



Sunspot Index and Long-term Solar Observations

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SUNSPOT BULLETIN

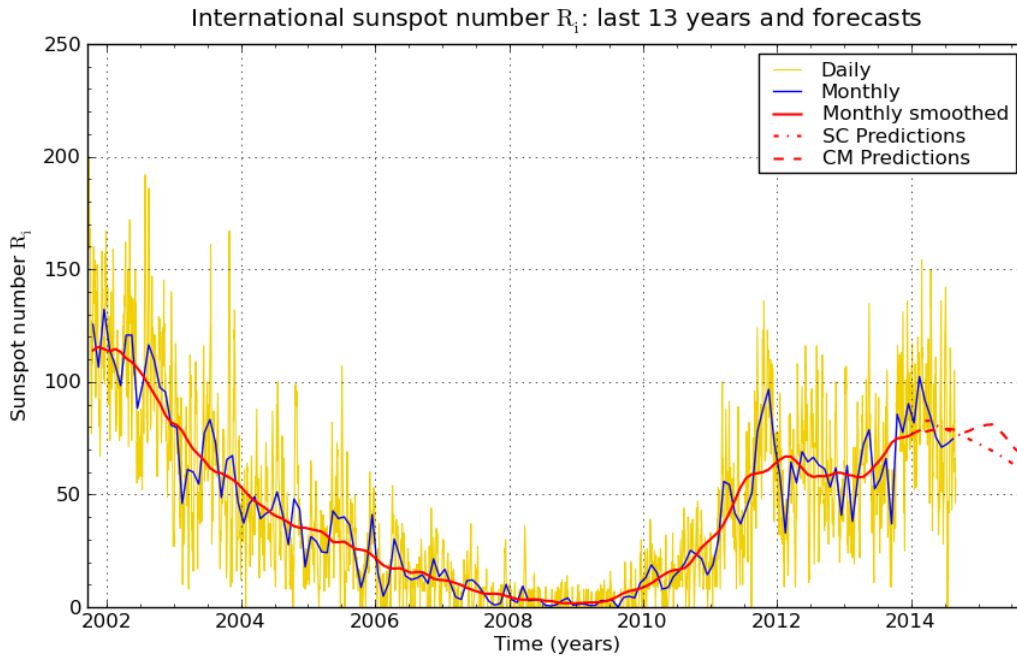
2014

n° 8

Provisional international and normalized hemispheric daily sunspot numbers for August 2014

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

Date	R' _I	R' _N	R' _S
1	115	18	97
2	115	24	91
3	107	21	86
4	102	24	78
5	89	25	64
6	79	18	61
7	86	30	56
8	62	37	25
9	58	35	23
10	43	21	22
11	48	37	11
12	52	43	9
13	55	44	11
14	60	42	18
15	75	47	28
16	76	54	22
17	81	50	31
18	73	45	28
19	69	38	31
20	71	47	24
21	84	53	31
22	87	56	31
23	105	59	46
24	104	76	28
25	81	63	18
26	60	42	18
27	66	41	25
28	57	27	30
29	46	13	33
30	53	15	38
31	57	13	44
Monthly mean	74.7	37.4	37.3
Cooperating stations	67	58	58



SILSO graphics (<http://sidc.be>) Royal Observatory of Belgium 01/09/2014

Predictions of the monthly smoothed Sunspot Number
 using the last provisional value, calculated for February 2014: 78.4 ($\pm 5\%$)

		SM	CM			SM	CM			SM	CM
2014	Mar	83	78	2014	Sep	77	78	2015	Mar	69	81
	Apr	83	79		Oct	76	78		Apr	68	79
	May	81	79		Nov	74	78		May	66	77
	Jun	80	79		Dec	73	80		Jun	65	74
	Jul	79	79	2015	Jan	72	80		Jul	63	71
	Aug	78	79		Feb	71	81		Aug	61	68

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, due to 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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Due to technical problems, the publication of this issue of the Sunspot Bulletin was delayed by two weeks. This remains exceptional. Finally, here it is! We apologize for any concern or inconvenience.

S.I.D.C. SUMMARY OF THE URSIGRAMS

Date	R' _i	PPSI	600	2800	COS	SFI	XI	Ak	SEA
31	95	69	-	156	////	4	1/0	8	
1	115	86	-	168	////	35	2/0	12	
2	115	75	-	156	////	13	0/0	12	
3	107	87	-	152	////	23	0/0	8	
4	102	70	-	139	////	9	0/0	15	
5	89	62	-	139	////	6	0/0	11	
6	79	68	-	137	////	5	0/0	7	
7	86	60	-	136	////	21	0/0	6	
8	62	72	-	123	////	16	0/0	14	
9	58	53	-	113	////	8	0/0	3	
10	43	46	-	108	////	9	0/0	11	
11	48	41	-	104	////	4	0/0	10	
12	52	39	-	104	////	6	0/0	14	
13	55	36	-	103	////	7	0/0	6	
14	60	42	-	103	////	10	0/0	4	
15	75	44	-	113	////	34	0/0	6	
16	76	60	-	112	////	7	0/0	2	
17	81	60	-	115	////	10	0/0	8	
18	73	49	-	111	////	19	0/0	6	
19	69	50	-	111	////	4	0/0	20	
20	71	51	-	118	////	17	0/0	8	
21	84	58	-	128	////	8	1/0	12	
22	87	57	-	126	////	141	1/0	4	
23	105	79	-	132	////	38	0/0	5	
24	104	99	-	141	////	123	1/0	2	
25	81	103	-	135	////	20	2/0	3	
26	60	104	-	128	////	5	0/0	4	
27	66	71	-	123	////	9	0/0	20	
28	57	83	-	119	////	20	0/0	24	
29	46	64	-	120	////	3	0/0	20	
30	53	86	-	123	////	22	0/0	16	
31	57	74	-	125	////	19	0/0	17	

- 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** : From October 1992, Solar Flare Index from the S.I.D.C. (origin : Ursigrams – UGEOR, evaluation : $1 \times \text{Sn} + 10 \times "1" + 100 \times ">1"$).
- XI** : X-flares index from the Ursigrams (M-flares/X-flares) (origin : Ursigrams – UGEOR, UGEOI).
- Ak** : geomagnetic index from Wingst, Germany (origin : Ursigrams).
- SEA** : sudden enhancements of atmospherics from Uccle & Humain (Royal Observatory, Belgium).

Note that due to problems of interferences saturating our receivers, no SEA could be detected this month.

SOLAR PHYSICS DEPARTMENT

UCCLE DAILY PROVISIONAL RELATIVE SUNSPOT NUMBERS FOR AUGUST 2014

DATE	UT	NUMBER		RELATIVE SUNSPOT NUMBERS			PPSI 10-5 WM-2	QUAL	OBS	
		OF GROUPS	OF SPOTS	TOTAL	NORTH	SOUTH				CENTRAL
1	720	9	79	169	15	154	59	69.6	3	OL
2	725	10	75	175	37	138	84	52.2	2	OL
3	700	8	82	162	27	135	104	78.2	3	OL
4	945	7	41	111	28	83	83	38.2	2	OB
5	810	6	27	87	16	71	58	29.4	3	OB
7	945	6	30	90	32	58	18	30.5	3	OB
9	1030	3	12	42	15	27	26	20.1	2	OB
11	715	5	12	62	50	12	27	33.7	2	AE
12	730	6	13	73	61	12	22	39.3	2	AE
13	800	6	16	76	64	12	33	30.7	2	AE
14	930	5	20	70	48	22	0	37.8	2	AE
15	1030	6	35	95	57	38	31	45.7	2	AE
16	840	5	26	76	49	27	21	61.5	2	AE
18	700	6	37	97	57	40	62	25.4	3	OL
19	1030	6	28	88	46	42	37	39.1	2	OL
20	725	6	36	96	64	32	52	41.8	3	OL
21	720	6	50	110	70	40	27	56.6	3	OL
22	740	7	41	111	80	31	50	19.8	3	OL
23	725	10	37	137	76	61	69	53.7	3	OL
24	745	9	44	134	101	33	52	80.9	3	LL
27	840	5	13	63	39	24	37	15.9	2	OB
29	1300	4	10	50	17	33	39	29.7	3	OB
31	815	6	36	96	20	76	54	38.3	3	OL

The relative mean sunspot number is 98.7.

NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS $U'=K'U$ FOR AUGUST 2014

$$K' = 0.747 (*)$$

1	126	7	67	13	57	19	66	25	***
2	131	8	***	14	52	20	72	26	***
3	121	9	31	15	71	21	82	27	47
4	83	10	***	16	57	22	83	28	***
5	65	11	46	17	***	23	102	29	37
6	***	12	55	18	72	24	100	30	***
								31	72

The normalised relative monthly mean sunspot number is 74.

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

The Sun has been observed 23 days on 31 possible.