



Sunspot Index and Long-term Solar Observations

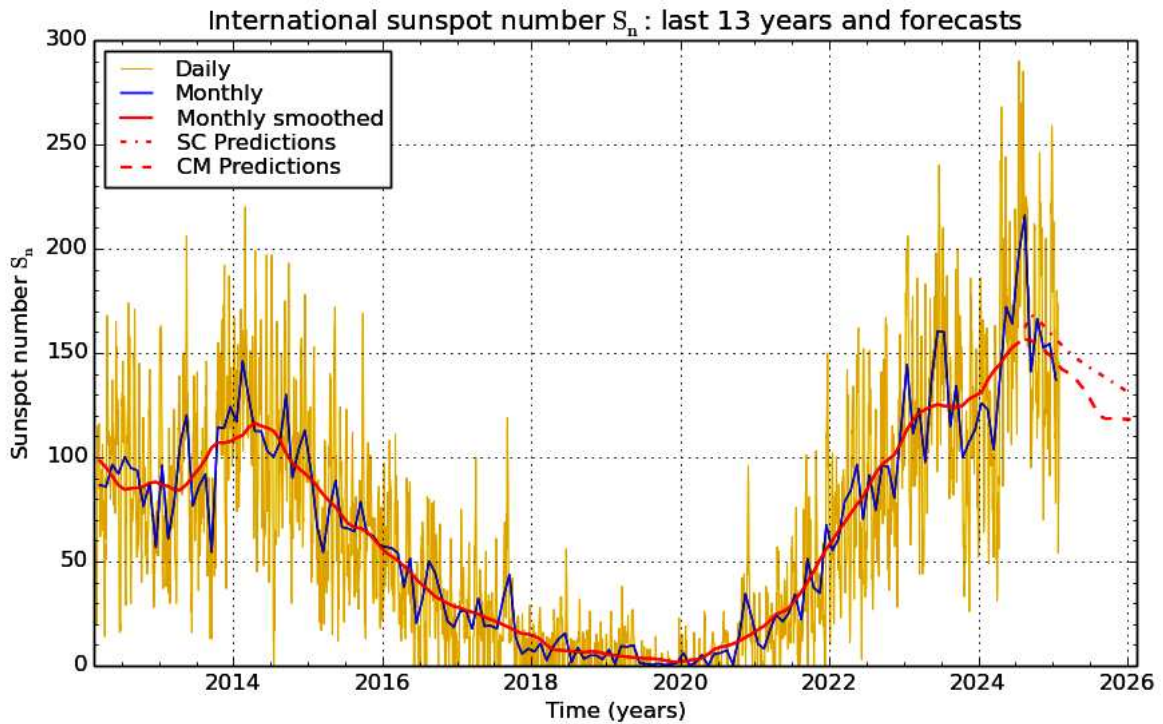
World Data Center supported by the ICSU - WDS

SUNSPOT BULLETIN 2025 n° 01

Provisional international and normalized hemispheric daily sunspot numbers for January 2025

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

Date	S_n	$S_n(N)$	$S_n(S)$
1	201	47	154
2	184	44	140
3	199	45	154
4	213	46	167
5	196	55	141
6	171	45	126
7	136	55	81
8	119	63	56
9	162	91	71
10	128	83	45
11	109	78	31
12	111	79	32
13	90	63	27
14	78	55	23
15	79	52	27
16	128	100	28
17	151	106	45
18	144	95	49
19	148	82	66
20	180	89	91
21	169	81	88
22	151	61	90
23	174	72	102
24	137	53	84
25	119	53	66
26	107	44	63
27	54	21	33
28	75	38	37
29	82	45	37
30	106	66	40
31	146	103	43
Monthly mean	137.0	64.8	72.2
Cooperating stations	64	57	57



SILSO graphics (<http://sidc.be/silso>) Royal Observatory of Belgium 2025 February 1

Predictions of the monthly smoothed Sunspot Number

using the last provisional value, calculated for July 2024: 154.9 ($\pm 5\%$)

	SM	CM		SM	CM		SM	CM
2024 Aug	162	157	2025 Feb	154	142	2025 Aug	140	120
Sep	168	156	Mar	151	141	Sep	138	119
Oct	166	154	Apr	148	138	Oct	136	119
Nov	163	152	May	146	134	Nov	134	119
Dec	160	149	Jun	144	131	Dec	132	118
2025 Jan	157	145	Jul	142	125	2026 Jan	131	118

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, February 1, 2025 09:06 UT
 Reproduction permitted if source mentioned.

Editor: Laure Lefèvre
 3, avenue Circulaire, B1180 Bruxelles, Belgium
 Fax: ../32/(0)2/374.98.22 Tel: ../32/(0)2/790.39.23 Email: silso.info@oma.be

Web: <http://sidc.oma.be/silso>
 FTP anonymous : omaftp.oma.be, directory: dist/astro/sidcdata

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

Date	S _n	PPSI	600	2800	COS	SFI	XI	Ak
31	179	64	-	218	////	13	3/0	17
1	201	85	-	219	////	16	4/0	96
2	184	96	-	212	////	14	1/0	20
3	199	87	-	200	////	33	3/2	10
4	213	66	-	209	////	27	3/1	29
5	196	71	-	169	////	209	4/0	28
6	171	70	-	172	////	29	3/0	16
7	136	54	-	168	////	2	0/0	15
8	119	48	-	160	////	3	0/0	8
9	162	48	-	162	////	0	1/0	8
10	128	57	-	157	////	14	1/0	16
11	109	38	-	156	////	0	0/0	8
12	111	31	-	158	////	0	0/0	7
13	90	36	-	160	////	1	0/0	12
14	78	39	-	166	////	4	0/0	12
15	79	48	-	174	////	1	0/0	16
16	128	81	-	208	////	5	0/0	14
17	151	179	-	227	////	21	9/0	24
18	144	170	-	222	////	27	2/0	9
19	148	191	-	234	////	3	1/0	16
20	180	210	-	230	////	4	0/0	22
21	169	137	-	225	////	6	1/0	13
22	151	112	-	214	////	10	1/0	12
23	174	100	-	215	////	17	0/0	19
24	137	55	-	205	////	19	1/0	5
25	119	34	-	182	////	2	0/0	3
26	107	10	-	171	////	0	0/0	2
27	54	3	-	162	////	0	1/0	7
28	75	7	-	171	////	0	0/0	15
29	82	19	-	173	////	0	1/0	8
30	106	35	-	184	////	1	0/0	7
31	146	50	-	207	////	23	3/0	8

S_n : 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 : $1 \times S_n + 10 \times "1" + 100 \times ">1"$).

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 JANUARY 2025

DATE	UT	NUMBER		RELATIVE SUNSPOT NUMBERS			PPSI 10-5	QUAL	OBS	
		OF GROUPS	OF SPOTS	TOTAL	NORTH	SOUTH				CENTRAL
2	1240	16	84	244	68	176	74	108.7	2	SB
3	940	16	70	230	50	180	70	112.0	2	SB
4	1120	10	46	146	20	126	65	58.7	1	OL
10	1030	10	57	157	95	62	15	98.6	3	OB
13	945	6	20	80	57	23	18	39.4	3	SB
14	1035	6	19	79	53	26	14	37.0	2	SB
21	1205	8	85	165	75	90	120	137.5	2	OL
23	1020	10	138	238	92	146	103	74.3	2	OL
27	930	4	7	47	22	25	11	3.9	2	SB
29	1320	5	26	76	45	31	15	16.4	2	OL
30	1535	7	34	104	64	40	28	55.1	1	OL
31	1045	8	77	157	113	44	16	37.3	2	OL

The relative mean sunspot number is 143.6.

 NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS $U'=K'U$ FOR JANUARY 2025

$K' = 0.949 (*)$

1	***	7	***	13	76	19	***	25	***
2	232	8	***	14	75	20	***	26	***
3	218	9	***	15	***	21	157	27	45
4	139	10	149	16	***	22	***	28	***
5	***	11	***	17	***	23	226	29	72
6	***	12	***	18	***	24	***	30	99
								31	149

The normalised relative monthly mean sunspot number is 136.

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

 The Sun has been observed 12 days on 31 possible.