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Plasma blobs observed by ground-based optical and satellite DMSP the F-region

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Discrete increase in plasma electron density by a factor of two or more was observed in the F region of the nocturnal ionosphere in the Brazilian sector, in the Manaus-AM region (MAN; 2,59°S; 60,22°O; dip. latitude 12,1°N; region near the magnetic equator). This increase was observed through the imaging photometer data and measured by the DMSP F15 satellite. Plasma density irregularities in the nighttime equatorial ionosphere were first observed by Booker and Wells in 1938, when they discovered spread-F in the ionogram of backscattered signals of ionosonde in Huancayo, Peru. The increase in plasma electron density was reported for the first time by Oya et al. in 1986, and they named this irregularity as plasma blobs. The plasma blobs that we observed on the MAN region were events that occurred independently, that is, without the presence of plasma bubbles. Cases of independent plasma blobs are rare events to observe, with more frequent occurrence with the simultaneous presence of plasma bubbles. In this work we present results of 4 nights of occurrence of independent plasma blobs in the period from October to November 2015, calculations of zonal and latitudinal drift of these blobs, besides measuring the north/ south and east / west dimensions that they reached, during all the time they were visible on the lens of the imaging photometer.

Publication:


42nd COSPAR Scientific Assembly. Held 14-22 July 2018, in Pasadena, California, USA, Abstract id. C1.1-115-18.

Pub Date:

July 2018

Bibcode:

2018cosp...42E.679C

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