

storms.

There remain however, some fundamental problems not yet solved as follows, namely, what is the real cause of electric field which contributes to the production of the overhead electric current? Furthermore we know that H_{α} , H_{β} ... lines of atomic hydrogen is observed in the auroral spectra. This means that protons are also coming. Then, what is the fundamental contribution of protons to the auroral zone disturbance? This is really also an important question. These problems have to be studied in more detail in order to get a full understanding of the whole mechanism of the polar earth storms.

References

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Discussion

Maeda, K.: Prof. Ellis of Australia found a close coincidence of occurrences of VLF noise, bay disturbance and red aurora. I want to have some idea on the mutual relation between the two findings made by you and Prof. Ellis. Didn't you make any study on a possible relation between ionization, bay disturbance and red aurora instead of green one?

Oguti, T.: No, not yet. We are intending to study them now.

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I-2-8. Polar Blackouts During the International Geophysical Year (A 30 Minute Sound Motion Picture)

Vaughn AGY

National Bureau of Standards, Boulder, Colorado, U.S.A.

Discussion

Paghis, I.: (a) Would you please amplify what is meant by the statement "PCA event is not necessarily the first stage in the disturbance"?

(b) Are you suggesting that these "impact zone" may last for several hours?

Agy, V.: (a) In those cases we have examined, and in particular those shown in the film, the entire polar cap is covered by an absorbing region only after a period of development which may in some cases last for hours and in others only for minutes. Initially, small areas of absorption are evident (often at or near auroral latitudes) which we may interpret as impact zones for solar particles, and as time goes on these areas expand until (as the storage mechanism becomes active) the whole polar cap is covered.

(b) Hours or, in some cases, minutes.