

MIS014-04

会場: 101

時間: 5月28日16:15-16:30

部分日食によって誘発された中緯度電離圏E領域イレギュラリティ

Nighttime-like Quasi Periodic echoes induced by a partial solar eclipse

山本 衛^{1*}, Thampi Smitha V.¹, Liu Huixin¹, 斎藤 享², 大塚 雄一³, Patra, Amit Kumar⁴

Mamoru Yamamoto^{1*}, Smitha V. Thampi¹, Huixin Liu¹, Susumu Saito², Yuichi Otsuka³,
Amit Kumar Patra⁴

¹京都大学生存圏研究所, ²電子航法研究所通信・航法・監視領域, ³名古屋大学太陽地球環境研究所, ⁴NARL, ISRO

¹RISH, Kyoto University, ²ENRI, ³STEL, Nagoya University, ⁴NARL, ISRO

The first observations of solar eclipse induced mid-latitude plasma irregularities using the middle and upper atmosphere radar (MU radar) at Shigaraki (34.85° N, 136.1° E, 25.0° N geomagnetic) are presented. The observations were done during the partial solar eclipse on 22 July, 2009. The observations show that the sudden withdrawal of solar radiation could deplete the background E-region densities, thereby unmasking the long-lived metallic ions within the strong and patchy Sporadic E-layers. As a result of this, Quasi-Periodic (QP) echoes were generated, which were detected by the MU radar. These echoes resemble the normal post-sunset QP echoes observed over mid-latitudes as revealed by the multi-channel interferometry imaging. This example shows that over mid-latitudes E-region plasma irregularities can be generated during a partial solar eclipse, revealing a hitherto unobserved aspect of mid-latitude ionospheric responses to eclipses.

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