VARIABILITY IN THE DEVELOPMENT OF PLASMA BUBBLES CONNECTED WITH GEOMAGNETIC DISTURBANCES

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The development of equatorial ionospheric irregularities into large-scale ionospheric plasma bubbles continues to be an active area for scientific investigations. In this paper we present simultaneous OI 630.0 nm emission all-sky imaging observations carried out at the Astrophysics National Laboratory – "LNA", Brazopolis (22.5^o S, 45.6^o W, altitude 1860 m) and ionospheric sounding observations carried out at Palmas (10.2^o S, 48.2^o W; located close to the magnetic equator) and Sao Jose dos Campos (23.2^o S, 45.9^o W; located under the southern crest of equatorial ionospheric anomaly, close to Brazopolis), Brazil, to study the day-to-day variability in the development of ionospheric plasma bubbles during both geomagnetically disturbed and quiet periods in September – October, 2002. Also, we present simultaneous complementary phase fluctuation (ROT) data obtained from the GPS (Global Position System) meridional chain operated by the Brazilian Institute of Geography and Statistic - "IBGE". On the three nights studied in the present investigation (one geomagnetically quiet and two geomagnetically disturbed) it has been observed that the geomagnetic disturbances, during this spring-equinox period, have a strong effect on the generation and development of ionospheric plasma bubbles.

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