



Jupiter's 2010 South Equatorial Belt Disturbance: Observations in the visual range and non-linear models.

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On November 9, 2010, a planetary-scale disturbance initiated in Jupiter's South Equatorial Belt (known by the acronym SEBD) with the outbreak of a very bright spot at a planetographic latitude of -17.1 deg South. We report on the evolution and motions of this disturbance along the next months from a single outburst place to a planetary-scale disturbance, based on high quality images obtained in the visual range submitted to the PVOL-International Outer Planet Watch. The high sampling and temporal coverage allowed us to study with unprecedented detail this SEBD. A major characteristic was the large number of bright spots (convective storms) that simultaneously but also sequentially appeared in the outbreak area. We also present non-linear simulations of the disturbance evolution generated by impulsive and localized Gaussian heat pulses, resulting from calculations performed with the EPIC code using as tracer the potential vorticity field.

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