Firstly, the farther the eastern position relative to CM occupied by the eruptive area at the moment of the intense chromospheric flare after which polar-cap absorption had begun, the more its duration is.

In Fig. 3 a middle position of the eruptive area relative to CM at the starting time of absorption for the duration periods more than 8 days; 8; 7; 6; 5; 4 and 3 days is given.

The observed dependence reflects the fact that the passage of the eruptive area along the visual Sun's disk offers great potential possibilities for a long-duration absorption period, which is a consequence of superposition of a series of isolated bursts of activity of this area.

Secondly, the position of the eruptive area on the visual Sun's disk determines the character of connection of the absorption periods with great magnetic storms. It has been found that latter will follow over a day or two after the beginning of polar-cap absorption only with the position of the eruptive area near CM at the moment of an intense chromospheric flare. In the rest cases the farther eastern position occupied by the eruptive area relative to CM at the moment of the polar-cap absorption starting time is, the more delay is (Fig. 4).

The obtained statistical character of connection with magnetic storms evidences of primarily "direct" method of travelling of solar cosmic rays of low energy, responsible for polar cap absorption.

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INTERNATIONAL CONFERENCE ON COSMIC RAYS AND THE EARTH STORM Part I

I-2-17. Anomalous Absorption in High Latitudes of the Southern Hemisphere*

G. V. BOOKIN**

In a number of papers a chromospheric flare effect on ionospheric absorption of the II and III types was investigated by the observations of high latitude stations of the northern hemisphere [1, 2].

This paper gives the data on ionospheric effects of 16 solar flares from July 1957 to September 1958 by the materials of ionosphere vertical sounding at 24 stations of the Southern hemisphere, situated from 40° to 90° of geomagnetic latitudes. All the materials on the southern stations are obtained from the WCD B2. The data on anomalous absorption in the northern polar region and magnetic disturbances given for comparison are taken from paper (2). The data on chromospheric flares, radioemission of the Sun and absorption in the northern and southern hemisphere are presented in table 1. ϕ_0 means low latitudinal limit of the region of absorption, VIII the lowest range of the velocity of energetic particles that have caused the III type absorption. From the table considered one can draw the following conclusions:

1. Dellinger effect was found only in two cases. Perhaps the usage of hourly value graphs, presented by a number of stations in the W.C.D. did not allow to find out this shorttime effect in the other cases.

2. The moment of the III type absorption commencement for the northern and southern hemisphere differs essentially.

3. In the northern hemisphere the lowest boundary of anomalous absorption is 58.5°N, in the southern one—54°S. For one and the some flare the distribution (in geomagnetic coordinates) of anomalous III type absorption has an assymetry vividly expressed for the northern and southern hemispheres.

4. The duration of blackouts, caused by one and the same flare, may be essentially different in the northern hemispheres.

* This paper was by N. V. Pushkov.
** U.S.S.R.

Table I.

Numbers	Solar flares: date	GMT	intensity	Outbursts: type IV GMT	Dellinger effect: N	S	III type anomal.absorption: the commencement GMT N	S	minimum latitude N	S	duration hours / N	S	Sc magnetic storms: date	GMT	Velocities V III
	1957														
1.	3 VII	08h 00m	3	08h 49m	+	-	09h	09h	60,6°	67,0°	66	56	5	00h 43m	$4,2 \cdot 10^4$
2.	24 VII	18 02	3	18 02	+	-	21	24	-	66,0	6	21	27	19 59	0,9
3.	28 VIII	09 13	3+	09 30	+	-	14	13	63,0	66,0	166	34	29	19 20	1,1
4.	2 IX	13 02	2	13 10	+	-	-	17	-	54,0		72	4	13 00	1,0
5.	12 IX	05 00	2	05 15	+	-	04	08	63,0	54,0	8	40	13	00 46	1,4
6.	26 IX	19 07	3	19 49	+	-	21	21	63,0	57,0	24	66	29	00 15	2,1
7.	20 X	16 37	3	16 46	+	-	19	17	59,8	-	35	47	21	21 20	8,0
	1958														
8.	9 II	21 08	2	21 09	+	+	06*	05*	59,8	67,0	18	48	11	01 26	0,5
9.	23 III	09 47	3+	-	-	-	-	-	-	66,0	139	72	25	15 40	-
10.	6 VI	04 36	3	04 34	-	-	-	-	-	-	5	35	7	00 45	-
11.	7 VII	00 39	3+	00 27	+	-	03	03h 15m	58,5	57,0	104	48	8	07 48	1,4
12.	29 VII	03 32	3+	03 04	+	+	04	-	63,0	-	4	9	31	15 32	-
13.	16 VIII	04 32	3+	04 38	+	-	06	07	59,8	54,0	50	50	17	06 22	1,7
14.	22 VIII	14 17	3	14 40	+	-	14	16 45	-	57,0	165	72	24	01 40	4,7
15.	26 VIII	00 05	3	00 19	+	-	01	02	-	57,0		72	27	02 46	2,1
16.	22 IX	-	-	-	+	-	16	-	63,0	66,0	42	87	25	04 08	-

Note : *- February, 10.

Literature

1) T. Obayashi and Y. Hakura: Rept. Ionosphere and Space Res. Japan, 1960, 14, No. 1, 1-40.
2) A. S. Besprozvannaya and V. M. Driatzii: "Anomalous absorption in the polar region by the observations with the method of ionosphere vertical sounding" symposium "Ionosphere Investigation" Nr. 5, Ac. of S. USSR, 1960.

Discussion

Leonard, R. S.: A study of PCA's, made at the Geophysical Institute, at conjugate stations, namely Campbell Is. ionosound and the Alaskan network of riometers and ionosounds, shows a good correlation of occurrence and equatoward extent for stations paired by the Vestine magnetic field analysis.

Pushkov, N. V.: The beginning and durations of PCA's may sometimes be different. There are cases when PCA's are in one hemisphere and absent in another one.

Paghis, I.: You mentioned generally that PCA's could be essentially different in the two polar caps. The paper by Jelly, using f_{min} at Arctic and Antarctic stations, found that the absorption differences depended on conditions of solar illumination. There was no essential difference between PCA's at Arctic and Antarctic. Do your results agree with this conclusion ?

Pushkov, N. V.: There are some cases in equinoxes when the PCA's noted in one hemisphere and absent in other.

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I-2-P1. Introductory Remarks and the Summary of the Ordinary Sessions*

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