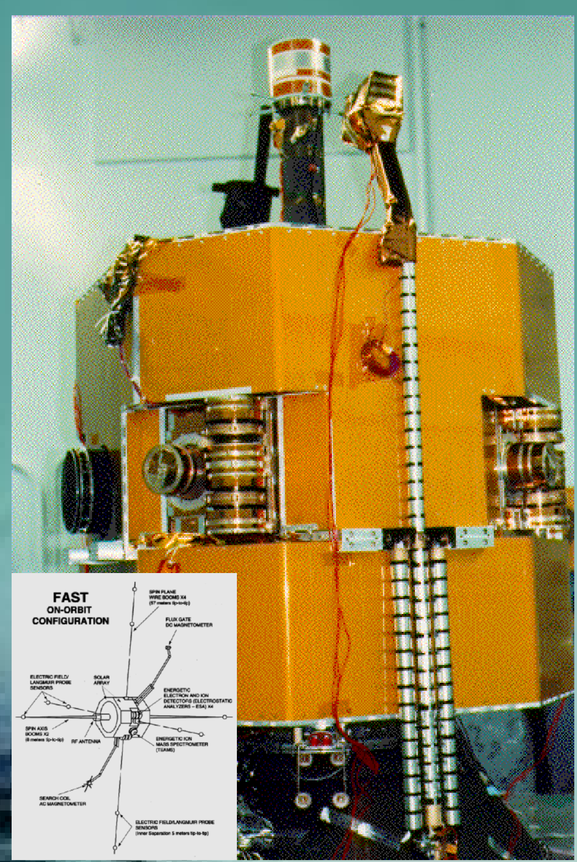
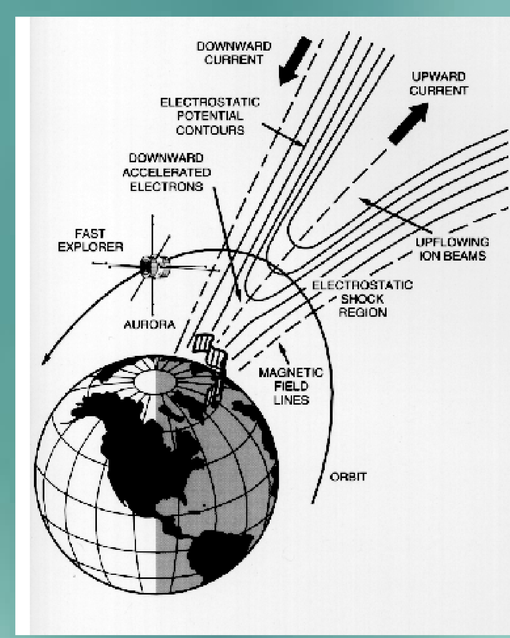
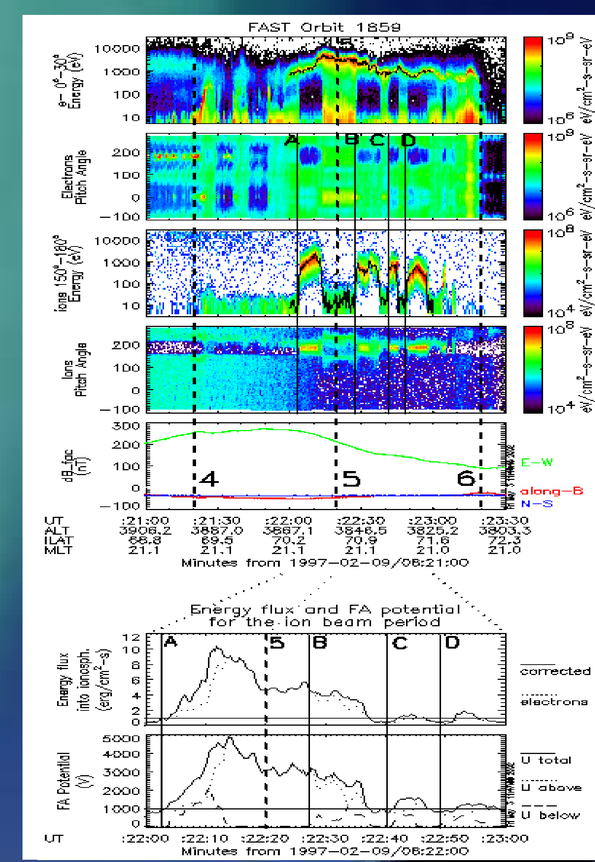
AURORA FROM GROUND AND SPACE

The auroral arcs are produced by ∼1–10 keV electrons, energized by a parallel electric field in the Auroral Acceleration Region, at several 1000 km above the Earth; at the same time ionospheric ions are accelerated upwards, forming beams.

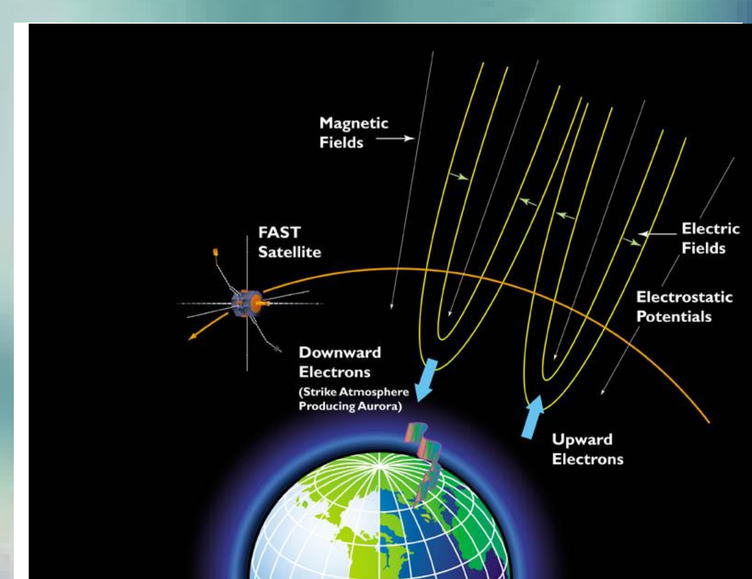






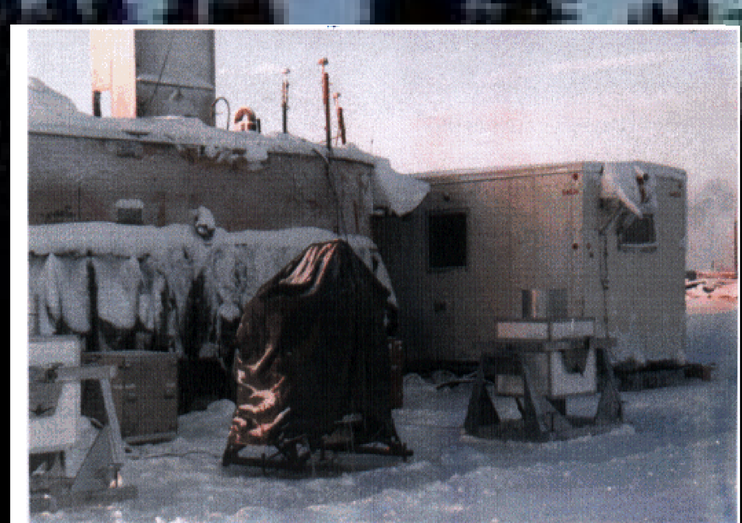
Fast **A**uroral **S**napsho**T** Explorer (FAST):

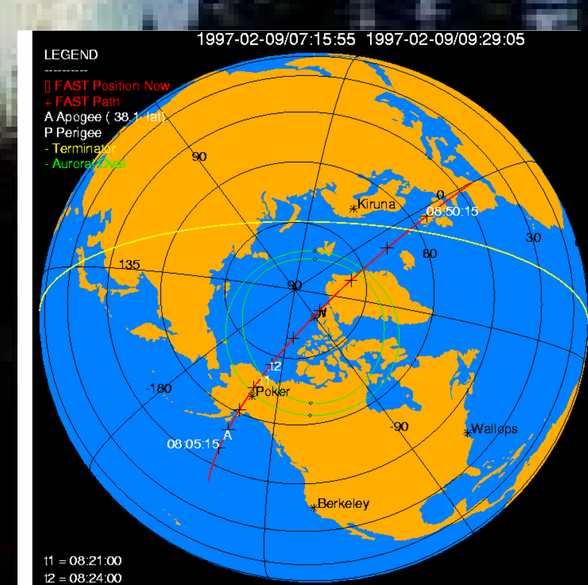
- Second NASA SMall EXplorer
- Launch: August 21, 1996
- Orbit: 350×4000 km, 83°
- Electron and Ion Spectrometers, Plasma Composition, Electric and Magnetic Field



Top Panels 1–4: Energy and pitch-angle spectrograms for downgoing electrons (1, 2) and upgoing ions (3, 4); Panel 5: Perturbation magnetic field. The dotted cuts 4, 5, 6 relate to the frames in the figure below. **Bottom** Panel 1: Electron energy flux at 110km; Panel 2: Field-aligned potential drop.

Ground optical equipment from MPE used in the auroral campaign from January–February 1997. Location: Deadhorse, Alaska, Lat. 70.22°, Lon. 211.61°.





Selection of auroral images, 1 min apart, taken on February 9, UT 8:18–8:26. FAST, indicated as a small square, crosses the camera's field of view in the frames 4, 5, 6.