



Sunspot Index and Long-term Solar Observations

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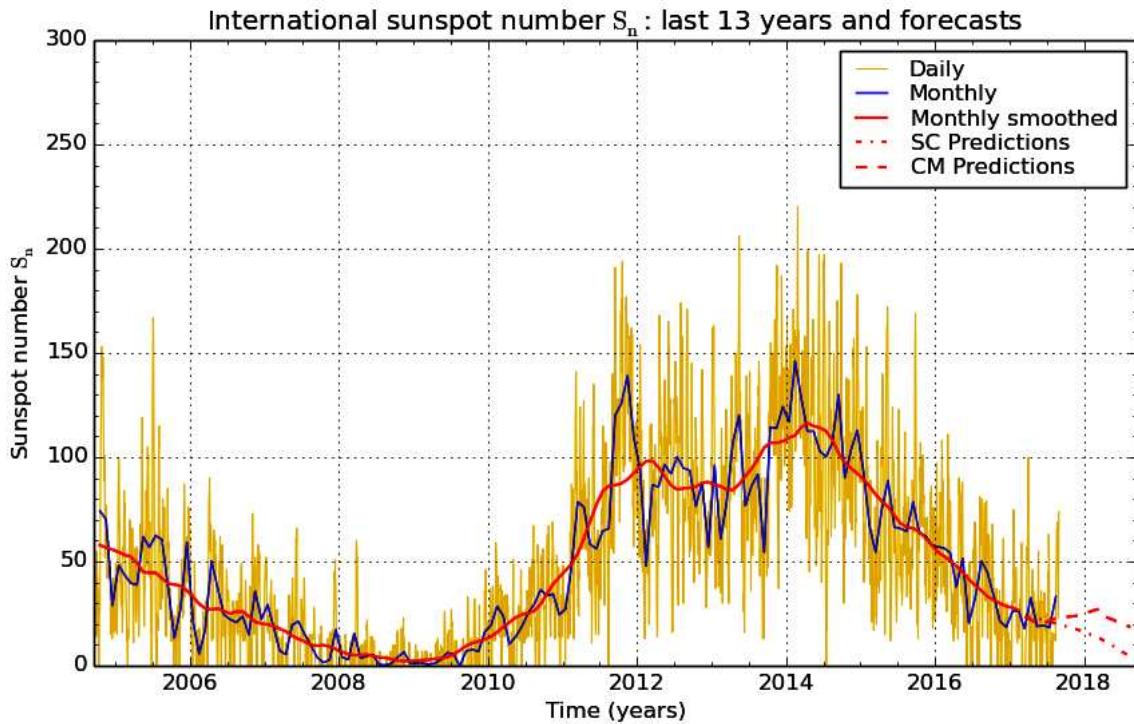
SUNSPOT BULLETIN

2017 n° 8

Provisional international and normalized hemispheric daily sunspot numbers for August 2017

Computed at the *Royal Observatory of Belgium* using observations from an international network with the *Specola Solare Ticinese Locarno* as reference station.

Date	R' _I	R' _N	R' _S
1	13	0	13
2	13	0	13
3	14	0	14
4	14	0	14
5	13	0	13
6	13	0	13
7	13	0	13
8	13	0	13
9	13	0	13
10	15	0	15
11	13	0	13
12	13	0	13
13	12	0	12
14	13	13	0
15	22	22	0
16	32	32	0
17	45	45	0
18	46	46	0
19	50	50	0
20	60	60	0
21	66	66	0
22	64	64	0
23	69	69	0
24	55	55	0
25	54	54	0
26	49	49	0
27	38	38	0
28	23	23	0
29	41	31	10
30	53	42	11
31	74	48	26
Monthly mean	33.1	26.0	7.1
Cooperating stations	81	62	62



SILSO graphics (<http://sidc.be/silso>) Royal Observatory of Belgium 2017 September 1

Predictions of the monthly smoothed Sunspot Number

using the last provisional value, calculated for February 2017: 26.6 ($\pm 5\%$)

	SM	CM		SM	CM		SM	CM
2017 Mar	23	23	2017 Sep	20	23	2018 Mar	13	27
Apr	23	22	Oct	19	24	Apr	12	23
May	23	20	Nov	18	24	May	10	22
Jun	22	20	Dec	17	24	Jun	8	21
Jul	21	22	2018 Jan	16	25	Jul	6	20
Aug	20	23	Feb	15	27	Aug	5	19

SM : SIDC classical method : based on an interpolation of Waldmeier's standard curves. The estimated error ranges from 7% (first month) to 35% (last month)

CM : Combined method : the combined method is a regression technique coupling a dynamo-based estimator with Waldmeier's method of standard curves, designed by K. Denkmayr.

Ref.: K. Denkmayr, P. Cugnon, 1997 : "About Sunspot Number Medium-Term Predictions", in "Solar-Terrestrial Prediction Workshop V", eds. G.Heckman et al., Hiraiso Solar Terrestrial Research Center, Japan, 103.

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Summary of the URSIGRAMs from S.I.D.C.

Date	R _i	PPSI	600	2800	COS	SFI	XI	Ak
31	0	0	-	72	////	0	0/0	4
1	13	2	-	74	////	0	0/0	6
2	13	9	-	74	////	0	0/0	6
3	14	12	-	75	////	1	0/0	16
4	14	25	-	74	////	0	0/0	24
5	13	22	-	74	////	1	0/0	21
6	13	25	-	74	////	0	0/0	15
7	13	33	-	73	////	0	0/0	6
8	13	34	-	71	////	0	0/0	6
9	13	28	-	72	////	0	0/0	5
10	15	19	-	71	////	0	0/0	7
11	13	12	-	70	////	0	0/0	9
12	13	9	-	70	////	0	0/0	12
13	12	3	-	68	////	0	0/0	12
14	13	2	-	73	////	18	0/0	6
15	22	8	-	74	////	25	0/0	4
16	32	36	-	77	////	12	0/0	8
17	45	51	-	77	////	10	0/0	26
18	46	78	-	80	////	13	0/0	27
19	50	77	-	87	////	5	0/0	31
20	60	82	-	86	////	7	1/0	23
21	66	112	-	87	////	20	0/0	10
22	64	101	-	90	////	14	0/0	21
23	69	91	-	85	////	15	0/0	24
24	55	74	-	79	////	6	0/0	10
25	54	48	-	81	////	15	0/0	6
26	49	45	-	78	////	2	0/0	5
27	38	39	-	78	////	0	0/0	12
28	23	24	-	82	////	0	0/0	3
29	41	12	-	84	////	8	0/0	10
30	53	31	-	87	////	22	0/0	3
31	74	78	-	92	////	5	0/0	27

R_i : provisional international sunspot numbers from the S.I.D.C.

PPSI : prompt photometric sunspot index from the S.I.D.C. in 10^{-5} w/m² : the quantity to be subtracted from the mean solar constant to account for the sunspot contribution.

600 : 600 Mhz solar flux from the station at Humain (Belgium).

2800 : 2800 Mhz solar flux from Ottawa (origin : Ursigrams - UGEOI). The 10.7cm Flux data are a service of the National Research Council of Canada.

COS : thousands of the cosmic ray counts (origin : Ursigrams - UCOSE Terre Adélie).

SFI : Solar Flare Index from the S.I.D.C. (origin: Ursigrams - UGEOR, evaluation : $1 \times S_n + 10 \times "1" + 100 \times ">1"$).

XI : X-flares index from the Ursigrams (M-flares/X-flares) (origin: Ursigrams - UGEOR, UGEOI).

Ak : geomagnetic index from Wingst, Germany (origin: Ursigrams).

SOLAR PHYSICS DEPARTMENT

UCCLE DAILY PROVISIONAL RELATIVE SUNSPOT NUMBERS FOR AUGUST 2017

DATE	UT	NUMBER		RELATIVE SUNSPOT NUMBERS			PPSI	QUAL	OBS	
		OF GROUPS	OF SPOTS	TOTAL	NORTH	SOUTH				CENTRAL
1	910	0	0	0	0	0	0.0	2	BB	
3	1015	1	2	12	0	12	0	2.8	2	OB
5	1000	1	2	12	0	12	12	5.2	3	OB
6	810	1	2	12	0	12	12	5.8	3	OB
7	730	1	3	13	0	13	13	30.3	3	OL
9	940	1	1	11	0	11	11	26.3	2	BB
11	905	1	1	11	0	11	0	1.2	3	OL
13	950	1	1	11	0	11	0	0.3	3	OL
14	710	0	0	0	0	0	0	0.0	2	BB
15	920	1	9	19	19	0	0	1.5	2	OB
16	655	2	27	47	47	0	0	19.0	3	BB
18	1520	2	43	63	63	0	29	40.1	3	OB
19	940	2	43	63	63	0	63	44.3	3	OB
20	800	3	47	77	77	0	66	46.6	3	OB
21	915	3	34	64	64	0	41	62.5	2	BB
22	1040	3	21	51	51	0	16	50.7	2	BB
23	700	4	28	68	68	0	12	50.6	3	BB
24	915	3	27	57	57	0	24	65.2	3	OL
25	850	3	23	53	53	0	26	24.7	3	OL
26	950	2	29	49	49	0	35	25.3	3	OL
27	925	2	22	42	42	0	30	23.1	3	OL
28	750	1	8	18	18	0	18	20.7	3	BB
29	645	2	2	22	11	11	0	1.9	3	BB
30	900	3	16	46	35	11	0	17.9	2	BB
31	900	4	31	71	45	26	15	40.7	3	OB

The relative mean sunspot number is 35.7.

NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS $U'=K'U$ FOR AUGUST 2017

$K'= 1.192 (*)$

1	0	7	15	13	13	19	75	25	63
2	***	8	***	14	0	20	92	26	58
3	14	9	13	15	23	21	76	27	50
4	***	10	***	16	56	22	61	28	21
5	14	11	13	17	***	23	81	29	26
6	14	12	***	18	75	24	68	30	55
								31	85

The normalised relative monthly mean sunspot number is 43.

(*) K' is the mean of the monthly K' for the last five years.

The Sun has been observed 25 days on 31 possible.