

yyyy	m	d	start	peak	end	class	location	CME time	CME speed	CME AW	CME MPA	proton flux	IP III	rise/decline	GS	AR type	AR	Comments
1996	7	9	09:05	09:11	09:15	X2.6	S10W30	12:28	452	86	257	0.002427	0	NA	no	bgd	7978	CME data gap
1997	11	4	05:52	05:58	06:02	X2.1	S14W33	6:10	785	360	243	2.33843	1	decline	-110	bgd	8100	
1997	11	6	11:49	11:55	12:01	X9.4	S18W63	12:42	1556	360	262	3.182283	1	decline	no	bgd	8100	
1997	11	27	12:59	13:17	13:20	X2.6	N17E63	13:57	unc	unc	unc	no	1	decline	no	b	8113	unc CME
1998	4	23	05:35	05:55	06:23	X1.2	S15E90v	5:55	1691	360	116	no	1	rise	no	u	u	
1998	4	27	08:55	09:20	09:38	X1.0	S16E50	8:56	1385	360	79	no	1	rise	no	b	8210	
1998	5	2	13:31	13:42	13:51	X1.1	S15W15	14:06	938	360	331	1.637247	1	rise	-205	gd	8210	
1998	5	6	07:58	08:09	08:20	X2.7	S11W65	8:29	1099	190	294	7.741446	1	rise	no	b	8210	double CME
1998	8	17	21:10	21:20	21:30	X1.2	nr	dg	dg	dg	dg	dg	1	decline	no	nr	nr	
1998	8	18	08:14	08:24	08:32	X2.8	N33E68	dg	dg	dg	dg	dg	1	decline	no	nr	8307	
1998	8	18	22:10	22:19	22:28	X4.9	N33E87	dg	dg	dg	dg	dg	1	decline	no	nr	8307	
1998	8	19	21:35	21:45	21:50	X3.9	nr	dg	dg	dg	dg	dg	1	decline	no	nr	8307	
1998	8	24	21:50	22:12	22:35	X1.0	nr	dg	dg	dg	dg	dg	1	rise	-155	bd	8307	
1998	11	22	06:30	06:42	06:49	X3.7	nr	dg	dg	dg	dg	0.13036	1	decline	no	b	8384	
1998	11	22	16:10	16:23	16:32	X2.5	nr	dg	dg	dg	dg	no	1	decline	no	b	8384	
1998	11	23	06:28	06:44	06:58	X2.2	S26W91	dg	dg	dg	dg	no	1	rise	no	b	8384	
1998	11	24	02:07	02:20	02:37	X1.0	S17W91v	2:30	1798	360	225	0.092788	1	rise	no	u	u	
1998	11	28	04:54	05:52	06:13	X3.3	N17E32	6:54	546	115	79	no	dg	NA	no	bg	8395	multiple CMEs
1999	8	2	21:18	21:25	21:38	X1.4	S18W48	22:26	292	157	264	no	1	decline	no	b	8647	multiple CMEs
1999	8	28	17:52	18:05	18:18	X1.1	S26W14	18:26	462	245	221	0.00223	1	rise	no	nr	8681	
1999	10	14	08:54	09:00	09:03	X1.8	N11E32	9:26	1250	360	61	0.002605	1	rise	no	bg	8731	
1999	11	27	12:05	12:12	12:16	X1.4	S15W68	12:54	235	68	256	no	0	NA	no	bgd	8771	multiple CMEs
2000	2	5	19:17	19:28	19:31	X1.2	N26E52	19:54	632	76	61	no	1	decline	no	b	8858	
2000	3	2	08:20	08:28	08:31	X1.1	S14W66	8:54	776	62	233	0.016845	1	rise	no	bd	8882	
2000	3	22	18:34	18:48	18:56	X1.1	N14W57	19:31	478	154	312	no	0	NA	no	bd	8910	
2000	3	24	07:41	07:52	07:59	X1.8	N16W82	dg	dg	dg	dg	no	1	decline	no	bg	8910	
2000	6	6	13:30	13:39	13:46	X1.1	N18E12	15:06	none	none	none	no	0	NA	no	bgd	9026	
2000	6	6	14:58	15:25	15:40	X2.3	N20E18	15:30	929	90	4	0.676665	1	rise	no	bgd	9026	
2000	6	7	15:34	15:53	16:06	X1.2	N23E03	16:30	842	360	309	no	1	decline	no	bgd	9026	
2000	6	18	01:52	01:59	02:03	X1.0	N23W85	2:10	629	132	318	0.089664	1	decline	no	b	9033	
2000	7	11	12:12	13:10	13:35	X1	N18E27	13:27	1078	360	63	0.014194	1	rise	no	bgd	9077	
2000	7	12	10:18	10:37	10:46	X1.9	N17E27	11:06	1124	144	49	no	0	NA	no	bgd	9077	
2000	7	14	10:03	10:24	10:43	X5.7	N22W07	10:54	1674	360	273	2.155864	1	rise	-300	bgd	9077	
2000	9	30	23:13	23:21	23:28	X1.2	N07W91	none	none	none	none	dg	0	NA	no	b	9169	
2000	11	24	04:55	05:02	05:08	X2.0	N20W05	5:30	1289	360	313	no	1	decline	no	b	9236	
2000	11	24	14:51	15:13	15:21	X2.3	N22W07	15:30	1245	360	324	2.478974	1	rise	no	b	9236	
2000	11	24	21:43	21:59	22:12	X1.8	N21W14	22:06	1005	360	313	no	1	rise	no	b	9236	
2000	11	25	18:33	18:44	18:55	X1.9	N20W23	19:32	671	360	348	no	1	rise	-119	bg	9236	
2000	11	26	16:34	16:48	16:56	X4.0	N18W38	17:06	980	360	274	no	1	rise	no	bg	9236	
2001	3	29	09:57	10:15	10:32	X1.7	N20W19	10:26	942	360	71	1.429155	1	rise	-387	bgd	9393	
2001	4	2	10:04	10:14	10:20	X1.4	N20W60	10:06	none	none	none	no	0	NA	no	bgd	9393	Narrow feature
2001	4	2	10:58	11:36	12:05	X1.1	nr	11:26	992	80	278	no	1	rise	no	nr	nr	
2001	4	2	21:32	21:51	22:03	X2.0	N20W90v	22:06	2505	244	293	5.130742	1	rise	no	bgd	9393	
2001	4	3	03:25	03:57	04:55	X1.2	S21E83	3:26	1613	292	120	no	1	rise	no	u	9415	
2001	4	6	19:10	19:21	19:31	X5.6	S21E31	19:30	1270	360	147	no	1	rise	no	bg	9415	
2001	4	10	05:06	05:26	05:42	X2.3	S23W09	5:30	2411	360	166	3.402029	1	rise	no	bgd	9415	
2001	4	12	09:39	10:28	10:49	X2.0	S19W43	10:31	1184	360	221	1.509364	1	rise	no	bgd	9415	
2001	4	15	13:19	13:50	13:55	X14.	S20W85	14:07	1199	167	268	8.379652	1	rise	-114	bg	9415	
2001	6	23	04:02	04:08	04:11	X1.2	N10E23	none	none	none	none	no	0	NA	no	bg	9511	
2001	8	25	16:23	16:45	17:04	X5.3	S17E34	16:50	1433	360	119	no	1	rise	no	bgd	9591	
2001	9	24	09:32	10:38	11:09	X2.6	S16E23	10:31	2402	360	142	4.759747	1	rise	-102	bgd	9632	

2001	10	19	00:47	01:05	01:13	X1.6	N16W18	1:27	558	360	284	0.236741	1	decline	no	bgd	9661	
2001	10	19	16:13	16:30	16:43	X1.6	N15W29	16:50	901	360	273	0.293104	1	decline	no	bgd	9661	
2001	10	22	17:44	17:59	18:14	X1.2	N18E16	18:26	618	106	126	no	1	rise	no	b	9672	
2001	10	25	14:42	15:02	15:28	X1.3	S16W21	15:26	1092	360	175	no	1	decline	-157	bgd	9672	
2001	11	4	16:03	16:20	16:57	X1.0	N06W18	16:35	1810	360	239	3.749604	1	rise	-292	bg	9684	
2001	11	25	09:45	09:51	09:54	X1.1	nr	none	none	none	none	no	0	NA	no	nr	nr	new confined
2001	12	11	07:58	08:08	08:14	X2.8	N16E41	8:30	804	142	32	0.022069	1	decline	no	bg	9733	
2001	12	13	14:20	14:30	14:35	X6.2	N16E09	14:54	864	360	37	no	1	decline	no	bgd	9733	
2001	12	28	20:02	20:45	21:32	X3.4	nr	20:30	2216	360	115	1.334129	1	rise	no	nr	nr	
2002	4	21	00:43	01:51	02:38	X1.5	S14W84	1:20	2393	360	282	5.239099	1	rise	no	bg	9906	
2002	5	20	15:21	15:27	15:31	X2.1	S21E65	15:50	553	69	143	0.008904	1	decline	no	b	9961	
2002	7	3	02:08	02:13	02:16	X1.5	N20W51	2:54	265	73	274	no	1	decline	no	bg	10017	
2002	7	15	19:59	20:08	20:14	X3.0	N19W01	20:30	1151	360	35	1.33947	1	rise	no	bgd	(10017?)10030?	
2002	7	18	07:24	07:44	07:49	X1.8	N19W30	8:06	1099	360	354	no	1	rise	no	bgd	10030	
2002	7	20	21:04	21:30	21:54	X3.3	nr	22:06	1941	360	91	no	1	rise	no	nr	nr	
2002	7	23	00:18	00:35	00:47	X4.8	S13E72	0:42	2285	360	87	no	1	rise	no	b	10039	
2002	8	3	18:59	19:07	19:11	X1.0	S16W76	19:32	1150	138	272	0.008813	1	rise	no	bg	10039	
2002	8	21	05:28	05:34	05:36	X1.0	S12W51	5:54	473	24	171	no	1	decline	no	bgd	(10039?)10069	
2002	8	24	00:49	01:12	01:31	X3.1	S02W81	1:27	1913	360	270	5.135461	1	rise	no	bgd	10069	
2002	8	30	12:47	13:29	13:35	X1.5	N15E74	13:54	254	57	76	no	0	NA	no	b	(10069?)10095	
2002	10	31	16:47	16:52	16:55	X1.2	N28W87	17:06	1061	43	96	no	0	NA	no	bg	10162?	FE?
2003	3	17	18:50	19:05	19:16	X1.5	S14W39	19:54	1020	96	264	0.026425	1	rise	no	bgd	10314	
2003	3	18	11:51	12:08	12:20	X1.5	S15W46	12:30	1601	209	266	0.02168	1	decline	no	bgd	10314	
2003	5	27	22:56	23:07	23:13	X1.3	S07W17	23:50	964	360	67	no	1	rise	no	b	10365	
2003	5	28	00:17	00:27	00:39	X3.6	S07W20	0:50	1366	360	292	0.552536	1	decline	-144	bgd	10365?	
2003	5	29	00:51	01:05	01:12	X1.2	S06W37	1:27	1237	360	260	0.971405	1	rise	no	bgd	10365	
2003	6	9	21:31	21:39	21:43	X1.7	N12W34	23:06	none	none	none	no	0	NA	no	nr	10375	later feature
2003	6	10	23:19	00:02	00:12	X1.3	N10W40	dg	dg	dg	dg	no	dg	NA	no	bgd	10375	
2003	6	11	20:01	20:14	20:27	X1.6	N14W57	dg	dg	dg	dg	no	dg	NA	no	bgd	10375	
2003	6	15	23:25	23:56	00:25	X1.3	S07E80	23:54	2053	360	84	no	1	rise	-141	nr	10386	
2003	10	19	16:29	16:50	17:04	X1.1	N08E58	17:08	472	150	49	no	0	NA	no	b	10484	
2003	10	23	08:19	08:35	08:49	X5.4	S21E88	8:54	1406	236	67	no	1	rise	no	a	10486	
2003	10	23	19:50	20:04	20:14	X1.1	S17E84	20:06	1136	95	111	no	0	NA	no	a	10486	
2003	10	26	05:57	06:54	07:33	X1.2	S15E44	6:54	1371	207	56	no	1	rise	no	bgd	10486	
2003	10	26	17:21	18:19	19:21	X1.2	N02W38	17:54	1537	171	235	5.596716	1	rise	no	bgd	(10486?)10484	
2003	10	28	09:51	11:10	11:24	X17.	S16E08	11:30	2459	360	15	5.057984	1	rise	-353	bgd	10486	
2003	10	29	20:37	20:49	21:01	X10.	S15W02	20:54	2029	360	190	3.716749	1	rise	-383	bgd	10486	
2003	11	2	17:03	17:25	17:39	X8.3	S14W56	17:30	2598	360	265	3.550538	1	rise	no	bgd	10486	
2003	11	3	01:09	01:30	01:45	X2.7	N10W83	1:59	827	65	324	no	1	rise	no	bgd	10488	
2003	11	3	09:43	09:55	10:19	X3.9	N08W77	10:06	1420	103	301	no	1	rise	no	bgd	10488	
2003	11	4	19:29	19:50	20:06	X28	S19W83	19:54	2657	360	260	3.572271	1	rise	no	bgd	10486	
2004	2	26	01:50	02:03	02:10	X1.1	N14W15	none	none	none	none	no	0	NA	no	bg	10564	
2004	7	15	01:30	01:41	01:48	X1.8	S10E54	2:06	584	113	123	no	0	NA	no	bgd	10649	
2004	7	15	18:15	18:24	18:28	X1.6	S11E45	none	none	none	none	no	0	NA	no	bgd	10649	
2004	7	16	01:43	02:06	02:12	X1.3	S11E41	2:54	none	none	none	no	0	NA	no	bgd	10649	unc CME
2004	7	16	10:32	10:41	10:46	X1.1	S10E36	none	none	none	none	no	0	NA	no	bgd	10649	
2004	7	16	13:49	13:55	14:01	X3.6	S11E35	14:54	none	none	none	no	0	NA	no	bgd	10649	unc CME
2004	7	17	07:51	07:57	07:59	X1.0	S11E24	none	none	none	none	no	0	NA	no	a	10652	
2004	8	13	18:07	18:12	18:15	X1.0	S13W24	19:36	412	96	205	no	0	NA	no	bgd	10656	
2004	8	18	17:29	17:40	17:54	X1.8	S14W90	17:54	602	120	250	0.006708	1	decline	no	bgd	10656	
2004	10	30	11:38	11:46	11:50	X1.2	N13W25	12:30	427	360	269	no	1	rise	no	b	10691	
2004	11	7	15:42	16:06	16:15	X2.0	N09W17	16:54	1759	360	0	no	1	decline	-263	bgd	10696	
2004	11	10	01:59	02:13	02:20	X2.5	N09W49	2:26	3387	360	302	5.11657	1	rise	no	bgd	10696	

2005	1	1	00:01	00:31	00:39	X1.7	N06E34	0:54	832	360	90	0.001024	1	decline	no	bgd	10715	
2005	1	15	00:22	00:43	01:02	X1.2	N14E08	none	none	none	none	no	0	NA	no	bd	10720	new confined
2005	1	15	22:25	23:02	23:31	X2.6	N14W08	23:07	2861	360	323	no	1	rise	-103	bd	10720	
2005	1	17	06:59	09:52	10:07	X3.8	N15W25	9:30	2094	360	334	3.195847	1	rise	no	bd	10720	
2005	1	19	08:03	08:22	08:40	X1.3	N15W51	8:30	2020	360	320	no	1	rise	no	bg	10720	
2005	1	20	06:36	07:01	07:26	X7.1	N14W61	6:54	882	360	288	3.275074	1	rise	no	bd	10720	
2005	7	14	10:16	10:55	11:29	X1.2	N11W90	10:54	2115	360	296	no	1	rise	no	bgd	10786	
2005	7	30	06:17	06:35	07:01	X1.3	N12E61	6:50	1968	360	50	no	1	rise	no	bg	10792	
2005	9	7	17:17	17:40	18:03	X17.	S11E77	dg	dg	dg	dg	2.50603	1	rise	no	nr	10808	
2005	9	8	20:52	21:06	21:17	X5.4	S11E74	dg	dg	dg	dg	no	0	NA	no	nr	10808	
2005	9	9	02:43	03:00	03:07	X1.1	S12E68	dg	dg	dg	dg	no	dg	NA	no	nr	10808	
2005	9	9	09:42	09:59	10:08	X3.6	S11E66	dg	dg	dg	dg	no	0	NA	no	nr	10808	
2005	9	9	19:13	20:04	20:36	X6.2	S10E58	19:48	2257	360	115	no	1	rise	no	nr	10808	
2005	9	10	16:34	16:43	16:51	X1.1	S11E47	none	none	none	none	no	0	NA	no	bgd	10808	new confined
2005	9	10	21:30	22:11	22:43	X2.1	S13E47	21:52	1893	360	120	no	1	rise	no	bgd	10808	
2005	9	13	19:19	19:27	20:57	X1.5	S09E10	20:00	1866	360	149	3.646912	1	rise	no	nr	10808	
2005	9	13	23:15	23:22	23:30	X1.7	S10E04	23:36	999	46	158	no	0	NA	no	nr	10808	
2005	9	15	08:30	08:38	08:46	X1.1	S12W14	none	none	none	none	no	0	NA	no	nr	10808	
2006	12	5	10:18	10:35	10:45	X9.0	S07E68	dg	dg	dg	dg	1.239795	1	rise	no	nr	10930	
2006	12	6	18:29	18:47	19:00	X6.5	S06E63	dg	dg	dg	dg	no	1	decline	no	b	10930	
2006	12	13	02:14	02:40	02:57	X3.4	S06W23	2:54	1774	360	193	5.2525	1	rise	-162	bgd	10930	
2006	12	14	21:07	22:15	22:26	X1.5	S06W46	22:30	1042	360	248	0.578472	1	decline	no	bgd	10930	
2011	2	15	01:44	01:56	02:06	X2.2	S20W12	2:24	669	360	189	0.084493	1	decline	no	bg	11158?	
2011	3	9	23:13	23:23	23:29	X1.5	N08W09	23:06	none	none	none	no	0	NA	no	nr	11158	
2011	8	9	07:48	08:05	08:08	X6.9	N17W69	8:12	1610	360	279	1.398667	1	decline	no	nr	11166	
2011	9	6	22:12	22:20	22:24	X2.1	N14W18	23:06	575	360	300	0.257203	1	decline	no	nr	11263	
2011	9	7	22:32	22:38	22:44	X1.8	N14W28	23:06	792	167	269	no	1	decline	no	bgd	11283	
2011	9	22	10:29	11:01	11:44	X1.4	N09E89	10:48	1905	360	72	no	1	rise	no	nr	11283	
2011	9	24	09:21	09:40	09:48	X1.9	N12E60	9:48	1936	145	90	no	1	rise	no	bg	11302	
2011	11	3	20:16	20:27	20:32	X1.9	N22E63	23:30	991	360	90	no	1	rise	no	nr	11302	
2012	1	27	17:37	18:37	18:56	X1.7	N27W71	18:28	2508	360	296	5.567828	1	rise	no	b	11402?	
2012	3	5	02:30	04:09	04:43	X1.1	N17E52	4:00	1531	360	61	no	1	rise	no	nr	11402	
2012	3	7	00:02	00:24	00:40	X5.4	N17E27	0:24	2684	360	57	no	1	decline	-145	bgd	11429	
2012	3	7	01:05	01:14	01:23	X1.3	N22E12	1:30	1825	360	82	3.271947	u	NA	no	bgd	11429	
2012	7	6	23:01	23:08	23:14	X1.1	S13W59	23:24	1828	360	233	0.364402	1	decline	no	nr	11430	
2012	7	12	15:37	16:49	17:30	X1.4	S15W01	16:48	885	360	158	2.506588	1	rise	-139	nr	11515	
2012	10	23	03:13	03:17	03:21	X1.8	S13W58	none	none	none	none	no	0	NA	no	nr	11520	new confined
2013	5	13	01:53	02:17	02:32	X1.7	N11E89	2:00	1270	360	64	no	1	rise	no	nr	11598	
2013	5	13	15:48	16:05	16:16	X2.8	N11E85	16:07	1850	360	63	0.040721	1	rise	no	nr	11748	
2013	5	14	00:00	01:11	01:20	X3.2	N08E77	1:26	2625	360	89	no	1	decline	no	b	11748	
2013	5	15	01:25	01:48	01:58	X1.2	N12E64	1:48	1366	360	93	0.924555	1	decline	no	bgd	11748	
2013	10	25	07:53	08:01	08:09	X1.7	S08E73	8:12	587	360	109	0.030916	1	decline	no	nr	11748	
2013	10	25	14:51	15:03	15:12	X2.1	S06E69	5:12	1081	360	68	no	1	decline	no	b	11882	
2013	10	28	01:41	02:03	02:12	X1.0	N04W66	2:24	695	360	296	no	1	rise	no	bgd	11882	
2013	10	29	21:42	21:54	22:01	X2.3	N05W89	22:05	1001	360	249	no	0	NA	no	bgd	11875	
2013	11	5	22:07	22:12	22:15	X3.3	S12E46	22:36	562	195	141	no	1	decline	no	nr	11875	
2013	11	8	04:20	04:26	04:29	X1.1	S14E15	unc	none	none	none	no	0	NA	no	bgd	11890	previous CME
2013	11	10	05:08	05:14	05:18	X1.1	S14W13	5:36	682	262	198	no	1	decline	no	bgd	11890	
2013	11	19	10:14	10:26	10:34	X1.0	S70W14	10:36	740	360	222	no	1	decline	no	nr	11890	
2014	1	7	18:04	18:32	18:58	X1.2	S15W11	18:24	1830	360	231	5.547891	1	rise	no	nr	11893	
2014	2	25	00:39	00:49	01:03	X4.9	S12E82	1:26	2147	360	73	0.762484	1	decline	no	nr	11944	
2014	3	29	17:35	17:48	17:54	X1.0	N11W32	18:12	528	360	325	0.15757	1	decline	no	bd	(11990?)12017	
2014	4	25	00:17	00:27	00:38	X1.3	S14W89	0:48	456	296	269	0.004321	1	rise	no	nr	12035	

2014	6	10	11:36	11:42	11:44	X2.2	S15E80	11:48	925	111	102	no	1	decline	no	nr	(12035?)12087	
2014	6	10	12:36	12:52	13:03	X1.5	S17E82	13:30	1469	360	156	no	1	rise	no	nr	12087	
2014	6	11	08:59	09:06	09:10	X1.0	S18E65	9:24	829	30	125	no	1	decline	no	bd	12087	
2014	9	10	17:21	17:45	18:20	X1.6	N14E02	18:00	1267	360	175	0.910235	1	rise	no	bgd	12158	
2014	10	19	04:17	05:03	05:48	X1.1	S14E64	unc	unc	unc	unc	no	0	NA	no	bg	12192	weak features
2014	10	22	14:02	14:28	14:50	X1.6	S14E13	unc	none	none	none	no	0	NA	no	bgd	12192	late CME?
2014	10	24	21:07	21:41	22:13	X3.1	S16W21	21:48	none	none	none	no	0	NA	no	bgd	12192	weak features
2014	10	25	16:55	17:08	18:11	X1.0	S16W31	17:36	none	none	none	no	0	NA	no	bgd	12192	weak features
2014	10	26	10:04	10:56	11:18	X2.0	S18W40	none	none	none	none	no	0	NA	no	bgd	12192	
2014	10	27	14:12	14:47	15:09	X2.0	S17W52	unc	none	none	none	no	0	NA	no	bgd	12192	
2014	11	7	16:53	17:26	17:34	X1.6	N14E36	18:09	795	293	75	no	1	decline	no	bgd	12205	
2014	12	20	00:11	00:28	00:55	X1.8	S21W24	1:26	830	257	197	no	1	decline	no	bgd	(12205?)12242	
2015	3	11	16:11	16:22	16:29	X2.1	S17E21	17:00	240	74	81	no	1	decline	no	bgd	12297	
2015	5	5	22:05	22:11	22:15	X2.7	N15E79	22:24	715	360	41	no	1	decline	no	nr	12339	
2017	9	6	08:57	09:10	09:17	X2.2	S07W33	9:48	391	80	246	no	1	decline	no	bgd	(12339?)12673	unc features
2017	9	6	11:53	12:02	12:10	X9.3	S08W33	12:24	1571	360	201	2.929859	1	decline	-124	bgd	12673	
2017	9	7	14:20	14:36	14:55	X1.3	S11W49	15:12	433	58	246	no	1	decline	no	bgd	12673	
2017	9	10	15:35	16:06	16:31	X8.2	S08W88	16:00	3163	360	262	no	dg	NA	no	bgd	12673	

Notes:

DH_type_III: 0 - No; 1 - Yes

dg: data gap

NA: no prominent signature to analyse

nr: not reported

unc: uncertain

Radio_bursts: 2 - type II, 3 - type III, 4 - type IV

Sunspot_type: a - alpha; b - beta; g - gamma; d - delta etc.