

Recurrent disturbances of Cycle 23

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Geomagnetic disturbances with approximately 27-day period, a solar rotation period, are associated with high-speed solar wind from coronal holes. And this kind of disturbances recurs several solar rotation periods. We made auto correlation analysis of 27-day recurrence using Kp index. High correlation periods appear in declining phase and minimum phase of solar cycle. And low correlation periods appear in rising phase and maximum phase of solar cycle. These two periods change clearly. Auto correlation coefficients of declining and minimum phase of Cycle 23 are higher than those in the past cycles. It is known that high-energy electron flux at geosynchronous orbit increases associated with recurrent disturbances. However, enhancement of the flux became unclear since the end of 2008. We will report the result of analysis for this.