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Van Allen Probe Charging During the St. Patrick's Day Event

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The geomagnetic storms on and around March 17, 2015 marked the largest storms seen in the declining phase of the solar cycle to date. We use the Helium Oxygen Proton Electron (HOPE) mass spectrometer on board the Van Allen Probe – A and B satellites to study in detail the charging effects seen on these spacecraft during this time. Ion particle flux data provides information on the magnitude of the charging events using the ion line charging signature due to low energy ions accelerated by the spacecraft potential. Electron flux observations are used to correlate the charging environment with variations in spacecraft potential through the event. We also investigate the density and temperature of ions and electrons during the time of the charging event.