



Sunspot Index and Long-term Solar Observations

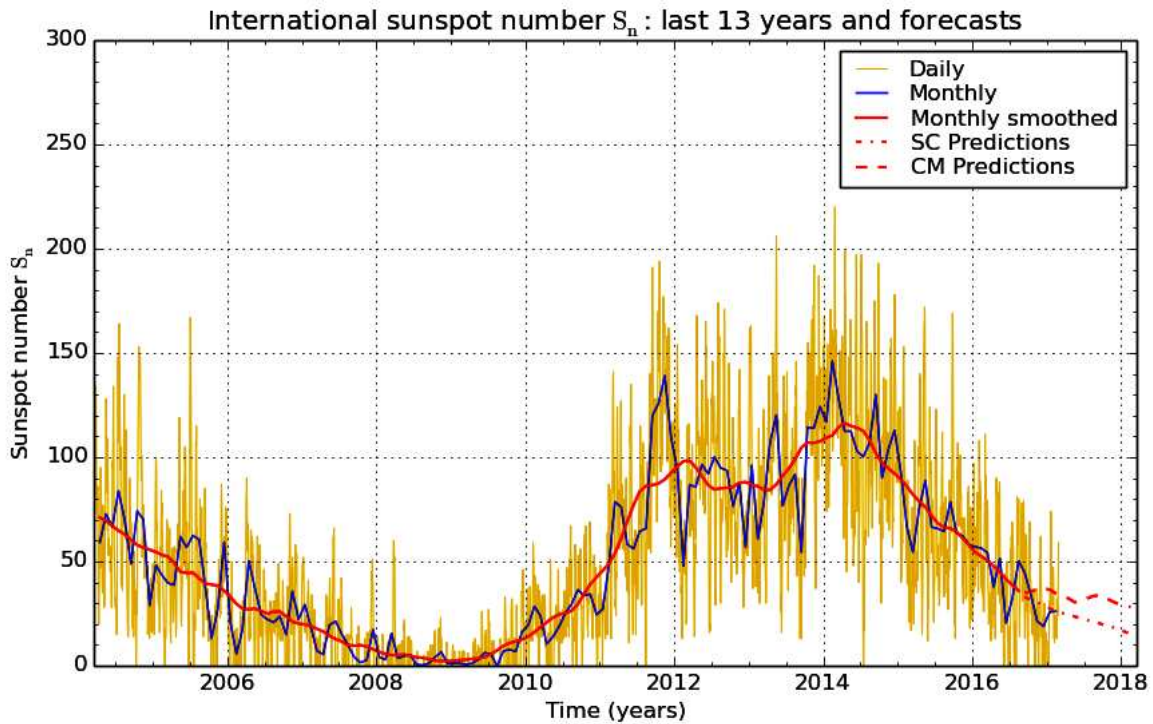
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SUNSPOT BULLETIN 2017 n° 2

Provisional international and normalized hemispheric daily sunspot numbers for February 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	47	35	12
2	47	47	0
3	39	39	0
4	17	17	0
5	13	13	0
6	13	13	0
7	13	13	0
8	11	11	0
9	20	20	0
10	24	24	0
11	22	22	0
12	20	20	0
13	19	19	0
14	16	16	0
15	24	24	0
16	19	19	0
17	14	14	0
18	13	13	0
19	25	13	12
20	32	27	5
21	26	26	0
22	29	29	0
23	24	24	0
24	27	18	9
25	32	18	14
26	38	26	12
27	48	43	5
28	59	59	0
Monthly mean	26.1	23.6	2.5
Cooperating stations	74	61	61



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

Predictions of the monthly smoothed Sunspot Number
 using the last provisional value, calculated for August 2016: 36.0 ($\pm 5\%$)

	SM	CM		SM	CM		SM	CM
2016 Sep	33	35	2017 Mar	25	34	2017 Sep	20	34
Oct	31	36	Apr	24	32	Oct	19	33
Nov	31	37	May	24	31	Nov	19	31
Dec	29	37	Jun	23	31	Dec	18	30
2017 Jan	28	36	Jul	22	32	2018 Jan	16	29
Feb	26	35	Aug	21	33	Feb	15	28

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	35	12	-	76	////	0	0/0	27
1	47	22	-	76	////	0	0/0	32
2	47	16	-	75	////	0	0/0	27
3	39	5	-	75	////	0	0/0	22
4	17	2	-	74	////	0	0/0	12
5	13	1	-	73	////	0	0/0	18
6	13	0	-	73	////	0	0/0	15
7	13	1	-	72	////	0	0/0	10
8	11	2	-	73	////	0	0/0	4
9	20	12	-	73	////	1	0/0	8
10	24	17	-	74	////	0	0/0	8
11	22	13	-	76	////	0	0/0	5
12	20	11	-	76	////	0	0/0	4
13	19	6	-	75	////	0	0/0	8
14	16	4	-	75	////	0	0/0	1
15	24	1	-	75	////	0	0/0	2
16	19	2	-	74	////	0	0/0	8
17	14	3	-	75	////	0	0/0	22
18	13	3	-	77	////	0	0/0	20
19	25	1	-	78	////	0	0/0	14
20	32	4	-	81	////	1	0/0	11
21	26	8	-	83	////	3	0/0	5
22	29	15	-	83	////	11	0/0	10
23	24	15	-	83	////	4	0/0	15
24	27	13	-	82	////	2	0/0	20
25	32	12	-	80	////	0	0/0	8
26	38	19	-	79	////	1	0/0	2
27	48	22	-	82	////	2	0/0	11
28	59	21	-	82	////	3	0/0	10

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 FEBRUARY 2017

DATE	UT	NUMBER		RELATIVE SUNSPOT NUMBERS			PPSI	QUAL	OBS	
		OF GROUPS	OF SPOTS	TOTAL	NORTH	SOUTH				CENTRAL
1	1450	2	4	24	24	0	13	21.3	2	OL
2	1015	3	10	40	40	0	0	19.6	3	OL
3	1310	2	7	27	27	0	0	1.2	4	OL
6	1555	0	0	0	0	0	0	0.0	2	BB
13	1010	1	3	13	13	0	0	4.5	2	BB
14	900	1	1	11	11	0	0	0.2	2	BB
15	1030	1	1	11	11	0	0	0.1	2	BB
16	1000	1	2	12	12	0	0	0.2	3	AE
18	1000	1	1	11	11	0	11	0.3	3	LL
19	940	2	5	25	12	13	12	0.4	3	OL
23	1315	1	8	18	18	0	0	4.4	2	OB
24	1205	2	6	26	15	11	26	5.4	4	OL
25	825	2	6	26	12	14	12	7.0	2	FC
27	815	2	6	26	26	0	15	21.9	2	FC
28	840	3	9	39	39	0	12	5.9	2	BB

The relative mean sunspot number is 20.6.

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

$K' = 1.125$ (*)

1	27	7	***	13	15	19	28	25	29
2	45	8	***	14	12	20	***	26	***
3	30	9	***	15	12	21	***	27	29
4	***	10	***	16	14	22	***	28	44
5	***	11	***	17	***	23	20		
6	0	12	***	18	12	24	29		

The normalised relative monthly mean sunspot number is 23.

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

The Sun has been observed 15 days on 28 possible.