



## SUNSPOT BULLETIN

Supported by UNESCO and ICSU through the FAGS

1987, No. 1

Provisional Sunspot - Numbers for JANUARY 1987

Dependent on observations at Locarno Specola Solare,  
 complemented by an international network and  
 determined at the Observatoire Royal de Belgique.  
 Thirty four coop. stations on Feb. 1st, 10 UT

Day	R <sub>I</sub>	Day	R <sub>I</sub>
1	19	16	0
2	15	17	13
3	12	18	17
4	11	19	9
5	10	20	9
6	9	21	14
7	10	22	20
8	0	23	23
9	0	24	12
10	0	25	13
11	0	26	14
12	0	27	12
13	0	28	20
14	8	29	15
15	9	30	0
		31	10

MEAN = 9.8

Predictions of the smoothed  
 monthly Sunspot - Numbers

Classical Method		S.I.D.C. Adjusted Values	
1987 Feb. 17	1987 May 21	1987 Feb. 19	1987 May 28
Mar. 18	Jun. 22	Mar. 22	Jun. 29
Apr. 19	Jul. 23	Apr. 26	Jul. 32

Precision on the sixth predicted value :  $\pm 7$ 

Classical estimated smoothed value for 1987 Oct. 26  $\pm 7$   
 Forecasted values are evaluated on the basis of the latest provisional  
 monthly smoothed value ( 1986 July ) : 13.7  $\pm 5$

Brussels, February 1st, 1987

A. Koeckelenbergh.

Reproduction permitted if the source is mentioned.

Ed. Resp. Dr. André Koeckelenbergh, 3, avenue Circulaire, B-1180 BRUXELLES, BELGIUM  
 TELEX : 21565 obsbel - Tél. : (02) 375 24 84 EXT 611

S.I.D.C. SUMMARY OF URSIGRAMS  
1987 JANUARY  $R'_{im} = 9.8$

Date	$R'_1$	PPSI	600	2800	COS	XFI	XI	$A_k$	
1	19	13	53	74	1017	6	0/0	24	
2	15	8	54	73	9	0	0/0	10	
3	12	5	57	72	19	0	0/0	7	
4	11	3	57	71	18	0	0/0	3	
5	10	1	..	73	20	0	0/0	3	
6	9	1	56	72	21	0	0/0	3	
7	10	1	57	72	22	0	0/0	6	
8	0	0	58	71	20	0	0/0	9	
9	0	0	57	70	14	0	0/0	10	
10	0	0	58	70	22	0	0/0	5	
11	0	0	61	70	26	0	0/0	6	mgst
12	0	0	59	71	27	0	0/0	12	
13	0	0	57	72	21	0	0/0	9	
14	8	0	58	74	29	0	0/0	6	
15	9	1	63	74	24	0	0/0	8	
16	0	0	61	73	26	0	0/0	15	
17	13	1	61	73	31	0	0/0	10	
18	17	1	58	73	29	1	0/0	8	
19	9	0	59	72	30	0	0/0	10	
20	9	0	58	71	25	0	0/0	22	
21	14	4	..	75	20	5	0/0	12	
22	20	7	58	76	19	5	0/0	14	
23	23	5	57	74	23	1	0/0	16	
24	12	3	56	74	22	0	0/0	10	
25	13	2	..	73	23	1	0/0	8	
26	14	1	55	75	25	0	0/0	8	
27	12	2	55	72	26	0	0/0	7	
28	20	2	52	73	28	0	0/0	18	
29	15	1	54	73	27	0	0/0	11	
30	0	0	..	72	33	0	0/0	2	
31	10	0	..						

Nine sunspot groups: six of high latitude .Minimum around May 1987

- $R'_{im}$  : 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 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  $2nT$ ).
- 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 solar flux from Humain Station (Royal Obs. Belgium)

## OBSERVATOIRE ROYAL DE BELGIQUE

## DEPARTEMENT 4 RADIOASTRONOMIE ET PHYSIQUE SOLAIRE

## NOMBRES RELATIFS DE WOLF JOURNALIERS

PROVISOIRES

PROVISIONAL

## SUNSPOT RELATIVE NUMBERS

STATION UCCLE BELGIUM

JANVIER 1987

DATE	UT	NOMBRE DE GROUPE	NOMBRE DE TACHES	NOMBRE DE WOLF	NOMB REL ZONE CENTRALE	PFSI 10-6 WM-2	QUAL	OBS
3	1040	1	8	18	18	65.	3	AK
6	1242	1	1	11	0	2.	1	VI
7	0925	1	1	11	0	1.	2	VI
8	0923	0	0	0	0	0.	1	VI
9	1111	0	0	0	0	0.	1	VI
11	1020	0	0	0	0	0.	3	AK
12	0914	0	0	0	0	0.	1	VI
13	0935	0	0	0	0	0.	1	VI
14	0944	0	0	0	0	0.	2	VI
15	1019	0	0	0	0	0.	2	VI
17	1040	2	3	23	0	4.	2	CG
26	1400	1	5	15	0	5.	2	CG
29	0906	2	3	23	11	5.	3	VI
30	0907	0	0	0	0	0.	2	VI
31	0901	1	2	12	0	4.	3	HB

LE SOLEIL A ETE OBSERVE 15 JOURS SUR 31 POSSIBLES  
LE NOMBRE RELATIF DE WOLF MOYEN EST DE 7.5

ED. RESP. DR. ANDRE KOECKELENBERGH  
3, AV. CIRCULAIRE, B 1180 BRUXELLES. BELGIUM.  
TELEX : 21565 OBSBEL - TEL. : (02) 3752484 EXT 611

NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS

U' = K'U FOR 1987										JANUARY	
K' = .938 (*)											
1	***	7	10	13	0	19	***	25	***		
2	***	8	0	14	0	20	***	26	14		
3	16	9	0	15	0	21	***	27	***		
4	***	10	***	16	***	22	***	28	***		
5	***	11	0	17	21	23	***	29	21		
6	10	12	0	18	***	24	***	30	0		
									31	11	

THE SUN WAS OBSERVED 15 DAYS ON 31 POSSIBLE  
 THE NORMALISED RELATIVE MONTHLY MEAN WOLF NUMBER IS 6

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

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

UCCLE EAST LIMB		DATE AND TYPE			WEST LIMB	
NO	DATE	IST OBS	CMF	LAST OBS	DATE	
NONE						

PROBABLE RETURN OF MAJOR GROUPS FOR 1987 FEBRUARY

NO	NEW EAST LIMB	NEW CMF	NEW WEST LIMB
NONE			