Sunspot Index Data Center

SUNSPOT BULLETIN

Supported by UNESCO and ICSU through the FAGS

1987 , No. 7 ,

Provisional Sunspot - Numbers for JULY 1987

Dependent on observations at Locarno Specola Solare,
complemented by an international network and
determined at the Observatoire Royal de Belgique.
Thirty eight cooperating stations on Aug. 1st ,0930UT

Day	R'_I	Day	R'_I
1	0	16	17
2	0	17	12
3	0	18	17
4	0	19	23
5	13	20	33
6	0	21	67
7	9	22	87
8	12	23	102
9	13	24	92
10	11	25	88
11	0	26	85
12	0	27	77
13	0	28	60
14	0	29	60
15	11	30	62
		31	73

MEAN = 33 .0

Predictions of the smoothed monthly Sunspot - Numbers

Classical Method				S.I.D.C. Adjusted Values	
1987 Aug.	25 (± 5)	1988 Feb.	32 (± 8)	1987 Aug.	30 (± 6)
Sep.	26 (± 5)	Mar.	33 (± 8)	Sep.	31 (± 6)
Oct.	27 (± 5)	Apr.	34 (± 8)	Oct.	33 (± 7)
Nov.	28 (± 6)	May.	35 (±12)	Nov.	34 (± 7)
Dec.	29 (± 6)	Jun.	36 (±12)	Dec.	35 (± 7)
1988 Jan.	31 (± 7)	Jul.	37 (±12)	1988 Jan.	37 (± 7)

Forecasted values evaluated on the basis of the latest provisional monthly smoothed sunspot-number : 1987 January 17 .4 ± 5 %

Provisional smoothed values

1987 Feb.	18 (± 3)	1987 May .	22 (± 4)
Mar .	20 (± 4)	Jun .	23 (± 5)
Apr .	21 (± 4)	Jul .	24 (± 5)

Brussels, August 1st , 1987

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S.I.D.C. SUMMARY OF URSIGRAMS

1987 JULY R'_{im} = 33 .0

Date	R_i	PPSI	600	2800	COS	XFI	XI	A_K	SEA	
1	0	0	56	74	1004	0	0/0	2	.	
2	0	0	55	72	6	0	0/0	5	.	
3	0	0	53	71	10	0	0/0	10	.	ssc(1917) mgst
4	0	0	54	71	9	0	0/0	12	.	
S 5	13	0	53	71	.	0	0/0	8	.	
6	0	0	52	71	11	0	0/0	8	.	
7	9	0	51	72	5	0	0/0	6	.	
8	12	3	51	74	3	1	0/0	12	.	
9	13	3	50	74	4	4	0/0	11	.	
10	11	1	49	74	7	0	0/0	12	.	
11	0	0	50	73	9	0	0/0	10	.	
S 12	0	0	50	73	6	0	0/0	10	.	
13	0	0	50	73	6	0	0/0	4	.	
14	0	0	51	74	5	0	0/0	6	.	
15	11	0	51	76	7	0	0/0	26	.	
16	17	4	52	78	9	0	0/0	23	.	
17	12	7	54	79	3	0	0/0	14	.	
18	17	12	54	80	2	0	0/0	14	.	
S 19	23	23	54	82	2	0	0/0	10	.	
20	33	30	57	91	1	0	0/0	13	.	
21	67	50	58	93	2	0	0/0	8	.	
22	87	61	60	101	3	14	0/0	10	.	
23	102	86	61	112	4	16	0/0	8	.	
24	92	104	63	111	1004	16	1/0	17	0955	1b(0953)sid-mgst-ten-(600
25	88	116	61	111	997	9	0/0	18	.	
S 26	85	110	59	110	997	3	0/0	4	.	
27	77	76	58	102	1001	17	1/0	6	1811	sf(1805)-sid-mgst
28	60	61	60	99	999	0	0/0	28	.	ssc(0850)-mgst
29	60	53	56	94	992	0	0/0	33	.	
30	62	41	55	91	994	6	0/0	10	.	
31	73	41	54	89	997	2	0/0	12	.	

The solar activity will probably grow during august and september.Daily max over 100 on July 23 .Presently ,the best SIDC-estimation for the next maximum of the cycle:1991 May (±6 months) and R(max)=85 (±15).A second estimation gives 1991 Feb. and R(max)=105(±20).

R'_{im} : provisional International monthly Sunspot-Number from the S.I.D.C.

R'_i : provisional International daily Sunspot-Numbers from the S.I.D.C.

PPSI : Prompt Photometric Sunspot Index from the S.I.D.C. in 10^{-5} $W.m^{-2}$ Quantity to substract at the mean solar constant, due to the presence of the sunspots.

600 : 600 Mhz solar flux from the Humain Station (Royal Observatory of Belgium).

2800 : 2800 Mhz solar flux from the Ursigrams (origin : Herzberg Institute Ottawa).

COS : thousands of cosmic rays counts from the Ursigrams

XFI : X-Flare Index from the S.I.D.C. on the base of the Ursigrams. The sum of number of class C-flares + 10 x class M-flares of significative X-ray flux + 100 x X-flares with important X-ray flux.

XI : X-flare Index from the Ursigrams (number of M-flares/number of X-flares)

A_K : geomagnetic Index of Wingst station from the Ursigrams (Ampli. fluct. in 2 nT).

SEA : sudden enhancement of atmospherics on 27 kHz from Uccle and Humain stations .

sid : Sudden ionospheric disturbance; ssc : sudden storm commencement

sfe : Solar flare effect; // : two ribbons flare; P : proton flare

mst : magnetic storm; II radio-outburst; pca : polar cap absorption

aur : aurorae; 1b, 2b ... : flare of class 1 or 2 ... (bright).

OBSERVATOIRE ROYAL DE BELGIQUE

DEPARTEMENT 4 RADIOASTRONOMIE ET PHYSIQUE SOLAIRE

NOMBRES RELATIFS DE WOLF JOURNALIERS

SUNSPOT RELATIVE NUMBERS

STATION UCCLE BELGIUM JUILLET 1987

DATE	TU	NOMBRE DE GROUPES	NOMBRE DE TACHES	NOMBRE DE WOLF	PPSI 10-6 HM-2	QUALITE	OBSER
1	754	0	0	0	0.	3	VI
2	754	0	0	0	0.	4	HB
3	602	0	0	0	0.	4	HB
4	1030	0	0	0	0.	2	AK
5	643	0	0	0	0.	5	HB
6	540	0	0	0	0.	5	HB
7	1110	0	0	0	0.	3	HB
8	1148	1	5	15	40.	3	VI
9	650	1	5	15	28.	2	HB
10	1048	1	2	12	12.	3	AK
11	730	0	0	0	0.	5	HB
12	723	0	0	0	0.	3	PC
13	642	0	0	0	0.	4	VI
15	903	0	0	0	0.	1	VI
16	903	2	4	24	62.	2	AK
17	833	1	3	13	77.	1	VI
18	854	1	2	12	149.	2	ST
19	1038	1	2	12	220.	1	AK
20	755	2	15	35	326.	3	AK
21	1643	4	34	74	557.	3	HB
22	841	5	32	82	606.	2	HB
23	702	6	40	100	826.	2	HB
24	908	5	36	86	931.	3	HB
25	1043	5	44	94	906.	2	ST
26	1004	4	30	70	915.	2	HB
27	1238	3	38	68	819.	1	ST
28	821	3	24	54	800.	1	ST
29	1130	4	23	63	718.	2	AK
30	1400	5	29	79	478.	4	AK
31	855	6	17	77	483.	2	AK

LE SOLEIL A ETE OBSERVE 30 JOURS SUR 31 POSSIBLES
LE NOMBRE RELATIF DE WOLF MOYEN EST DE 32.8

EDITEUR RESPONSABLE
A. KOECKELENBERGH
OBSERVATOIRE ROYAL DE BELGIQUE
UCCLE BELGIUM

NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS

U'=K'U FOR 1987 JULY

K'= .912 (*)

1	0	7	0	13	0	19	10	25	85
2	0	8	13	14	***	20	31	26	63
3	0	9	13	15	0	21	67	27	61
4	0	10	10	16	21	22	74	28	49
5	0	11	0	17	11	23	91	29	57
6	0	12	0	18	10	24	78	30	72
								31	70

THE SUN WAS OBSERVED 30 DAYS ON 31 POSSIBLE
THE NORMALISED LOCAL MONTHLY MEAN WOLF NUMBER IS 29

* K' IS THE MEAN OF THE MONTHLY K'S FOR THE LAST FIVE YEARS

UCCLE OBSERVATIONAL MAJOR SUNSPOTS FOR 1987 JULY
E AND F BRUNNER'S TYPE GROUPS

UCCLE NO	EAST LIMB DATE	DATE AND TYPE 1ST OBS	CMP	LAST OBS	WEST LIMB DATE

NONE

PROBABLE RETURN OF MAJOR GROUPS FOR 1987 AUGUST

NO	NEW EAST LIMB	NEW CMP	NEW WEST LIMB

NONE