

Quiet Time Changes of the Geomagnetic Local Time of the Contributing Station to the AL index

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We call the station contributing to the AL index the "AL station", and its geomagnetic local time the "AL geomagnetic local time" (ALMLT). The occurrence frequency distribution of ALMLT has a peak in the early morning during disturbed periods and another peak at noon during quiet. There are events that ALMLT changes from noon to the morning hours gradually. We call this change of the ALMLT "CALMLT" and describe it in this paper. We analyzed characteristics of CALMLT by statistical methods and obtained the occurrence frequency distributions depending on interplanetary magnetic field (IMF) and solar wind parameters. We conclude that there are four important factors which control ALMLT; the geomagnetic Sq current systems, IMF Bz and By components and AU current system in the evening sector.