Sunspot Index and Long-term Solar Observations

World Data Center supported by the ICSU - WDS

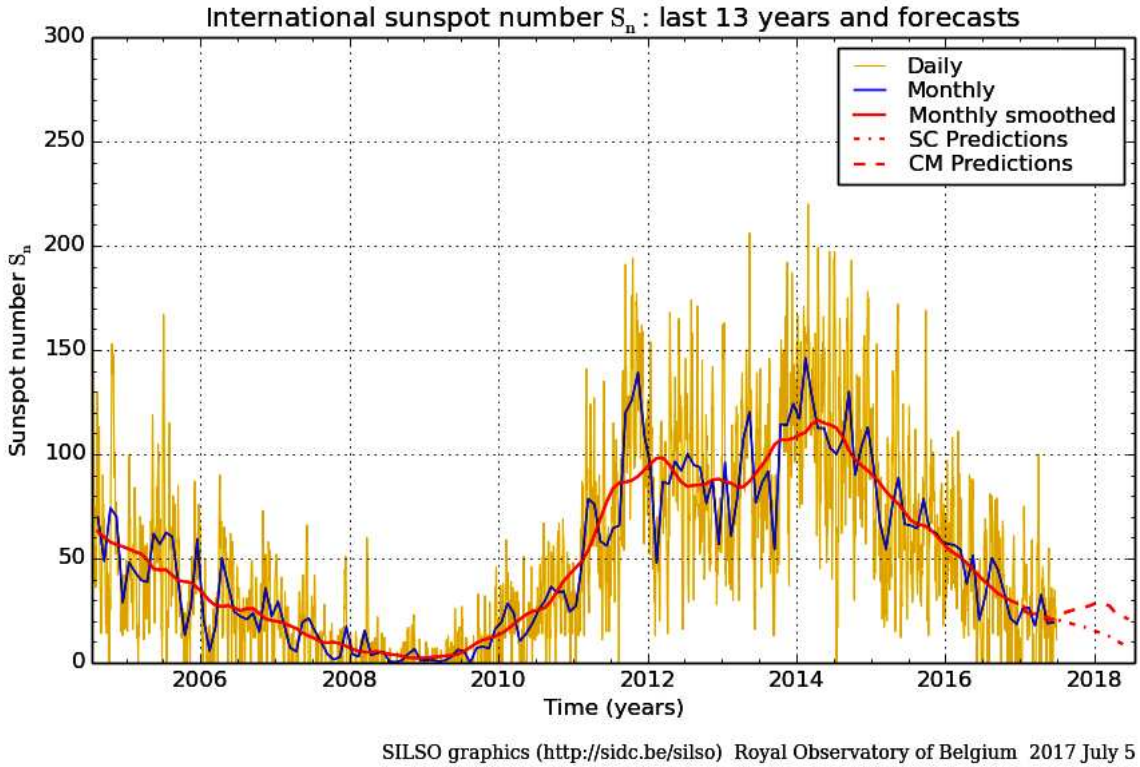
SUNSPOT BULLETIN

2017 n° 6

Provisional international and normalized hemispheric daily sunspot numbers for June 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	15	15	0
2	23	23	0
3	24	24	0
4	26	26	0
5	36	36	0
6	24	24	0
7	14	14	0
8	14	14	0
9	0	0	0
10	0	0	0
11	0	0	0
12	0	0	0
13	11	11	0
14	11	11	0
15	31	31	0
16	30	30	0
17	30	30	0
18	29	29	0
19	27	27	0
20	32	32	0
21	35	35	0
22	24	24	0
23	23	23	0
24	26	26	0
25	17	17	0
26	21	21	0
27	19	19	0
28	17	17	0
29	12	12	0
30	11	11	0
Monthly mean	19.4	19.4	0.0
Cooperating stations	79	63	63



Predictions of the monthly smoothed Sunspot Number

using the last provisional value, calculated for December 2016: 28.5 (± 5%)

	SM	CM		SM	CM		SM	CM
2017 Jan	27	25	2017 Jul	20	23	2018 Jan	15	29
Feb	23	24	Aug	19	24	Feb	14	28
Mar	23	23	Sep	19	25	Mar	13	27
Apr	22	22	Oct	18	26	Apr	11	23
May	22	21	Nov	17	27	May	9	22
Jun	21	21	Dec	16	28	Jun	7	21

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	-	74	////	3	0/0	5
1	15	1	-	76	////	8	0/0	10
2	23	10	-	78	////	10	0/0	6
3	24	22	-	78	////	1	0/0	11
4	26	27	-	78	////	0	0/0	3
5	36	31	-	79	////	4	0/0	10
6	24	16	-	75	////	1	0/0	6
7	14	7	-	76	////	1	0/0	6
8	14	3	-	74	////	1	0/0	6
9	0	0	-	74	////	0	0/0	6
10	0	0	-	75	////	0	0/0	4
11	0	1	-	74	////	0	0/0	18
12	0	0	-	75	////	0	0/0	10
13	11	2	-	75	////	0	0/0	9
14	11	5	-	74	////	0	0/0	8
15	31	15	-	77	////	1	0/0	6
16	30	28	-	74	////	0	0/0	30
17	30	26	-	75	////	0	0/0	21
18	29	25	-	75	////	1	0/0	14
19	27	17	-	74	////	0	0/0	6
20	32	10	-	74	////	0	0/0	4
21	35	9	-	74	////	0	0/0	6
22	24	9	-	74	////	0	0/0	6
23	23	7	-	74	////	0	0/0	6
24	26	11	-	74	////	0	0/0	14
25	17	13	-	74	////	0	0/0	13
26	21	17	-	74	////	0	0/0	10
27	19	17	-	74	////	2	0/0	6
28	17	9	-	72	////	0	0/0	4
29	12	5	-	72	////	0	0/0	6
30	11	4	-	72	////	0	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 JUNE 2017

DATE	UT	NUMBER OF GROUPS	NUMBER OF SPOTS	RELATIVE SUNSPOT NUMBERS TOTAL	NORTH	SOUTH	CENTRAL	PPSI 10-5 WM-2	QUAL	OBS
1	750	1	2	12	12	0	0	0.4	3	OL
2	750	1	8	18	18	0	0	6.9	3	OL
3	1220	1	9	19	19	0	0	39.8	2	LL
4	810	1	18	28	28	0	0	51.3	2	LL
5	900	2	21	41	41	0	26	63.4	3	OB
6	920	1	18	28	28	0	28	6.1	2	BB
7	825	1	6	16	16	0	16	2.3	2	BB
8	900	1	3	13	13	0	13	0.4	3	OB
9	940	0	0	0	0	0	0	0.0	3	OP
10	845	0	0	0	0	0	0	0.0	2	OB
11	720	0	0	0	0	0	0	0.0	3	OB
12	740	0	0	0	0	0	0	0.0	2	BB
13	750	1	4	14	14	0	0	4.4	3	BB
14	810	1	3	13	13	0	0	9.0	3	BB
15	752	2	16	36	36	0	25	7.1	3	OL
16	730	2	15	35	35	0	24	24.2	3	OL
17	850	2	14	34	34	0	34	22.7	2	OL
18	745	2	8	28	28	0	11	20.0	3	OL
19	710	2	5	25	25	0	12	6.0	4	BB
20	810	2	4	24	24	0	13	2.9	3	BB
21	730	3	5	35	35	0	0	2.5	2	AE
22	748	2	4	24	24	0	0	2.4	3	OL
23	750	2	2	22	22	0	0	1.5	2	OB
25	940	1	7	17	17	0	17	5.6	1	OP
26	1255	1	8	18	18	0	18	5.9	2	BB
29	815	1	1	11	11	0	0	1.7	2	OB
30	915	1	1	11	11	0	0	1.3	2	OB

The relative mean sunspot number is 19.3.

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

K'= 1.144 (*)

1	14	7	18	13	16	19	29	25	19
2	21	8	15	14	15	20	27	26	21
3	22	9	0	15	41	21	40	27	***
4	32	10	0	16	40	22	27	28	***
5	47	11	0	17	39	23	25	29	13
6	32	12	0	18	32	24	***	30	13

The normalised relative monthly mean sunspot number is 22.

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

The Sun has been observed 27 days on 30 possible.