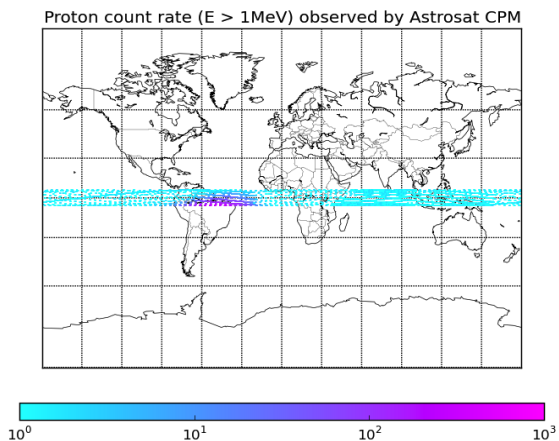
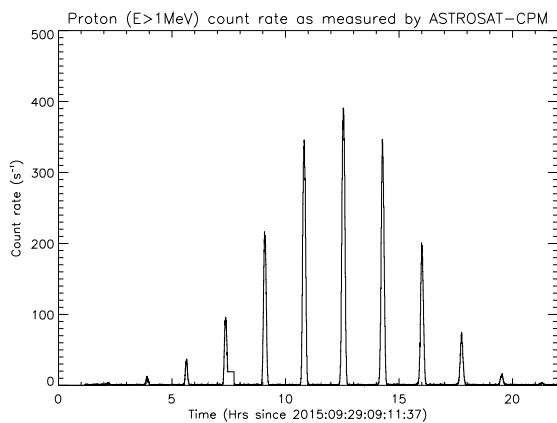


## Charge Particle Monitor (CPM) of Astrosat Gets Operational



The Charge Particle Monitor (CPM), an auxiliary payload in the Astrosat satellite, is designed to measure the count of charge particles at the satellite location. It is sensitive to protons above 1 MeV (Mega-electron volts). At the orbit of Astrosat (650 km), the particle rates are usually low, but, when the satellite enters a region called the South Atlantic Anomaly (SAA), the particle rates can go very high and can damage the sensitive X-ray detectors onboard Astrosat.

On September 29, 2015, a day after the launch of Astrosat, and during Orbit number 19 (Astrosat takes about 98 minutes to go around the Earth), CPM was 'Switched ON' and it immediately started providing data. The observed particle rates are shown in the figure: they are a benign 0.8 counts per second most of the time and go up whenever the satellite enters the dreaded SAA region. The same data is shown pictorially in the adjoining figure. Astrosat orbit has an inclination of 6 degrees (specifically selected to minimise the time in the SAA region) and the figure shows data for 12 orbits. The low particle rates are shown in Cyan and the Magenta patch indicates the location of the high background SAA region.



When the particle rate goes up, the CPM will automatically alert other instruments. For example, CZT-Imager, the hard X-ray payload to be 'switched ON' on Oct 2, will use this information to stop operation and protect itself during the passage of Astrosat through the SAA region.