	24	-------	1	
		6070	−1.5	208.0	−21.0	36	-------	1	
		6074	+27.0	236.5	−19.0	291	-------	24	
		6059	+52.0	261.5	+2.0	48	-------	2	
		6054	+70.0	279.5	+9.5	48	-------	3	
		6068	+85.0	294.5	+18.0	6	592	2	
Aug. 26	11 17	6082	−60.0	136.2	−17.0	121	-------	6	Do.
		6078	−59.0	137.2	+27.0	145	-------	13	
		6077	−29.0	167.2	+12.0	121	-------	19	
		6072	−16.0	180.2	+7.0	6	-------	1	

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time	Mt. Wilson group No.	Heliographic: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot or group	Area: Total for each day	Spot count	Observatory
1938	*h m*		°	°	°				
Aug. 26	11 17	6071	+2.0	198.2	+9.5	12	-------	1	U. S. Naval.
		6081	+4.0	200.2	−27.0	6	-------	3	
		6070	+12.0	208.2	−22.0	12	-------	2	
		6080	+23.0	219.2	−20.0	12	-------	3	
		6079	+23.0	219.2	+24.0	12	-------	4	
		6074	+42.0	238.2	−19.5	194	-------	33	
		6059	+66.0	262.2	+2.0	12	-------	2	
		6054	+85.0	281.2	+9.5	12	665	1	
Aug. 27	10 59	6084	−82.0	101.2	+13.0	121	-------	5	Do.
		6082	−48.5	134.7	−18.0	36	-------	4	
		6078	−47.0	136.2	+27.5	97	-------	12	
		6077	−16.0	167.2	+12.0	121	-------	17	
		6081	+12.0	195.2	−26.0	6	-------	1	
		6071	+14.0	197.2	+10.0	6	-------	1	
		6070	+25.0	208.2	−21.0	16	-------	2	
		6074	+54.5	237.7	−18.0	242	645	18	
Aug. 28	11 6	6090	−88.0	81.9	−14.0	242	-------	2	Do.
		6089	−85.0	84.9	−6.0	6	-------	1	
		6088	−82.0	87.9	+14.0	194	-------	1	
		6084	−74.0	95.9	+13.0	485	-------	14	
		6087	−66.0	103.9	−22.5	12	-------	2	
		6086	−45.0	124.9	−15.0	12	-------	3	
		6082	−38.0	131.9	−20.5	6	-------	2	
		6078	−35.0	134.9	+28.0	145	-------	11	
		6077	−3.0	166.9	+13.0	145	-------	14	
		6070	+38.0	207.9	−21.0	12	-------	3	
		6074	+69.0	238.9	−19.0	291	1,550	10	
Aug. 29	11 3	6092	−76.0	80.7	+17.0	48	-------	3	Do.
		6090	−70.0	86.7	−15.0	194	-------	1	
		6089	−70.0	86.7	−7.0	36	-------	1	
		6088	−68.0	88.7	+14.0	194	-------	5	

POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time	Mt. Wilson group No.	Heliographic: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot or group	Area: Total for each day	Spot count	Observatory
1938	*h m*		°	°	°				
Aug. 29	11 3	6084	−58.0	98.7	+13.0	727	-------	25	U. S. Naval.
		6087	−50.0	106.7	−21.0	6	-------	4	
		6086	−32.0	124.7	−15.0	36	-------	5	
		6078	−25.0	131.7	+29.0	61	-------	15	
		6082	−25.0	131.7	−20.5	6	-------	2	
		6077	+10.0	166.7	+12.5	48	-------	12	
		6085	+35.0	192.7	+9.5	12	-------	2	
		6074	+80.0	236.7	−19.0	145	1,513	3	
Aug. 30	11 1	6093	−80.0	63.5	+11.0	24	-------	2	Do.
		6092	−62.0	81.5	+17.0	36	-------	2	
		6090	−56.0	87.5	−16.0	242	-------	12	
		6089	−55.0	88.5	−7.0	12	-------	1	
		6088	−54.0	89.5	+14.0	145	-------	4	
		6084	−45.0	98.5	+13.0	485	-------	23	
		6087	−37.0	106.5	−22.0	73	-------	14	
		6086	−19.5	124.0	−17.0	36	-------	6	
		6086	−15.0	128.5	−13.5	12	-------	2	
		6078	−12.5	131.0	+28.5	73	-------	6	
		6077	+26.0	169.5	+12.5	6	1,144	2	
Aug. 31	11 6	6093	−68.0	62.3	+11.0	121	-------	10	Do.
		6092	−49.0	81.3	+17.0	16	-------	2	
		6090	−42.0	88.3	−16.0	388	-------	9	
		6088	−41.0	89.3	+14.0	97	-------	6	
		6089	−41.0	89.3	−6.5	12	-------	2	
		6084	−32.0	98.3	+13.0	485	-------	33	
		6087	−23.0	107.3	−21.5	24	-------	9	
		6086	−5.0	125.3	−16.0	36	-------	8	
		6078	0.0	130.3	+29.0	36	-------	5	
		6078	+8.0	138.3	+27.0	12	1,227	4	

Mean daily area for 31 days = 1,584. * Not numbered.

AEROLOGICAL OBSERVATIONS

[Aerological Division, D. M. LITTLE in charge]

By B. FRANCIS DASHIELL

The mean free-air data for the month of August 1938, given in tables 1 and 1a, are based on a total of 410 airplane and 214 radiometeorograph observations, respectively. They include the basic meteorological elements of pressure, temperature, and relative humidity, recorded at standard geometric heights. August marked the inauguration of new radiometeorograph stations, and these high-altitude observations are shown in table 1a.

These "means" are computed by the customary method of differences, and are omitted whenever less than 15 observations are made at the surface, and less than 5 at a standard height. For those levels that fall within the limits of the monthly vertical range of the tropopause, at least 15 observations are required. In the January 1938 issue of the MONTHLY WEATHER REVIEW, under "Aerological Observations," the reader will find further details of such computations.

The departures of mean *surface* temperature from the normal during August are shown on chart 1. The month was characterized by a persistence of decidedly warm weather throughout the country, except west of the Continental Divide. The mean temperature was considerably above the normal in the Central States, and it reached a departure of +9° F. over southeastern Nebraska. The remainder of the Central Plains and Mississippi Valley, Ohio Valley, and Middle and North Atlantic States, were also warmer than normal with departures ranging from +2° F. to +6° F.

During August mean free-air temperatures were highest over the Gulf and Southeastern States at 0.5 kilometer, and over the Southwest at all other levels. Although mean surface temperatures during August were unusually high, the mean temperatures *above* the surface showed, in most all cases, only moderate increases over the preceding month of July. On the other hand, however, mean upper-air temperatures for the current month generally were lower at all levels than during the corresponding month of 1937. Greatest positive temperature differences for August over July were noted at 0.5 kilometer over San Diego, Calif. (2.8° C.); at 1 kilometer over Pensacola, Fla. (1.2° C.); at 1.5 and 2 kilometers over El Paso, Tex. (1.2° C. and 1.2° C., respectively); at 2.5 kilometers over Chicago, Ill. (1.5° C.); at 3 kilometers over Chicago, Ill., and Cheyenne, Wyo. (1.3° C.); at 4 kilometers over Cheyenne, Wyo., and Norfolk, Va. (1.2° C.); and at 5 kilometers over Norfolk, Va. (1.7° C.).

The free-air mean temperatures for August, over Seattle and Spokane, Wash., at all levels, were lower than in July. The greatest negative difference at Seattle, Wash., was 4.9° C. at 1.5 and 2 kilometers, while it was 3.5° C. over Spokane, Wash., at 2 kilometers. Negative temperature differences between August 1938 and August 1937 showed that the current month was cooler at most levels over the greater portion of the United States, with the exception of Seattle, Wash., Chicago, Ill., Norfolk, Va., and Pensacola, Fla., where August of this year was warmer.

The highest mean temperatures recorded at all levels were: 24.7° C. at Pensacola, Fla.; 25.3° C. (the highest for the country at any level) over Oklahoma City, Okla.; 23.2° C. and 20.4° C. over El Paso, Tex.; 17.6° C. and 13.7° C. over Salt Lake City, Utah; 6.0° C. over Salt Lake City, Utah, and Oklahoma City, Okla.; and −0.8° C. over Oklahoma City, Okla., at 0.5, 1, 1.5, 2, 2.5, 3, 4, and 5 kilometers, respectively. Low mean temperatures in the free air occurred over the Northwest at all levels, and