



Sunspot Index and Long-term Solar Observations

World Data Center supported by the ICSU - WDS

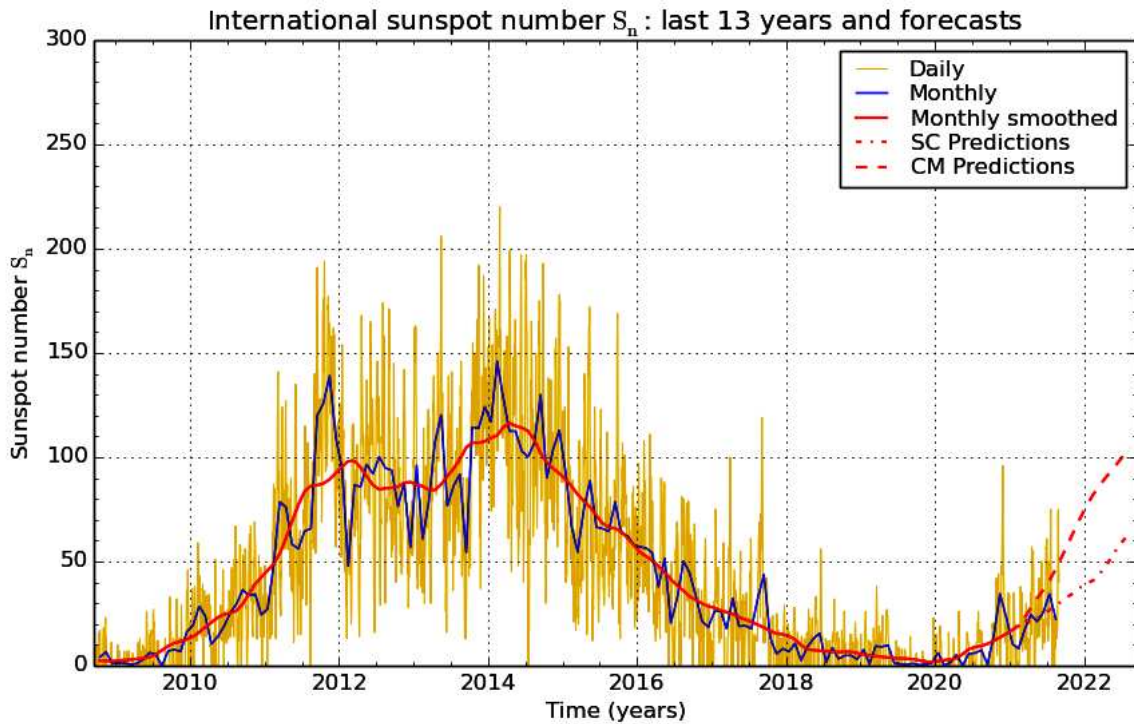
SUNSPOT BULLETIN

2021 n° 08

Provisional international and normalized hemispheric daily sunspot numbers for August 2021

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	8	4	4
2	13	0	13
3	17	0	17
4	17	0	17
5	24	9	15
6	9	9	0
7	0	0	0
8	0	0	0
9	7	7	0
10	0	0	0
11	19	10	9
12	8	8	0
13	10	9	1
14	20	20	0
15	23	23	0
16	20	20	0
17	15	15	0
18	13	13	0
19	22	22	0
20	13	13	0
21	17	17	0
22	19	19	0
23	17	17	0
24	21	17	4
25	35	15	20
26	48	23	25
27	70	27	43
28	75	24	51
29	51	12	39
30	43	12	31
31	40	12	28
Monthly mean	22.4	12.2	10.2
Cooperating stations	69	50	50



SILSO graphics (<http://sidc.be/silso>) Royal Observatory of Belgium 2021 September 1

Predictions of the monthly smoothed Sunspot Number

using the last provisional value, calculated for February 2021: 19.1 ($\pm 5\%$)

	SM	CM		SM	CM		SM	CM
2021 Mar	22	23	2021 Sep	31	53	2022 Mar	44	86
Apr	21	28	Oct	33	59	Apr	48	90
May	23	33	Nov	35	65	May	52	94
Jun	25	37	Dec	38	71	Jun	57	98
Jul	27	41	2022 Jan	40	77	Jul	61	101
Aug	29	47	Feb	41	82	Aug	64	104

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, September 1, 2021 09:06 UT

Reproduction permitted if source mentioned.

Editor: Frédéric Clette

3, avenue Circulaire, B1180 Bruxelles, Belgium

Fax: ..32/(0)2/374.98.22 Tel: ..32/(0)2/373.02.33 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	2	0	-	76	////	0	0/0	8
1	8	1	-	75	////	0	0/0	5
2	13	2	-	75	////	0	0/0	14
3	17	5	-	76	////	0	0/0	10
4	17	3	-	71	////	0	0/0	7
5	24	2	-	74	////	0	0/0	2
6	9	1	-	74	////	0	0/0	8
7	0	0	-	74	////	0	0/0	14
8	0	0	-	74	////	5	0/0	6
9	7	0	-	73	////	0	0/0	5
10	0	0	-	73	////	0	0/0	9
11	19	1	-	74	////	0	0/0	6
12	8	0	-	74	////	0	0/0	6
13	10	1	-	73	////	0	0/0	8
14	20	1	-	73	////	0	0/0	5
15	23	1	-	75	////	0	0/0	11
16	20	7	-	74	////	0	0/0	12
17	15	5	-	73	////	0	0/0	6
18	13	1	-	75	////	0	0/0	7
19	22	6	-	75	////	0	0/0	5
20	13	5	-	78	////	0	0/0	6
21	17	1	-	77	////	1	0/0	4
22	19	4	-	77	////	3	0/0	3
23	17	8	-	78	////	0	0/0	3
24	21	10	-	81	////	4	0/0	7
25	35	16	-	84	////	0	0/0	10
26	48	19	-	89	////	13	0/0	6
27	70	38	-	90	////	16	0/0	20
28	75	45	-	90	////	21	1/0	17
29	51	39	-	89	////	13	0/0	10
30	43	32	-	91	////	9	0/0	8
31	40	23	-	84	////	3	0/0	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 AUGUST 2021

DATE	UT	NUMBER		RELATIVE SUNSPOT NUMBERS			PPSI	QUAL	OBS	
		OF GROUPS	OF SPOTS	TOTAL	NORTH	SOUTH				CENTRAL
1	1010	2	2	22	11	11	0	0.6	2	OL
2	1045	1	5	15	0	15	0	1.0	3	OB
3	915	1	5	15	0	15	0	3.4	3	OB
4	730	1	5	15	0	15	0	2.5	3	OB
5	950	2	4	24	12	12	12	0.5	3	OL
6	1230	0	0	0	0	0	0	0.0	3	OB
7	750	0	0	0	0	0	0	0.0	3	OB
8	945	0	0	0	0	0	0	0.0	3	OB
9	1359	0	0	0	0	0	0	0.0	1	JV
10	746	0	0	0	0	0	0	0.0	3	JV
11	645	2	2	22	11	11	0	0.4	1	JV
12	1022	1	1	11	11	0	0	0.2	1	JV
13	737	0	0	0	0	0	0	0.0	1	JV
14	1157	3	5	35	35	0	23	0.9	3	JV
15	816	2	5	25	25	0	14	1.7	2	JV
16	1000	2	7	27	27	0	16	23.0	1	CB
17	730	1	2	12	12	0	0	18.6	1	CB
19	940	2	5	25	25	0	14	23.4	1	CB
20	851	1	6	16	16	0	16	21.6	1	CB
21	721	1	1	11	11	0	0	0.2	2	CB
22	1139	1	3	13	13	0	0	7.1	1	CB
24	745	2	7	27	16	11	0	4.2	2	SB
25	700	2	21	41	20	21	20	16.9	3	SB
26	905	3	20	50	25	25	14	21.1	2	SB
27	630	4	38	78	29	49	17	57.5	3	SB
28	935	4	46	86	27	59	27	59.9	2	SB
31	1120	2	19	39	11	28	0	11.0	3	OL

The relative mean sunspot number is 22.6.

NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS $U'=K'U$ FOR AUGUST 2021

$K'= 1.044 (*)$

1	23	7	0	13	0	19	26	25	43
2	16	8	0	14	37	20	17	26	52
3	16	9	0	15	26	21	11	27	81
4	16	10	0	16	28	22	14	28	90
5	25	11	23	17	13	23	***	29	***
6	0	12	11	18	***	24	28	30	***
								31	41

The normalised relative monthly mean sunspot number is 24.

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

The Sun has been observed 27 days on 31 possible.