

OBSERVATIONS OF DETACHED EQUATORIAL IONOSPHERIC PLASMA DEPLETIONS

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Near-simultaneous all-sky (180° field of view) observations of the OI 630.0 nm and OI 777.4 nm nightglow emissions are being carried out on a routine basis at “Laboratório Nacional de Astrofísica - LNA”, Brazópolis (22.5° S, 45.6° W; dip latitude 17.5° S; altitude 1860 m), Brazil, since September 2002. The all-sky imaging observations of the OI 630.0 nm and OI 777.4 nm emissions, which arise from the dissociative recombination of O₂⁺ ions and radiative recombination of O⁺ ions (mainly), respectively, are used to monitor the morphology and dynamics of equatorial F-region at the respective emission heights. In this paper we present and discuss the first observations showing detached equatorial F-region plasma depletions or bubbles. Three cases are presented from observations during the years 2002 and 2003. We suggest a possible mechanism for their generation.

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