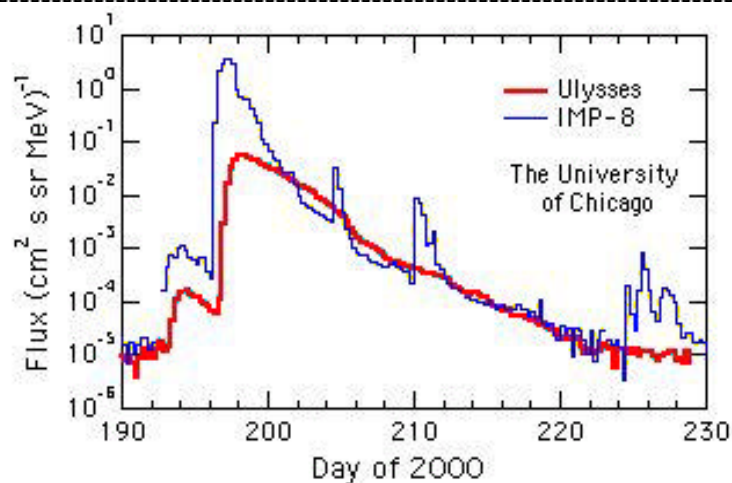
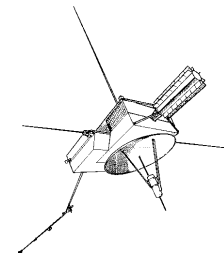
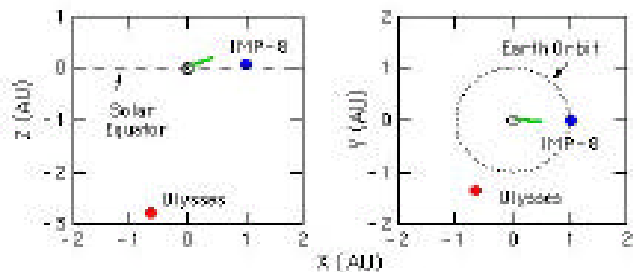


# Solar Energetic Particles - Wide Angular Distribution About the Sun



6 hour average proton fluxes from Ulysses (39-70 MeV) and IMP 8 (30-70 MeV) during the Bastille Day, 2000 Solar Energetic Particle event.



Positions of Earth and Ulysses at event onset with X towards Earth and Z along the sun's rotation axis. The green line points to the flare site on the Sun.

On Bastille Day (Day 196, 2000), the largest Solar Energetic Particle event of this solar cycle occurred following a flare and CME originating 22° North of the solar equator; Ulysses was near 3 AU at 62° South solar latitude. Despite the latitudinal separation of almost 90°, energetic protons arrived at Ulysses only a few hours later than at IMP 8 near Earth. Early in the event, particles were streaming outward from the Sun both at Earth and Ulysses, implying that the particles reached high latitudes *inside* the orbit of Ulysses. After a few days, the fluxes were almost equal at Ulysses and IMP, and persisted for a full solar rotation. This suggests that the entire inner heliosphere had almost the same particle intensities during the decay phase of the event. Thus, solar particle events originating anywhere on the sun can produce orders of magnitude increases in energetic particle radiation at Earth. (R.B. McKibben *et al.*, *Proc. 34<sup>th</sup> ESLAB Symposium*, in press, 2001).