



Sunspot Index Data Center

SUNSPOT BULLETIN

Data Analysis Service supported by the FAGS

1989

No 4

Provisional Sunspot-Numbers for APRIL 1989

Dependent on observations at LOCARNO Specola Solare complemented by an international network and determined at the Observatoire Royal de BELGIQUE. Thirty three coop. stations on MAY 1989, 1st, 0930UT

Day	R' i	Day	R' i
1	104	16	130
2	122	17	144
3	140	18	137
4	126	19	151
5	94	20	155
6	139	21	161
7	170	22	167
8	185	23	128
9	153	24	135
10	122	25	132
11	106	26	116
12	96	27	126
13	92	28	109
14	98	29	107
15	120	30	114

Mean = 129.3

Predictions of the smoothed monthly Sunspot Numbers

Classical Method	S.I.D.C. Adjusted values
1989 MAY 169(+42)	1989 NOV.180(+60)
JUN.175	DEC.178
JUL.181	1990 JAN.176
AUG.183	FEB.174
SEP.183	MAR.172
OCT.182(+45)	APR.170(+56)
	OCT.185(+46)

Forecasted values on the basis of the latest provisional monthly smoothed Sunspot Number: 1988 OCTOBER = 125.2 ±5%

Provisional smoothed values:

1988 NOV.127	1989 JAN.145	1989 MAR.157
DEC.138	FEB.151	APR.164

Brussels, 1989 MAY 1st

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

1989 APRIL R' = 129.3
im

Date	R' _i	PPSI	600	2800	COS	XFI	XI	Ak	SEA
31	91	38	72	170	860	12	0/0	36	
1	104	91	57	176	865	11	0/0	32	
2	122	130	50	184	862	4	2/0	24	1536U sb(1540),sf(2330)
3	140	160	52	191	869	19	1/0	2	ssc(1958)
4	126	181	53	186	869	5	0/0	37	
5	94	173	55	193	859	34	2/0	33	1153H
6	139	182	58	198	859	9	0/0	33	
7	170	140	56	200	862	15	0/0	19	
8	185	164	57	204	865	16	0/0	17	
9	153	115	57	191	868	115	1/1	19	4b(0042),ten,sid
10	122	67	56	179	876	4	1/0	12	
11	106	57	58	181	880	4	0/0	15	p(1435)+ssc,pca(1900)
12	96	30	56	180	856	3	0/0	7	
13	92	39	60	185	853	22	1/0	14	ssc(2215)
14	98	69	56	196	840	10	0/0	24	
15	120	113	56	198	844	11	0/0	22	
16	130	156	60	205	857	11	0/0	18	
17	144	183	60	205	858	9	0/0	13	
18	137	179	57	202	853	17	0/0	10	1715U
19	151	199	53	206	844	15	0/0	8	
20	155	194	51	189	855	34	1/0	12	
21	161	167	48	193	855	32	1/0	7	
22	167	149	51	185	855	32	1/0	9	1253U
23	128	144	46	193	865	16	2/0	14	
24	135	135	49	187	871	18	0/0	10	
25	132	115	43	177	859	14	0/0	32	
26	116	102	43	173	861	16	0/0	66	
27	126	119	42	172	868	15	0/0	46	
28	109	107	43	179	862	14	0/0	27	
29	107	86	43	184	863	9	
30	114	108	44	175	...	8	

The next SIDC-NEWS will contain the preprint (working version) of the tables "Classification and evolution of sunspot groups for 1980".

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

AVRIL 1989

DATE	UT	NOMBRE DE GROUPES	NOMBRE DE TACHES	NOMBRE DE WOLF	NOMB REL ZONE CENTRALE	PPSI 10-6 WM-2	QUAL	OBS
1	0926	7	38	108	15	826.	1	VI
2	0823	9	65	155	12	964.	2	AK
7	0725	13	108	238	104	1266.	2	VI
8	0953	13	99	229	110	1506.	2	HB
9	0832	11	73	183	64	1016.	2	HB
11	0640	6	33	93	16	718.	3	AK
12	1325	7	33	103	25	157.	1	ST
13	0735	8	34	114	25	414.	1	ST
15	0725	8	83	163	61	1033.	3	ST
16	0820	9	102	192	63	1555.	4	AK
17	1450	10	99	199	120	1676.	2	AK
18	0939	7	112	182	107	1490.	2	ST
19	0925	7	134	204	73	2024.	2	ST
21	1414	13	85	215	106	1861.	2	PC
22	1000	12	64	184	67	1601.	2	CG
23	0930	9	34	124	42	1426.	1	CG
24	0749	8	95	175	73	1709.	1	ST
27	0702	5	95	145	37	1554.	2	ST
28	0658	6	52	112	0	1420.	3	VI
29	0730	6	78	138	13	968.	2	CG
30	0825	8	96	176	85	1107.	2	CG

LE SOLEIL A ETE OBSERVE 21 JOURS SUR 30 POSSIBLES
LE NOMBRE RELATIF DE WOLF MOYEN EST DE 163.4

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NORMALISED UCCLE OBSERVATIONAL SUNSPOT NUMBERS

U* = K*U FOR 1989 APRIL

K* = .961 (*)

1	103	7	228	13	109	19	196	25	***
2	149	8	220	14	***	20	***	26	***
3	***	9	175	15	156	21	206	27	139
4	***	10	***	16	184	22	176	28	107
5	***	11	89	17	191	23	119	29	132
6	***	12	99	18	174	24	168	30	169
								31	***

THE SUN WAS OBSERVED 21 DAYS ON 30 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 APRIL
E AND F BRUNNER'S TYPE GROUPS

UCCLE NO	EAST LIMB		DATE AND TYPE			WEST LIMB				
	DATE	IST OBS	DATE	AND TYPE	LAST OBS	DATE				
2-1814	3	28.6	29	H	4	4.3	9	G	4	11.1
20-1814	4	9.5	12	B	4	16.3	22	H	4	23.0
28-1814	4	15.3	16	D	4	22.1	24	A	4	28.8
39-1814	4	18.9	21	C	4	25.6	30	D	5	2.4
2-1815	4	24.7	27	E	5	1.5	30	E	5	8.2

PROBABLE RETURN OF MAJOR GROUPS FOR 1989 MAY

NO	NEW EAST LIMB	NEW CMP	NEW WEST LIMB
20	5 6.8	5 13.6	5 20.3
39	5 16.1	5 22.9	5 29.6