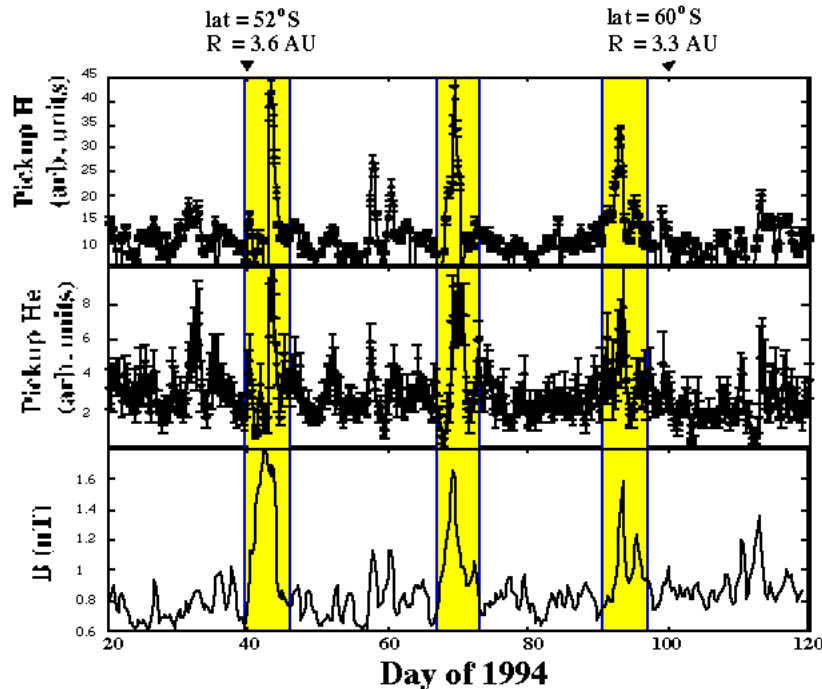
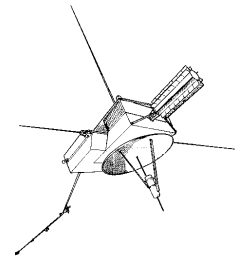


Long mean free path for pickup ions



Intensities of pickup H, He are correlated with increased magnetic field strength. Compressed regions of the solar wind (caused by fast solar wind overtaking slow solar wind) are shown in yellow.

The intensity of H and He pickup ions observed by Ulysses at high latitudes are enhanced in compressed solar wind regions where magnetic field and plasma density are large. These enhancements are due to: 1) increases in ionization rate caused by the exchange of charge between interstellar neutrals and the compressed solar wind ions, and 2) to compression by the solar wind flow of ions picked-up nearer the Sun. The characteristic scale associated with the scattering of the pick-up ions is 1-2 AU, much larger than theoretical predictions of .001 to .1 AU. The mean free path is essentially the same inside and outside the pickup regions. Theories of pick-up ion scattering must be revised. (N. R. Schwadron et al, JGR, in press, 1998)