Detection of the high energy component of Jovian electrons at 1 AU with the PAMELA experiment.

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PAMELA is a satellite-borne experiment that will be launched in the first half of 2006. It will make long duration measurements of cosmic radiation over an extended energy range (80Mev to $>$200 GeV). Specifically, PAMELA will measure the cosmic-ray antiproton and positron spectra over the largest energy range ever achieved (80MeV - 190 GeV) and will search for antinuclei with unprecedented sensitivity. Furthermore, it will measure the light nuclear component of cosmic rays and investigate phenomena connected with solar and earth physics. The apparatus consists of: a time of flight system, a magnetic spectrometer, an electromagnetic imaging calorimeter, a shower tail catcher scintillator, a neutron detector and an anticoincidence system. The Jovian magnetosphere is a powerful accelerator of electrons to several tens of MeV as observed at first by Pioneer 10 spacecraft (1973). The propagation of Jovian electrons to Earth is affected by modulation due to Corotating Interaction Regions (CIR). Their flux at Earth is, moreover, modulated because every 13 months Earth and Jupiter are aligned along the average direction of the Parker spiral of the Interplanetary Magnetic Field. For its characteristics PAMELA will be able to measure the high energy tail of the Jovian electrons in the energy range from 50 MeV up to 130 MeV. With long term observation it will also be possible to detect the Jovian component reaccelated at the solar wind termination shock from the galactic flux.