Sunspot Index and Long-term Solar Observations

World Data Center supported by the ICSU - WDS

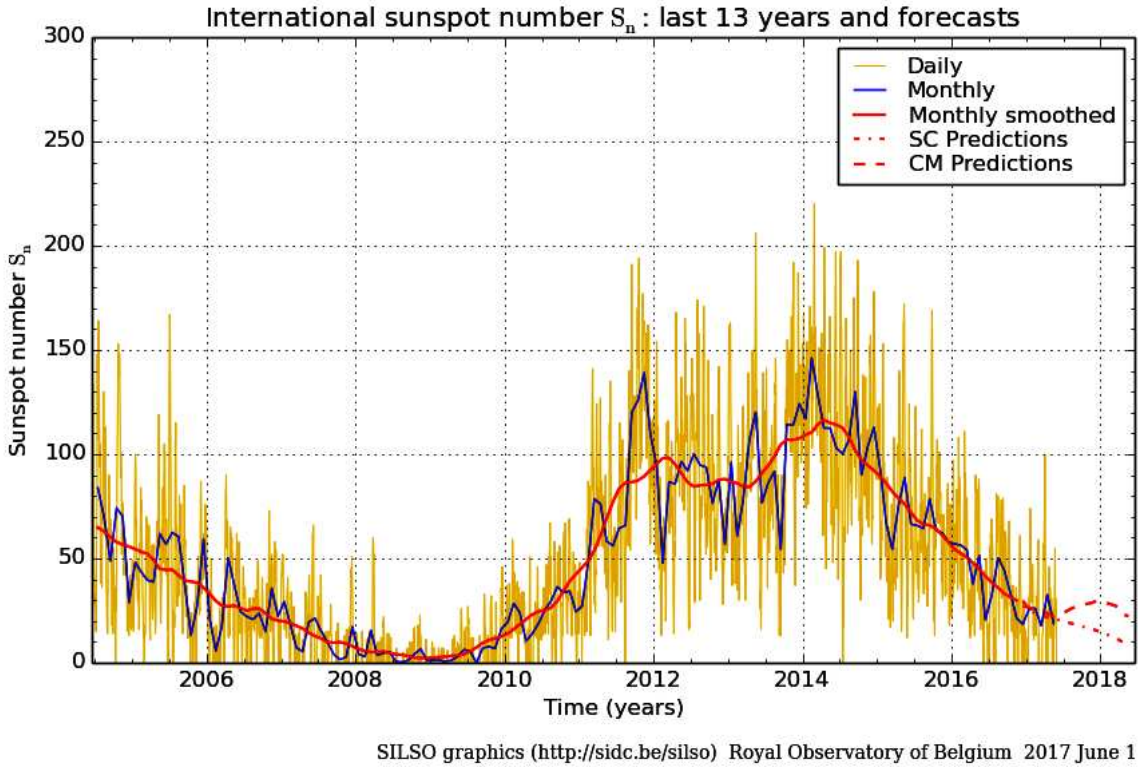
SUNSPOT BULLETIN

2017 n° 5

Provisional international and normalized hemispheric daily sunspot numbers for May 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	12	0	12
2	28	17	11
3	18	18	0
4	17	17	0
5	31	31	0
6	27	27	0
7	23	23	0
8	11	11	0
9	0	0	0
10	0	0	0
11	11	0	11
12	14	14	0
13	0	0	0
14	0	0	0
15	0	0	0
16	25	25	0
17	12	12	0
18	24	11	13
19	24	11	13
20	30	19	11
21	36	24	12
22	50	27	23
23	55	25	30
24	20	20	0
25	31	31	0
26	25	25	0
27	24	24	0
28	21	21	0
29	14	14	0
30	0	0	0
31	0	0	0
Monthly mean	18.8	14.4	4.4
Cooperating stations	80	63	63



Predictions of the monthly smoothed Sunspot Number

using the last provisional value, calculated for November 2016: 29.9 (± 5%)

	SM	CM		SM	CM		SM	CM
2016 Dec	30	27	2017 Jun	20	23	2017 Dec	15	30
2017 Jan	26	27	Jul	20	25	2018 Jan	14	29
Feb	24	25	Aug	19	26	Feb	13	28
Mar	23	25	Sep	18	27	Mar	12	27
Apr	22	24	Oct	17	28	Apr	10	23
May	21	22	Nov	16	29	May	8	22

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.

Brussels, June 1, 2017 08:14 UT

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

Date	R_i	PPSI	600	2800	COS	SFI	XI	Ak
30	24	5	-	77	////	0	0/0	6
1	12	2	-	75	////	0	0/0	6
2	28	7	-	77	////	0	0/0	6
3	18	16	-	75	////	0	0/0	4
4	17	16	-	74	////	0	0/0	7
5	31	9	-	74	////	7	0/0	5
6	27	8	-	73	////	1	0/0	6
7	23	6	-	72	////	0	0/0	12
8	11	2	-	71	////	0	0/0	6
9	0	0	-	69	////	0	0/0	8
10	0	0	-	69	////	0	0/0	8
11	11	1	-	69	////	0	0/0	7
12	14	1	-	69	////	0	0/0	12
13	0	0	-	70	////	0	0/0	5
14	0	0	-	71	////	0	0/0	12
15	0	0	-	71	////	0	0/0	14
16	25	4	-	72	////	0	0/0	10
17	12	2	-	71	////	0	0/0	9
18	24	2	-	72	////	0	0/0	11
19	24	5	-	72	////	0	0/0	16
20	30	4	-	72	////	0	0/0	24
21	36	7	-	74	////	1	0/0	10
22	50	11	-	74	////	0	0/0	14
23	55	11	-	76	////	1	0/0	10
24	20	10	-	78	////	0	0/0	4
25	31	11	-	76	////	0	0/0	4
26	25	23	-	80	////	2	0/0	4
27	24	19	-	82	////	11	0/0	13
28	21	13	-	79	////	6	0/0	34
29	14	6	-	76	////	0	0/0	11
30	0	0	-	74	////	0	0/0	7
31	0	0	-	74	////	3	0/0	5

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 x Sn+10 x "1"+100 x ">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 MAY 2017

DATE	UT	NUMBER OF GROUPS	NUMBER OF SPOTS	RELATIVE SUNSPOT NUMBERS TOTAL	NORTH	SOUTH	CENTRAL	PPSI 10-5 WM-2	QUAL	OBS
1	1540	1	1	11	0	11	0	0.2	1	OB
2	700	2	11	31	20	11	20	6.6	3	OL
3	1405	1	4	14	14	0	14	22.2	1	OL
5	1130	2	10	30	30	0	0	2.9	2	OB
6	720	2	6	26	26	0	15	6.7	3	LL
9	800	0	0	0	0	0	0	0.0	3	BB
10	635	0	0	0	0	0	0	0.0	4	BB
11	830	0	0	0	0	0	0	0.0	3	OL
12	840	1	2	12	12	0	12	1.4	2	OL
13	1105	0	0	0	0	0	0	0.0	3	OL
14	740	0	0	0	0	0	0	0.0	3	OL
15	650	0	0	0	0	0	0	0.0	3	BB
16	850	2	3	23	23	0	12	1.3	1	OP
17	945	1	2	12	12	0	0	0.9	2	BB
18	1020	2	4	24	11	13	0	1.6	3	OB
20	920	3	3	33	22	11	33	1.1	2	OB
21	730	3	3	33	11	22	33	1.1	3	OB
22	750	4	13	53	24	29	53	3.7	2	OB
23	900	4	12	52	26	26	52	8.1	2	LL
24	940	1	8	18	18	0	18	5.9	2	BB
25	750	2	11	31	31	0	19	5.4	3	OL
26	810	1	17	27	27	0	0	16.2	3	OL
27	755	1	11	21	21	0	0	11.9	3	OL
28	845	1	11	21	21	0	0	7.0	3	OL
29	740	1	8	18	18	0	0	10.7	2	BB
30	905	0	0	0	0	0	0	0.0	2	BB
31	740	0	0	0	0	0	0	0.0	2	BB

The relative mean sunspot number is 18.1.

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

K'= 1.197 (*)

1	13	7	***	13	0	19	***	25	37
2	37	8	***	14	0	20	40	26	32
3	17	9	0	15	0	21	40	27	25
4	***	10	0	16	28	22	63	28	25
5	36	11	0	17	14	23	62	29	22
6	31	12	14	18	29	24	22	30	0
								31	0

The normalised relative monthly mean sunspot number is 21.

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

The Sun has been observed 27 days on 31 possible.