

programming the electronic computations. We acknowledge the help of Dr. P. J. Eccles in carrying out portions of the data analysis.

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INTERNATIONAL CONFERENCE ON COSMIC RAYS AND THE EARTH STORM Part III

III-2-6. Comments by Chairman

K. GREISEN

*Laboratory for Nuclear Study, Cornell University,
Ithaca, N.Y., U.S.A.*

The sessions on "Origin" will contain discussion of interpretation of the apparent asymmetry reported today, but this is the last meeting for discussing the experimental question of whether or not the asymmetry is real. First, I wish to remind ourselves of the danger of imagining configuration in small numbers of events. It is inevitable that *some* form of asymmetry would appear, just as one always can find some strange forms in clouds or rocks. There are so many possibilities for these shapes, that the probability to observe an apparent strange configuration is not very small.

On the other hand, I wish to emphasize the coherence between the Japanese results, those of MIT and those of Cornell. The asymmetries are not identical in complete detail, but this is too much to expect. They all have a common character—an excess of events in northern declinations at right ascensions of 0–180° and a deficit from 180° to 270°. It is even possible that the apparently

different selections of events are fundamentally alike. It may be that events initiated by heavy primaries are selected in the Japanese case from a detailed property of showers (ratio of n_μ to N), dependent on Z , and in the American experiments by selecting very high energies (since protons of such energy may escape from the Galaxy). We are obliged to investigate this point further, and will look forward to much more information on this asymmetry two years from now—even though with improved statistics it may all disappear.

I also wish to remind ourselves that in the Mexico meeting the largest showers reported were a few times 10^8 particle; in Moscow a few times 10^9 , and today a few times 10^{10} . I predict that at our next meeting we will hear of showers in the range 10^{11} or even 10^{12} , by use of new techniques of detection. The theorists are warned to leave open a mechanism for admitting these particles in the universe.