

Readme: Solar Indices Bulletin

Solar Indices Bulletin is a prompt monthly information product that is distributed within two weeks after the observation month closes. For the month just ended, this 2-page circular tabulates daily values of sunspot numbers and 10.7 cm solar radio flux observed at Penticton (previously at Ottawa); flux measurements at eight other wavelengths are included.

Page 2 of the Bulletin gives a table of smoothed monthly mean sunspot numbers for the current solar cycle--a table that begins with smoothed observed values for each month and ends with predictions.

Available Online: http://www.ngdc.noaa.gov/stp/space-weather/online-publications/stp_sib/

SOLAR INDICES BULLETIN

OCTOBER 2007

NATIONAL GEOPHYSICAL DATA CENTER

Solar-Terrestrial Physics Division (E/GC2)

Telephone (303) 497-6346

325 Broadway

Boulder, Colorado 80305-3328 USA

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★ SOLAR RADIO EMISSIONS

The quiet Sun emits radio energy with a slowly varying intensity. These radio fluxes, which stem from atmospheric layers high in the chromosphere and low in the corona, change gradually from day-to-day, in response to the number and size of spot groups on the solar disk. The table below gives daily measurements of this slowly varying emission at selected wavelengths between about 1 and 100 centimeters. Many observatories record quiet-sun radio fluxes at the same local time each day and correct them to within a few percent for factors such as antenna gain, bursts in progress, atmospheric absorption, and sky background temperature. At 2800 megahertz (10.7 centimeters) flux observations summed over the Sun's disk have been made continuously since February 1947.

★ SOLAR FLUX TABLE

Numbers in parentheses in the column headings below denote frequencies in megahertz. Each entry is given in solar flux units—a measure of energy received per unit time, per unit area, per unit frequency interval. One

solar flux unit equals 10^{-22} J/m²Hzsec. During low periods of solar activity, the flux never falls to zero, because the Sun emits at all wavelengths with or without the presence of spots. The lowest daily Ottawa flux since 1947 occurred on November 3, 1954. On that day the observed mean value dropped to 62.6 units; the highest observed value of 457.0 occurred on April 7, 1947.

The preliminary observed and adjusted Penticton fluxes tabulated here are the "Series C" values reported by Canada's Dominion Radio Astrophysical Observatory in Penticton, British Columbia. Observed numbers are less refined, since they contain fluctuations as large as ±7% from the continuously changing sun-earth distance. Adjusted fluxes have this variation removed; they show the energy received at the mean distance between the Sun and Earth. Gaps in the Penticton, Ilorosi (PALE), data reflect equipment problems. Fluxes measured either at Sagamore Hill, Massachusetts, or at San Vito, Italy, will be substituted for frequencies at which many Penticton values are missing.

OCTOBER 2007 PRELIMINARY SUNSPOT NUMBERS AND SOLAR RADIO FLUX

Day	Sunspot Number	Obs Flux (2800)	Solar Flux Adjusted to 1 Astronomical Unit									
			PALE (15400)	PALE (8500)	PALE (4995)	Pentic (2800)	PALE (2800)	PALE (1415)	PALE (610)	PALE (410)	PALE (245)	
01	14	71	496	216	122	72	69	59	33	22	11	
02	8	69	496	217	121	70	67	58	33	22	12	
03	8	68	499	216	118	69	66	56	33	22	12	
04	8	68	497	217	118	69	66	55	32	21	12	
05	8	68	494	216	118	69	66	55	32	21	12	
06	0	67	504	217	120	68	66	55	32	20	12	
07	0	67	500	217	126	68	66	55	32	21	12	
08	0	67	490	214	116	68	65	54	32	23	15	
09	0	67	496	215	121	67	66	55	33	21	13	
10	0	67	494	215	121	67	66	54	32	20	12	
11	0	66	493	212	116	66	64	54	31	22	12	
12	0	66	505	216	118	66	66	56	31	21	17	
13	0	66	483	215	116	66	65	55	32	23	13	
14	0	67	489	215	118	67	64	55	32	19	11	
15	0	68	453	207	114	68	66	56	32	21	12	
16	0	67	502	213	118	67	66	55	33	24	12	
17	0	67	497	218	116	67	66	55	32	25	14	
18	0	67	496	213	118	67	64	54	32	23	15	
19	0	67	495	214	118	67	64	53	31	14	13	
20	0	67	493	214	121	67	63	54	32	24	18	
21	0	67	487	209	116	67	65	54	32	21	10	
22	0	67	---	---	---	67	---	---	---	---	---	
23	0	66	---	---	---	66	---	---	---	---	---	
24	0	66	491	214	117	66	64	54	31	21	13	
25	0	66	499	214	117	66	64	54	30	25	12	
26	0	67	489	210	115	67	64	54	31	23	12	
27	0	67	493	209	119	67	65	54	32	24	12	
28	9	67	495	209	118	67	65	55	32	23	13	
29	9	68	491	210	119	68	66	55	32	25	12	
30	9	85	489	212	118	65	65	55	32	26	12	
31												
Mean	2.4	67	493	214	118	67	65	55	32	22	13	

SEP 2007 FINAL FLUX

Observed	Adjusted
68.4	70.4
69.4	71.5
70.4	72.4
69.4	71.4
68.9	70.9
70.0	72.0
69.0	71.0
69.0	71.0
67.4	69.3
67.5	69.3
67.6	69.5
68.1	70.0
67.7	69.5
68.5	70.3
67.6	69.3
67.3	69.0
67.6	69.3
67.9	69.6
67.8	69.4
69.1	70.7
69.3	70.9
70.0	71.6
70.8	72.4
71.6	73.2
71.5	73.1
70.1	71.6
69.2	70.7
70.1	71.6
69.6	71.0
71.6	73.0
70.8	72.2
69.1	70.9