Readme: Geomagnetic Indices Bulletin

Geomagnetic Indices Bulletin is a prompt monthly information publication that is distributed within two weeks after final geomagnetic indices are received for the observational month. For each month this 2-page circular tabulates the three hour Kp indices, daily Ap index, Cp index, An,As,Am index and provisional aa indices.

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GEOMAGNETIC INDICES BULLETIN

JANUARY 2014

THE GEOMAGNETIC FIELD. The geomagnetic field measured at any point on the Earth's surface at any time is a combination of the MAIN field internal to the planet, of fields arising from electrical currents flowing in the ionized upper atmosphere, and of fields induced by currents flowing within the Earth's crust. The main field component varies slowly in time and can be grossly described as that of a bar magnet with north and south poles deep inside the Earth and magnetic field lines that extend out into space.

The main field creates a cavity in interplanetary space called the magnetosphere, where the Earth's magnetic field dominates the magnetic field of the solar wind. The magnetosphere is shaped somewhat like a comet in response to the dynamic pressure of the solar wind. It is compressed on the side toward the sun to about 10 Earth radii and is extended tail-like on the side away from the sun to more than 100 Earth radii. The magnetosphere deflects the flow of most solar wind particles around the Earth, while the geomagnetic field lines guide charged particle motion within the magnetosphere.

The differential flow of ions and electrons inside the magnetosphere and in the ionosphere form current systems, which cause variations in the intensity of the Earth's magnetic field. These EXTERNAL currents in the ionized upper atmosphere and magnetosphere vary on a much shorter time scale than the INTERNAL main field and may create magnetic fields as large as 10% of the main field.

Daily regular magnetic field variations arise from current systems caused by regular solar radiation changes. Other irregular current systems produce magnetic field changes caused by the interaction of the solar wind with the magnetosphere, by the magnetosphere itself, by the interactions between the magnetosphere and ionosphere, and by the ionosphere itself. Magnetic activity indices, including those below, are designed to describe variations in the geomagnetic field caused by these irregular current systems.

MONTHLY SUMMARY OF GEOMAGNETIC ACTIVITY FOR JANUARY 2014

Day Cal	Day Year	Day Bart	Rank Q/D	Kp 1	Kp 2	Kp 3	Kp 4	Kp 5	Kp 6	Kp 7	Kp 8	Kp Sum	Ap	Cp	Sc* (UT)	An	As	Am	N	S	M1	M2
1	1	18	D2	1-	1+	2	2	4-	3	3	3	19-	11	0.6		23	24	23	27	30	15	42
2	2	19	D1	3+	4+	3+	2+	3-	3+	4+	2+	26	18	1.0		29	28	29	38	26	31	33
3	3	20	D5	2	2-	2	2	3	3-	3-	1	17	9	0.5		16	16	16	18	17	15	20
4	4	21		1-	1-	1	2	2+	2	2	1+	12	6	0.3		10	16	13	12	18	14	16
5	5	22	Q7	0+	1	1+	1-	1	1-	0	0+	5+	3	0.1		4	9	7	5	9	9	5 C C
6	6	23	Q8	0	0+	1	0+	1-	1-	1+	1+	6-	3	0.1		4	7	6	6	7	4	9 C C
7	7	24		0+	2-	0	1-	1-	3+	2+	3-	12-	7	0.3	1514	12	14	13	13	13	7	20 K K
8	8	25		3	3+	1	1	1-	1-	1	1+	12	7	0.4		13	12	16				9 K
9	9	26		3	3-	1+	2-	1	1	3-	2-	15	8	0.4	2010	14	18	16	16	19	16	19 K
10	10	27		2	2-	1-	1-	1	2-	1-	0+	9-	4	0.1		7	12	9	10	9	9	10 C K
11	11	1		0	0	0	0+	1-	1-	2+	2-	6-	3	0.1		6	10	8	8	10	4	14 C C
12	12	2		1	1-	1	1	1+	1	3-	3+	12	7	0.3		12	17	15	18	17	8	26
13	13	3		2	3	2	1	1	1-	0	1	11-	6	0.2		9	17	13	10	15	19	7 K
14	14	4	D3	3+	3-	2-	1	3+	2+	1+	3-	18+	10	0.6		18	23	21	19	20	19	20 K
15	15	5	Q10	2-	1-	1	1-	0+	1	0+	0+	6	3	0.1		5	7	6	6	5	7	5 C K
16	16	6	Q5	0	0	1	1-	0+	0+	0	0+	3-	2	0.0		2	4	3	4	4	4	4 C C
17	17	7	Q6	0	0	0+	0	1	1-	0+	2-	4	2	0.0		4	6	5	6	5	4	8 C C
18	18	8	Q3	1-	0	0	0	0+	0	1	0	2	1	0.0		2	3	2	4	3	3	4 C C
19	19	9	Q1	0	0	0	0	0+	0+	0	0	1-	1	0.0		0	3	2	2	2	2	2 C C
20	20	10	Q4	0	0	1-	0+	0+	1-	1-	0+	3	2	0.0		4	6	5	5	7	4	8 C C
21	21	11		3-	1	2-	2-	2+	3-	2	2-	16-	8	0.4		14	19	16	15	21	14	22
22	22	12	D4	2	2	3-	3+	2+	2-	2-	3-	18+	10	0.5		17	18	17	20	20	19	21
23	23	13		2+	2-	2	1+	1-	1+	2	2-	13	6	0.3		9	13	11	11	11	12	10 C K
24	24	14		3	2-	0	0+	1-	0+	0	0+	6+	4	0.1		4	8	6	7	7	10	4 C C
25	25	15		2+	2-	1	0+	1	2-	2-	3	13-	6	0.3		12	11	11	18	10	10	18 K
26	26	16		3-	3-	2-	1	0	2-	1+	1+	12+	6	0.3		11	10	10	16	9	16	10 C K
27	27	17	Q9	1-	1-	0+	0+	1-	1	1-	2-	6	3	0.1		5	7	6	9	8	5	12 C C
28	28	18		0	0	1-	1-	1-	2-	2	2+	8	4	0.1		7	9	8	13	13	6	20 K K
29	29	19		2	2	2	2-	1	2	1+	1+	13+	6	0.3		11	15	13	11	17	15	13
30	30	20		2	2+	1-	0+	0	0	0+	0	6-	3	0.1		4	5	5	6	5	9	3 C C
31	31	21	Q2	0	0	0	1-	0+	0	0	0+	1+	1	0.0		1	4	2	3	5	5	3 C C
Mean													5	0.25		9	12	11	12	12		12

*preliminary

Column headings defined on back side.