



Sunspot Index Data Center

SUNSPOT BULLETIN

Data Analysis Service supported by the FAGS

1989 No 7

Provisional Sunspot-Numbers for JULY 1989

Dependent on observations at LOCARNO Specola Solare
completed by an international network and
determined at the Observatoire Royal de BELGIQUE.
Fourty Four coop. stations on AUGUST 1989,1st,0930UT

Table with 4 columns: Day, R'i, Day, R'i. It lists sunspot numbers for each day of July 1989 and the mean value of 126.8.

Predictions of the smoothed monthly Sunspot Numbers
Classical Method S.I.D.C. Adjusted values
1989 AUG.179(+44) 1990 FEB.166(+55) 1989 AUG.188(+47)
SEP.179 MAR.160 SEP.187
OCT.178 APR.155 OCT.186
NOV.177 MAY 151 NOV.185
DEC.174 JUN.147 DEC.181
1990 JAN.170(+42) JUL.143(+48) 1990 JAN.175(+44)
Forecasted values on the basis of the latest provisional monthly
smoothed Sunspot Number:1989 JANUARY = 141 . 9 +5%
Provisional smoothed values:
1989 FEB.147(+7) 1989 APR.160 1989 JUN.172
MAR.154 MAY 166 JUL.177(+9)

Brussels, 1989 AUGUST ,1st

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

1989 JULY R' = 126.8
im

Date	R' i	PPSI	600	2800	COS	XFI	XI	Ak	SEA
30	156	186	47	213	877	46	3/0	12	1736 p(0655)
1	128	110	47	199	862	9	0/0	24	(1030) ssc(1548)
2	149	83	46	189	855	17	0/0	6	
3	129	73	47	191	867	33	1/0	3	1b(2359)+ten+sid
4	120	75	46	184	864	18	0/0	3	
5	101	70	49	181	870	26	1/0	16	
6	120	90	49	189	865	12	0/0	13	
7	149	119	50	186	862	16	0/0	10	
8	141	118	50	183	869	12	0/0	4	
9	116	110	52	185	870	17	1/0	8	2b(0113)+II+sid
10	104	121	50	177	869	7	0/0	14	
11	136	119	52	186	871	3	0/0	4	
12	111	107	52	184	871	11	0/0	5	1404
13	116	121	51	181	872	4	0/0	10	
14	116	116	50	179	868	3	0/0	5	
15	92	148	50	181	876	9	0/0	8	
16	91	120	50	179	873	8	0/0	1	(2300?)
17	99	100	49	179	874	4	0/0	17	ssc(0155)
18	113	116	50	185	883	12	0/0	14	
19	138	192	49	189	876	12	0/0	4	
20	149	193	48	188	882	30	2/0	5	1104 1b(2024)+II+ten
21	162	206	47	190	892	28	1/0	6	1248
22	197	261	48	195	891	29	0/0	9	
23	195	276	46	190	889	26	0/0	16	
24	168	228	47	186	893	1	0/0	14	
25	132	186	46	176	894	105	0/1	12	P2b(0838)+ten+p
26	111	113	44	164	888	7	0/0	14	
27	105	55	44	168	888	1	0/0	11	
28	75	58	43	168	886	7	0/0	12	
29	112	77	44	176	883	14	0/0	17	1502
30	125	138	44	180	885	10	0/0	11	
31	132	125	Probably, smoothed maximum between R=179 and 188 during 1989 August-October

Ri,Rim: 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 subtract at the mean solar constant.
 600 :600 Mhz solar flux from Humain station (Belgium).
 2800:2800 Mhz solar flux from Ottawa (origin:Ursigrams).
 COS :thousands of the cosmic ray counts (origin:Ursigrams).
 XFI :X-flares index from the S.I.D.C. (origin:Ursigrams).
 XI :X-flares index from the Ursigrams (M-flares/X-flares).
 Ak :planetary geomagnetic index from Wingst (Germany from Ursigrams).
 SEA :sudden enhancements of atmospherics from Uccle & Humain (Belgium).
 Remarks: sid(sudden ionospheric disturbance); ssc(sudden storm commencement)
 mgst(magnetic storm); s-1-2-3-4(class of flares); II-IV radio-burst;
 ten(ten cm radio-burst); P(proton flare); p(proton event)

OBSERVATOIRE ROYAL DE BELGIQUE

DEPARTEMENT 4 RADIOASTRONOMIE ET PHYSIQUE SOLAIRE

NOMBRES RELATIFS DE WOLF JOURNALIERS

PROVISOIRES

PROVISIONAL

SUNSPOT RELATIVE NUMBERS

STATION UCCLE BELGIUM

JUILLET 1989

DATE	UT	NOMBRE DE GROUPES	NOMBRE DE TACHES	NOMBRE DE WOLF	NOMB REL ZONE CENTRALE	PPSI 10-6 WM-2	QUAL	CBS
3	0850	11	79	189	14	885.	4	AK
4	0740	9	77	167	51	843.	4	AK
5	0815	8	73	153	73	700.	3	ST
6	0730	10	90	190	132	807.	4	ST
7	0746	12	75	195	113	1278.	2	VI
8	0819	12	92	212	73	1361.	2	PC
10	1357	9	66	156	88	1280.	3	ST
11	0731	14	93	233	121	1346.	3	ST
12	0710	16	75	235	149	1378.	4	AK
13	0620	11	55	165	46	1004.	2	HB
14	0915	11	48	158	49	749.	2	HB
15	0800	7	34	104	31	1005.	2	HB
16	0858	8	26	106	50	1146.	2	HB
17	1007	8	66	146	88	966.	1	ST
18	0740	8	50	130	49	1241.	3	HB
19	0605	12	62	182	24	1654.	4	HB
20	0615	9	87	177	64	2075.	4	HB
21	0707	9	90	180	60	2317.	2	HB
22	0810	14	168	308	150	2746.	4	AK
23	0940	11	137	247	172	3041.	3	AK
24	0820	11	128	238	62	1950.	2	AK
26	1303	9	58	148	13	841.	4	ST
27	0731	8	48	128	25	517.	3	ST
28	0755	6	40	100	51	649.	2	AK
29	0945	7	31	101	35	619.	2	HB
31	0545	8	56	136	31	1288.	2	HB

LE SOLEIL A ETE OBSERVE 26 JOURS SUR 31 POSSIBLES
LE NOMBRE RELATIF DE WOLF MOYEN EST DE 172.5

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NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS

UCCLE FOR 1989				JULY					
K* = .912 (*)									
1	***	7	177	13	150	19	165	25	***
2	***	8	193	14	144	20	161	26	134
3	172	9	***	15	94	21	164	27	116
4	152	10	142	16	96	22	280	28	91
5	139	11	212	17	133	23	225	29	92
6	173	12	214	18	118	24	216	30	***
								31	123

THE SUN WAS OBSERVED 26 DAYS ON 31 POSSIBLE
 THE NORMALISED RELATIVE MONTHLY MEAN WOLF NUMBER IS 156

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

UCCLE OBSERVATIONAL MAJOR SUNSPOTS FOR 1989 JULY
 C AND F BRUNNER'S TYPE GROUPS

UCCLE NO	EAST LIMB		DATE AND TYPE			WEST LIMB	
	DATE	IST OBS	DATE	TYPE	LAST OBS	DATE	
15-1817	6 22.1	24 A	6 28.9		4 G	7 5.6	
2-1818	7 14.8	16 H	7 21.6		26 C	7 28.3	
5-1818	7 15.9	17 D	7 22.7		28 H	7 29.4	
27-1818	7 23.2	29 C	7 29.9		31 E	8 5.7	

PROBABLE RETURN OF MAJOR GROUPS FOR 1989				AUGUST	
UCCLE NO	NEW EAST LIMB	NEW CMP	NEW WEST LIMB	DATE	DATE
0	8 11.2	8 17.9	8 24.7		
5	8 12.1	8 18.8	8 25.6		
27	8 19.3	8 26.0	9 1.8		