



Sunspot Index and Long-term Solar Observations

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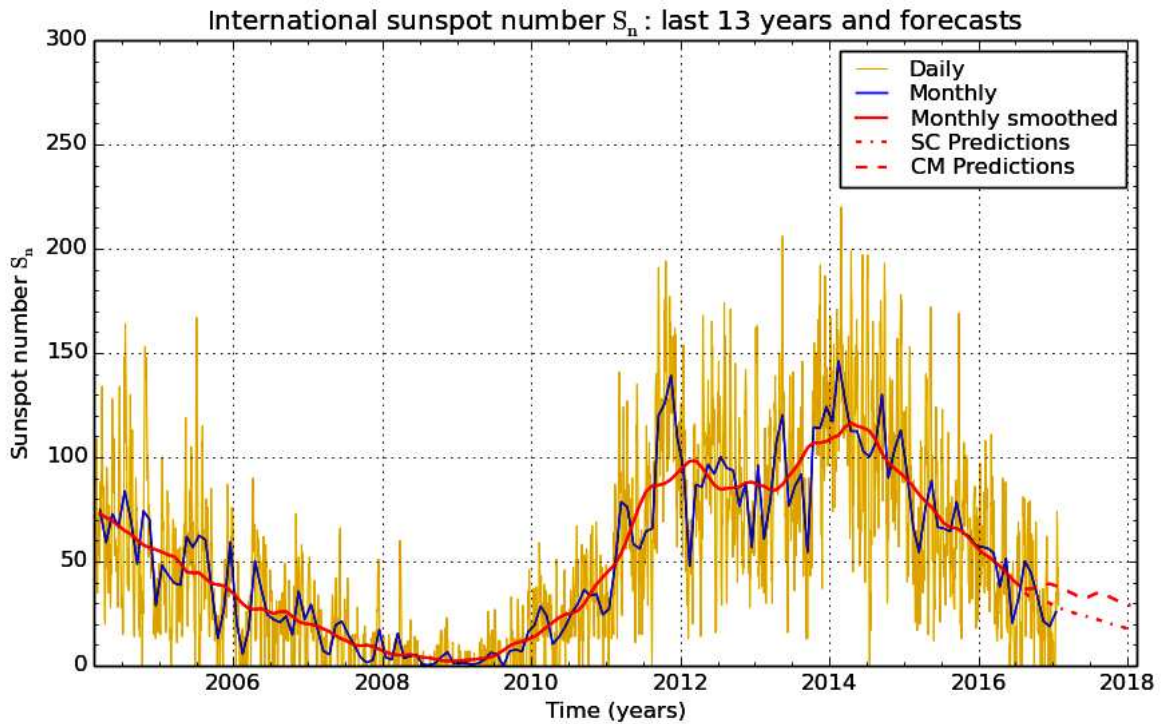
SUNSPOT BULLETIN

2017 n° 1

Provisional international and normalized hemispheric daily sunspot numbers for January 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	11	0	11
2	12	0	12
3	11	0	11
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0
9	0	0	0
10	0	0	0
11	0	0	0
12	11	11	0
13	26	26	0
14	31	31	0
15	29	29	0
16	25	25	0
17	30	30	0
18	35	35	0
19	31	31	0
20	56	56	0
21	74	74	0
22	69	69	0
23	56	56	0
24	43	43	0
25	47	47	0
26	39	39	0
27	29	29	0
28	30	30	0
29	34	34	0
30	35	29	6
31	35	21	14
Monthly mean	25.8	24.0	1.8
Cooperating stations	76	60	60



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

Predictions of the monthly smoothed Sunspot Number
 using the last provisional value, calculated for July 2016: 38.6 ($\pm 5\%$)

	SM	CM		SM	CM		SM	CM
2016 Aug	35	37	2017 Feb	27	37	2017 Aug	22	35
Sep	33	37	Mar	26	36	Sep	21	34
Oct	33	38	Apr	25	34	Oct	20	33
Nov	32	39	May	25	32	Nov	19	31
Dec	30	39	Jun	24	33	Dec	18	30
2017 Jan	29	38	Jul	23	34	2018 Jan	17	29

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	11	0	-	74	////	0	0/0	14
1	11	2	-	73	////	0	0/0	16
2	12	2	-	73	////	0	0/0	6
3	11	0	-	73	////	0	0/0	13
4	0	0	-	72	////	0	0/0	15
5	0	0	-	73	////	0	0/0	20
6	0	0	-	72	////	0	0/0	14
7	0	0	-	72	////	0	0/0	24
8	0	0	-	72	////	0	0/0	21
9	0	0	-	71	////	0	0/0	14
10	0	0	-	73	////	0	0/0	14
11	0	0	-	75	////	0	0/0	12
12	11	0	-	76	////	0	0/0	7
13	26	4	-	75	////	0	0/0	4
14	31	12	-	77	////	0	0/0	5
15	29	16	-	78	////	0	0/0	6
16	25	24	-	78	////	0	0/0	2
17	30	25	-	79	////	0	0/0	4
18	35	19	-	79	////	0	0/0	19
19	31	17	-	80	////	0	0/0	9
20	56	24	-	83	////	8	0/0	13
21	74	31	-	86	////	15	0/0	17
22	69	53	-	87	////	0	0/0	10
23	56	55	-	84	////	0	0/0	6
24	43	47	-	82	////	3	0/0	3
25	47	46	-	85	////	6	0/0	5
26	39	36	-	83	////	2	0/0	12
27	29	28	-	80	////	0	0/0	21
28	30	26	-	79	////	0	0/0	10
29	34	20	-	77	////	0	0/0	7
30	35	12	-	77	////	0	0/0	6
31	35	12	-	76	////	0	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/m^2 : 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 : $1 \times \text{Sn} + 10 \times \text{"1"} + 100 \times \text{">1"}$).

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 JANUARY 2017

DATE	UT	NUMBER		RELATIVE SUNSPOT NUMBERS			PPSI	QUAL	OBS
		OF GROUPS	OF SPOTS	TOTAL	NORTH	SOUTH			
3	1100	0	0	0	0	0	0.0	2	AE
4	1230	0	0	0	0	0	0.0	2	AE
5	950	0	0	0	0	0	0.0	2	AE
6	1300	0	0	0	0	0	0.0	3	AE
13	1010	2	5	25	25	0	5.3	3	OB
14	1015	2	5	25	25	0	10.4	3	OB
16	1200	2	4	24	24	0	27.2	3	OL
17	1050	2	3	23	23	0	28.8	2	VL
18	1020	2	9	29	29	0	12.1	3	OL
19	1005	2	6	26	26	0	4.5	2	OL
20	950	4	8	48	48	0	20.8	3	OL
21	1015	4	30	70	70	0	11.4	3	OL
22	945	3	23	53	53	0	42.3	2	OL
26	1015	3	15	45	45	0	37.9	3	OB
27	1005	2	6	26	26	0	19.6	2	OB
28	1030	2	6	26	26	0	21.5	2	LL
29	1140	2	5	25	25	0	21.6	2	FC

The relative mean sunspot number is 26.2.

NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS U'=K'U FOR JANUARY 2017

K' = 1.082 (*)

1	***	7	***	13	27	19	28	25	***
2	***	8	***	14	27	20	52	26	49
3	0	9	***	15	***	21	76	27	28
4	0	10	***	16	26	22	57	28	28
5	0	11	***	17	25	23	***	29	27
6	0	12	***	18	31	24	***	30	***
								31	***

The normalised relative monthly mean sunspot number is 28.

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

The Sun has been observed 17 days on 31 possible.