



A giant thunderstorm in Saturn's northern hemisphere

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In early December 2010 a new lightning storm started in Saturn's atmosphere, and the Cassini RPWS (Radio and Plasma Wave Science) instrument detected the associated radio emissions called SEDs (Saturn Electrostatic Discharges) with unprecedented intensities and flash rates. Optical observations with ground-based telescopes and the Cassini camera showed a giant convective cloud in Saturn's northern hemisphere around 34 degrees latitude. About 2-3 weeks after the start of the storm it had developed into a large plume with a latitudinal extension of ~10,000 km and with a long eastward tail. This is the first SED storm of the Cassini era that developed in the northern hemisphere, while previous SED storms were located at the kronocentric latitude of 35 degrees south. This suggests that Saturn lightning storms are seasonal and follow the summer hemispheres. An indicator for that might be the seasonal variability of Saturn's emitted power since the lightning storms are most likely powered by Saturn's internal heat.