

I-4-P2. Characteristics of Aurora*

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Discussion

Hines, C. O.: This summary is indeed of very great value to the theorists. In particular, I would like to draw one sweeping conclusion from the pattern of auroral forms which has been presented (from T. N. Davis' summary), and enquire whether this conclusion is reasonable. Would it be proper to conclude that pre-midnight quiet arcs remain relatively quiet, moving of the westward as the observer rotates with the earth underneath, and do not themselves break up in the course of time to produce the irregular post-midnight conditions. That, instead, the apparent time-variation suggested by the word "break-up" is rather to be envisaged as a result of the observers' rotation into a region where the irregular characteristics were already in existence? It is the continuity of arcs from high to low latitudes just before midnight that particularly impresses me in drawing this conclusion.

Elvey, C. T.: It is probably a combination—break-up tends to occur near midnight. It is variable, however, and may differ from magnetic midnight by ± 2 hours or more. During sunspot minimum when displays are on a smaller scale, there is greater regularity. One should probably determine events on a "display-time" basis or a normalized time or phase form say "break-up." See T. N. Davis for additional remarks.

Davis, T. N.: The sequence of auroral forms observed at a given stations appears to be governed mainly by the position of the station beneath the fixed auroral pattern but temporal effects seem to exist as well. In particular the onset of the breakup phase is often more rapid than would be expected from a fixed excitation pattern alone.

I-4-P3. Investigations of Auroral Planetary Distribution*

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The basic materials of the investigations given below are ascafilms of 35 Soviet stations and ascaplots of 77 stations (55 of them in the Northern hemisphere, and 24 in the Southern) obtained during the IGY.

To determine the location of the zone with the maximum frequency of aurora appearance

in the zenith, two parameters were used, which are determined by ascaplots for each station. The ascaplots are the diagrams defining for half-hour intervals the distribution of aurorae about the sky, and their brightness in the zenith¹⁾.

1) The ratio of the number of half-hour intervals with aurorae in the zenith, to the total number of intervals of the investiga-

* Both manuscript and preprint have not been received.