



SUNSPOT BULLETIN
Supported by UNESCO and ICSU through the FAGS

1986 , No. 10

Provisional Sunspot - Numbers for OCTOBER- 1986

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

Day	R _I	Day	R _I
1	11	16	15
2	14	17	16
3	23	18	22
4	24	19	31
5	24	20	39
6	25	21	47
7	27	22	54
8	20	23	67
9	32	24	76
10	31	25	72
11	23	26	60
12	28	27	65
13	22	28	61
14	0	29	63
15	0	30	62
		31	53

MEAN = 35 . 7

Predictions of the smoothed
monthly Sunspot - Numbers

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New working hypothesis: smoothed minimum between 1986 June and September.
Classical Method S.I.D.C. Adjusted Values

1986 Nov. 10	1987 Feb. 13	1986 Nov. 10	1987 Feb. 10
Dec. 11	Mar. 14	Dec. 9	Mar. 11
1987 Jan. 12	Apr. 15	1987 Jan. 10	Apr. 11

Precision on the sixth predicted value : ± 4

Classical estimated smoothed value for 1987 July 18 ± 6

Forecasted values are evaluated on the basis of the latest provisional
monthly smoothed value (1986 April) : 13 . 7 ± 5 %

Brussels, November 1st , 1986

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S.I.D.C. SUMMARY OF URSIGRAMS
 1986 OCTOBER $R'_{1m} = 35.7$

Date	R'_1	PPSI	600 UGC	2800 OTT	COS	XFI	XI	A_k	
1	11	9	47	71	..	1	0/0	10	
2	14	22	45	72	1012	2	0/0	28	
3	23	18	47	72	17	1	0/0	10	
4	24	21	45	71	16	0	0/0	9	
5	24	5	45	71	15	0	0/0	10	
6	25	5	48	73	19	6	0/0	10	
7	27	10	..	74	22	1	0/0	8	
8	20	6	50	75	27	1	0/0	6	
9	32	10	..	75	23	0	0/0	8	
10	31	6	50	74	27	0	0/0	4	
11	23	2	50	74	25	5	0/0	5	
12	28	2	47	76	24	6	0/0	3	
13	22	0	49	76	18	3	0/0	26	SSC - mgst
14	0	0	50	75	9	0	0/0	24	
15	0	0	47	72	13	0	0/0	16	
16	15	0	53	80	13	0	0/0	6	
17	16	8	54	83	16	10	0/0	8	
18	22	19	57	84	12	18	0/0	20	2b
19	31	32	52	89	8	19	1/0	21	↓ -10cm-IV- SID
20	39	46	50	93	12	6	0/0	19	
21	47	72	51	92	6	1	0/0	11	
22	54	84	..	95	13	5	0/0	6	
23	67	73	..	99	18	25	0/0	7	
24	76	71	..	98	17	9	0/0	2	
25	72	64	..	96	14	11	0/0	4	
26	60	48	..	95	8	7	0/0	4	
27	65	34	57	96	6	0	0/0	15	
28	61	..	56	95	10	6	0/0	10	
29	63	29	56	93	11	4	0/0	18	
30	62	37	57	91	12	10	0/0	19	
31	53	51	..	91	10	0	0/0	7	

Ten sunspot groups, four of latitude greater than ± 20 (one :35N). Possible smoothed minimum between June and September 1986.

- R'_{1m} : provisional International monthly Sunspot-Number from the S.I.D.C.
 R'_1 : 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 subtract at the mean solar constant, due to the presence of the sunspots.
 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 significant 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 $2\pi T$).
 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) .
 600 : 600 Mhz provisional mean flux in $10^{-22} \text{ W.m}^{-2} \text{ Hz}^{-1}$; Humain station (Belgium).

OBSERVATOIRE ROYAL DE BELGIQUE

DEPARTEMENT 4 RADIOASTRONOMIE ET PHYSIQUE SOLAIRE

NOMERES RELATIFS DE WOLF JOURNALIERS

PROVISOIRES

PROVISIONAL

SUNSPOT RELATIVE NUMBERS

STATION UCCLE BELGIUM

OCTOBE 1986

DATE	UT	NOMBRE DE GROUPELS	NOMERE DE TACHES	NOMERE DE WOLF	NOMB REL ZONE CENTRALE	PPSI 10-6 WM-2	QUAL	OBS
1	0909	1	1	11	0	144.	3	VI
2	1016	1	1	11	0	220.	2	HB
3	1055	2	6	28	10	205.	2	VI
4	0833	2	6	26	12	363.	4	AK
5	1015	2	5	25	13	40.	4	CG
6	0921	2	10	30	30	41.	3	VI
7	0741	2	11	31	31	69.	2	HB
8	0917	1	9	19	0	59.	2	VI
9	0956	2	13	33	18	62.	2	VI
10	0747	2	11	31	0	50.	2	VI
12	0909	2	9	29	0	17.	3	PC
13	0812	1	3	13	0	2.	1	VI
14	0800	0	0	0	0	0.	2	HB
15	0757	0	0	0	0	0.	2	VI
17	1424	1	7	17	0	81.	1	VI
18	0800	1	7	17	0	180.	1	HB
19	1010	1	19	29	0	323.	2	CG
20	1255	2	26	46	0	501.	1	VI
23	0834	2	62	92	56	790.	3	VI
24	0821	3	51	81	47	644.	3	VI
25	1050	4	29	69	43	481.	1	CG
26	1045	4	22	62	28	429.	2	HB
27	1006	4	12	52	12	366.	2	VI
29	0806	5	13	68	12	285.	2	HB
30	0311	4	15	55	0	277.	2	VI
31	1400	3	20	50	15	487.	2	AK

LE SOLEIL A ETE OBSERVE 26 JOURS SUR 31 POSSIBLES
LE NOMBRE RELATIF DE WOLF MOYEN EST DE 35.3

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NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS

U*=K*U FOR 1986						OCTOBER				
						K* = .916 (*)				
1	10	7	28	13	11	19	26	25	63	
2	10	8	17	14	0	20	42	26	56	
3	25	9	34	15	0	21	***	27	47	
4	23	10	28	16	***	22	***	28	***	
5	22	11	***	17	15	23	84	29	62	
6	27	12	26	18	15	24	74	30	50	
								31	45	

THE SUN WAS OBSERVED 26 DAYS ON 31 POSSIBLE
 THE NORMALISED RELATIVE MONTHLY MEAN WOLF NUMBER IS 32

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

UCCLE OBSERVATIONAL MAJOR SUNSPOTS FOR 1986 OCTOBER
 E AND F BRUNNER'S TYPE GROUPS

UCCLE NO	EAST LIMB DATE	DATE AND TYPE	WEST LIMB DATE
		IST OBS CMP LAST OBS	
1-1781	10 16.7	17 E 10 23.5	29 H 10 30.2

PROBABLE RETURN OF MAJOR GROUPS FOR 1986 NOVEMBER

NO	NEW EAST LIMB	NEW CMP	NEW WEST LIMB
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NONE