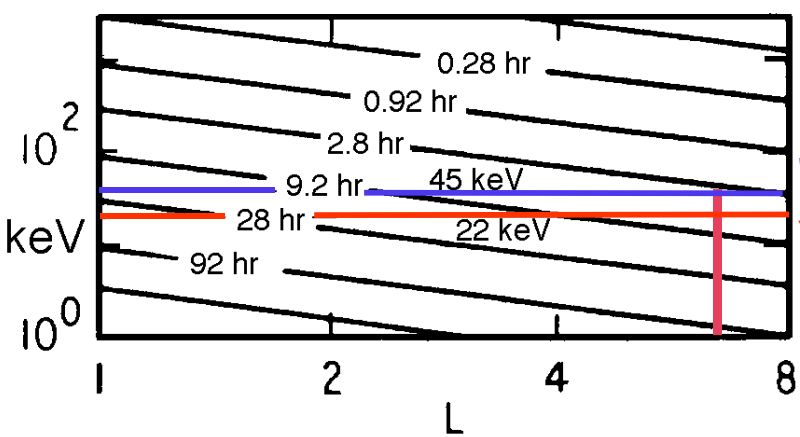
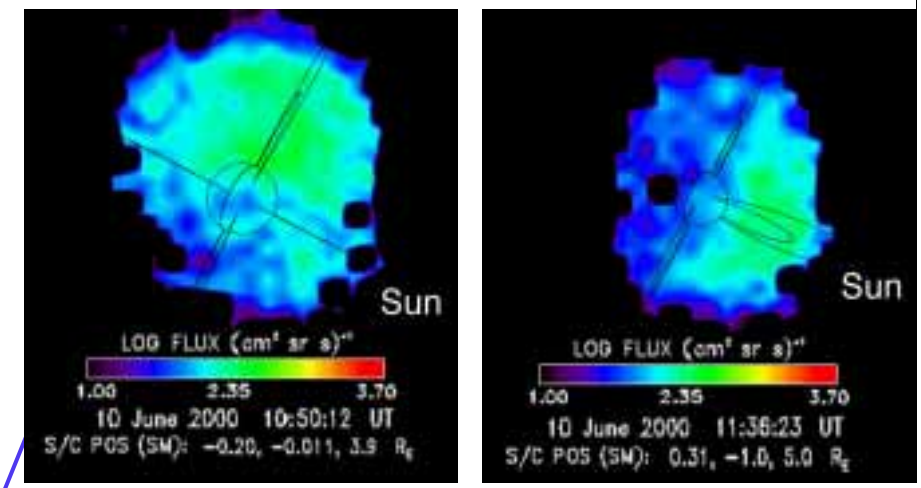
Substorm Ion Injection Over Broad Local Time Sector

- *Broad injection front, not a narrow sector. Common understanding had been a narrow Local Time Injection.*
- *All energies drift at a rate consistent with injection at about L = 7R_E;*
  - *6 hr drift period @ 22 keV*
  - *3 hr drift period @ 45 keV*

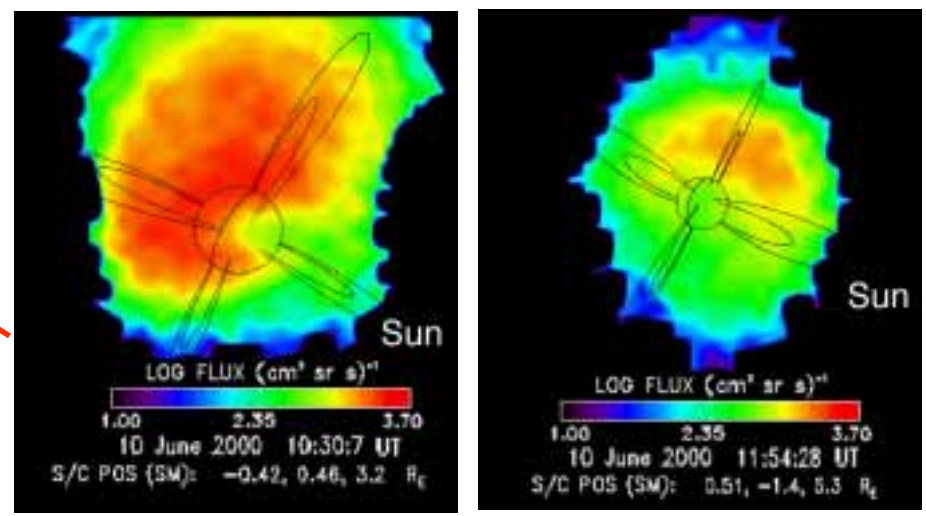


360° Drift Period as a function of Energy, L
Figure adapted from Shultz & Lanzerotti, 1974

Energetic Neutral Atom Images IMAGE/HENA, 6/10/00



<---- ~0.75 hours, 45 keV ----->



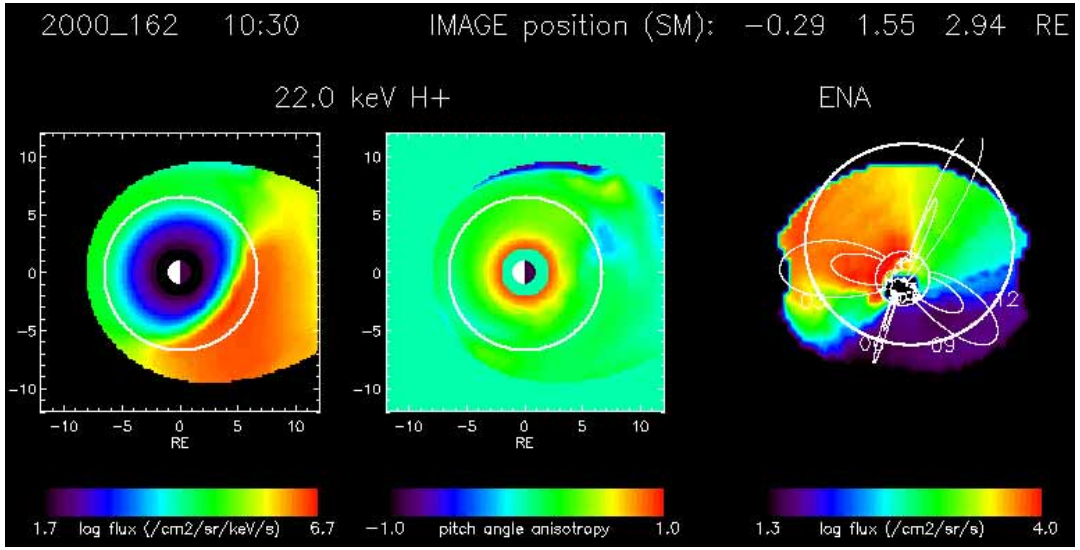
<---- ~1.5 hours, 22 keV ----->

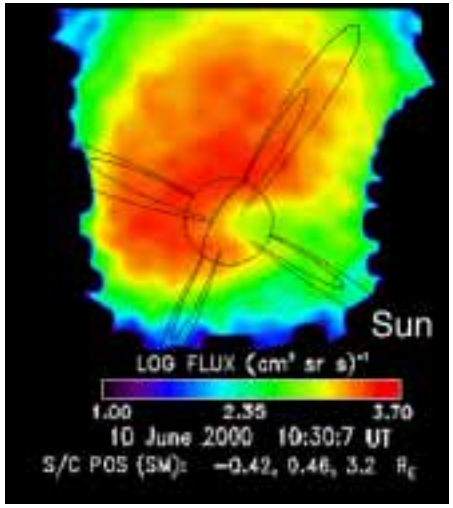
Substorm Ion Injection Over Broad Local Time Sector

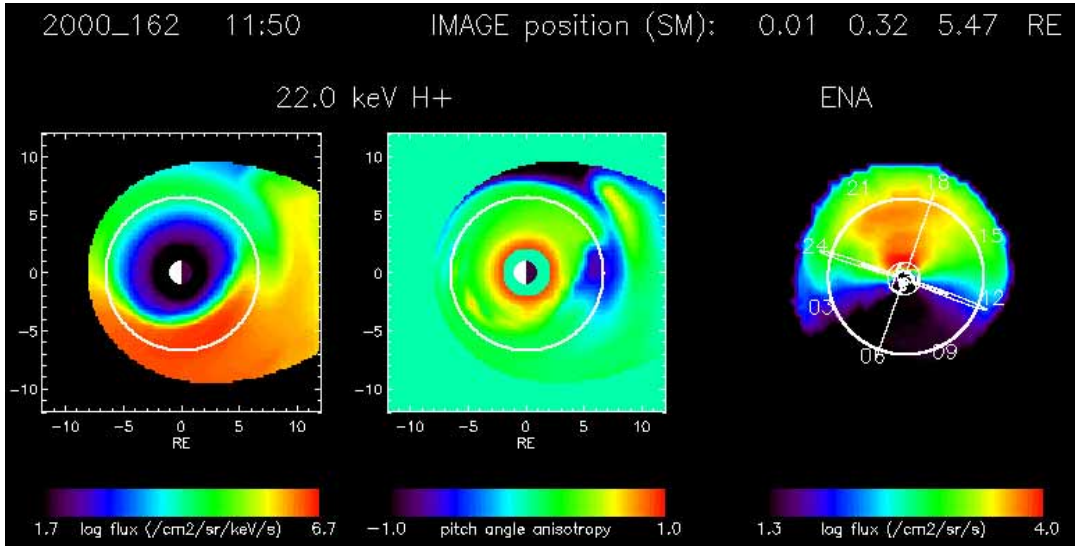
1030UT

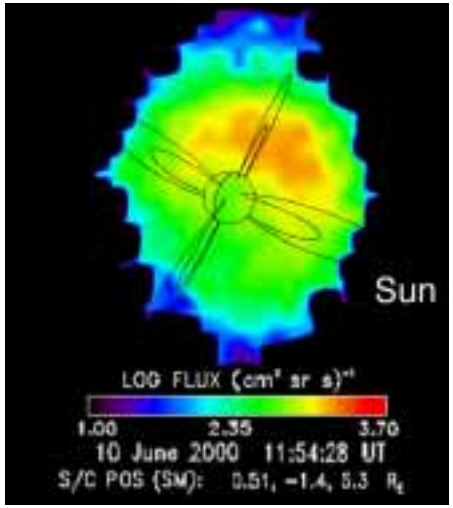
At 22 keV, compare the appearance of data (right) with simulation of M.-C. Fok (simulated ion flux, anisotropy, and image, from left).

1150UT



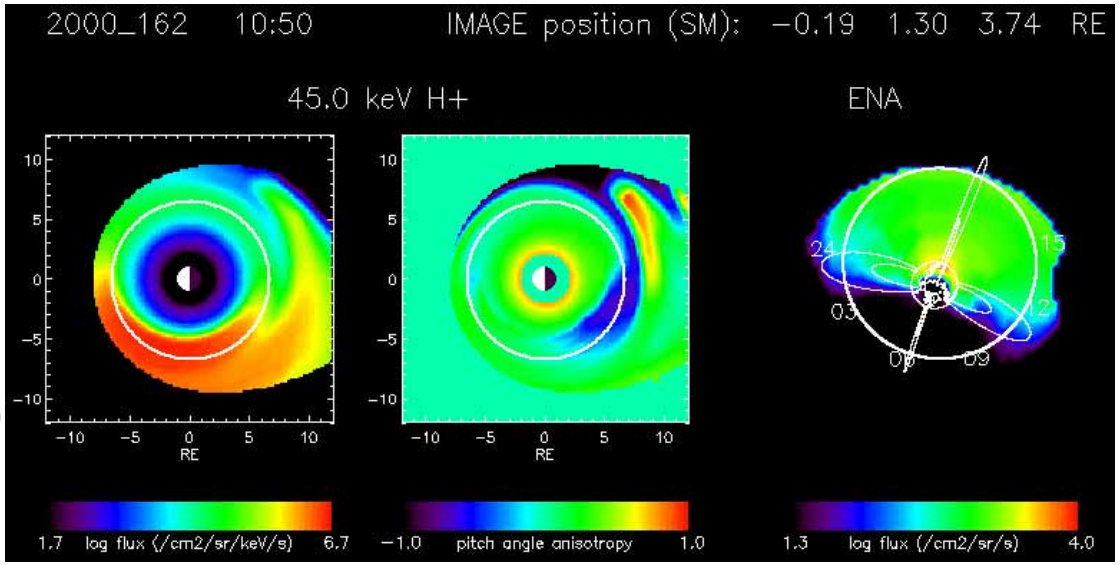
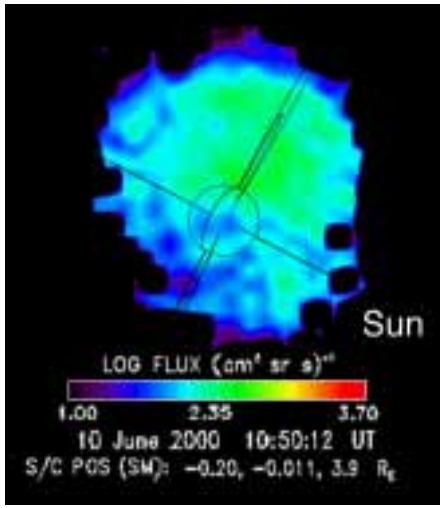
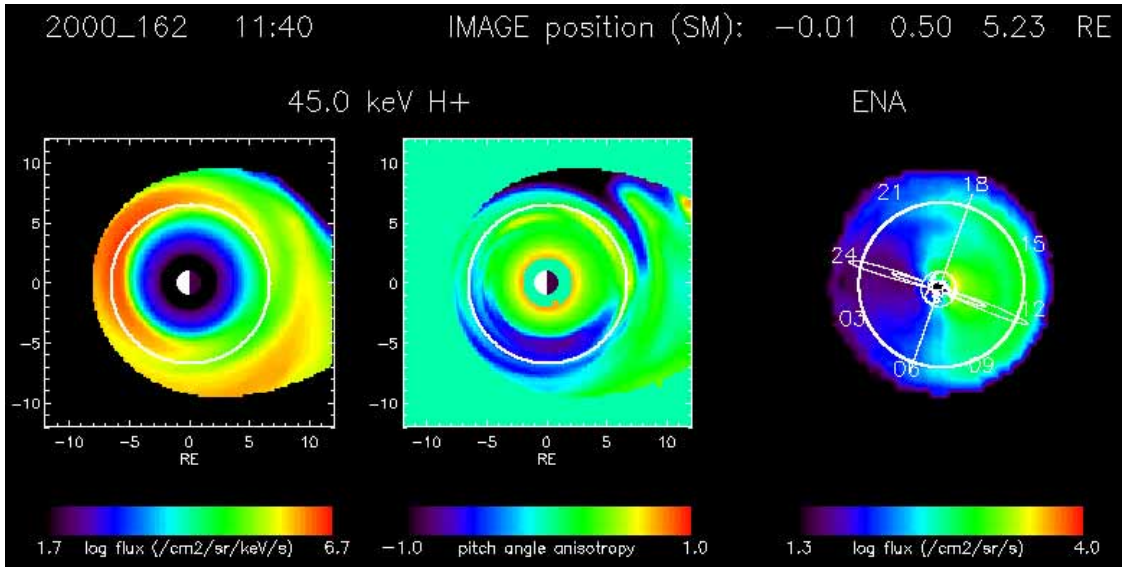
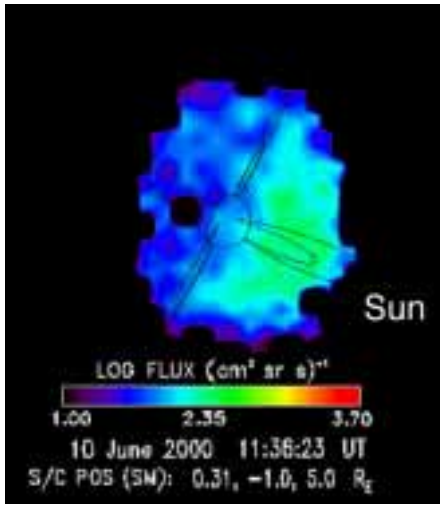






Substorm Ion Injection Over Broad Local Time Sector

1050UT

At 45 keV, compare the appearance of data (right) with simulation of M.-C. Fok (simulated ion flux, anisotropy, and image, from left).

1140UT