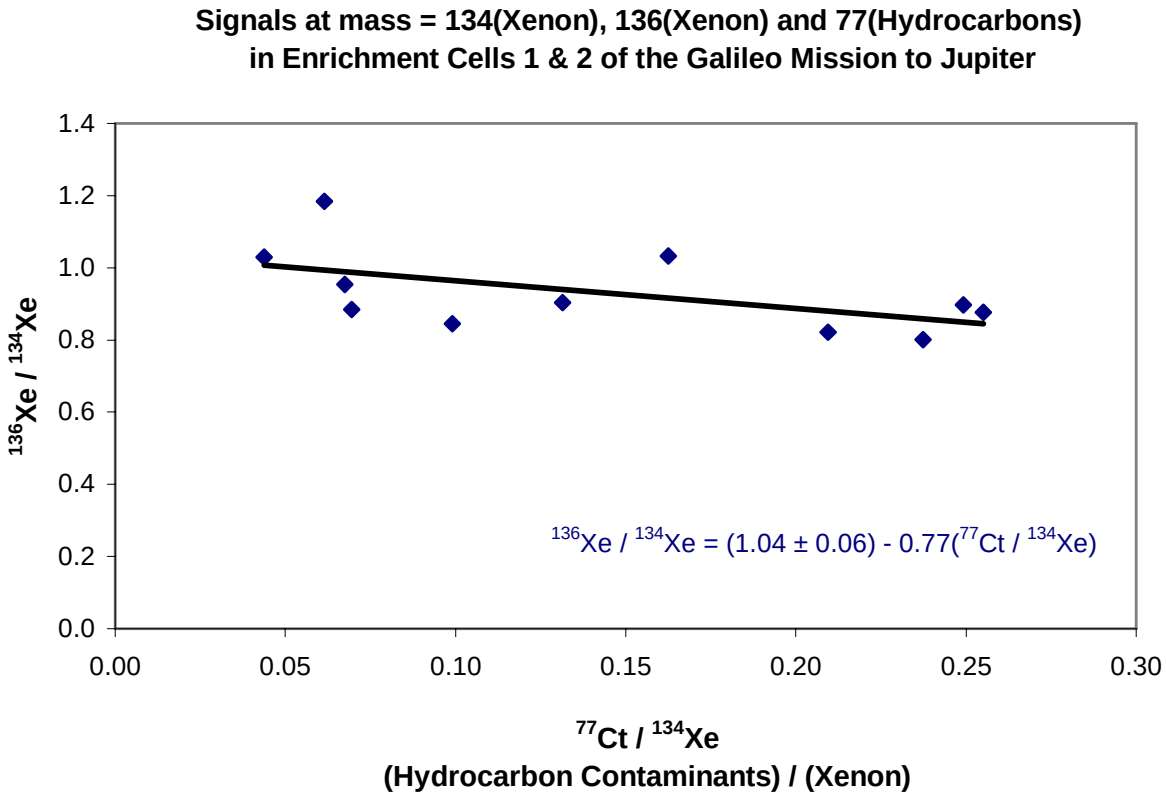
Strange Xenon in Jupiter



Presented here is Ken Windler's latest analysis of xenon isotopes in Jupiter's atmosphere. The data, obtained with the Galileo probe that entered Jupiter's atmosphere in 1996, were the subject of three earlier papers [*Bull. Am. Astron. Soc*. **30**, 852-853 (1998); *J. Radioanal. Nucl. Chem*. **238**, 119-121 (1998); *Origin of Element in the Solar System* (Kluwer Academic / Plenum Publishers) 519-527 (2000); *ibid.*, 529-543 (2000)].

As noted in those papers, the value of the ^{136}Xe / ^{134}Xe ratio is 0.80 in the solar wind and 1.04 in the "strange" xenon found with abundant primordial helium in diamonds of carbonaceous chondrites. The latest analysis of the Galileo data indicates a value of ^{136}Xe / $^{134}Xe = 1.04 \pm 0.06$ in Jupiter's He-rich atmosphere.

These results show that:

1. Xenon in Jupiter is distinct from Xenon in the Sun.
2. The link between "Strange" Xenon, Xe-X, and primordial Helium, observed on the microscopic scale of meteorite minerals, extends to the planetary scale of astronomical units (AU).
3. The 1983 paper, "Solar Abundances of Elements", *Meteoritics*, **18** (1983) 209-222, was valid in predicting the occurrence of "Strange" Xe in Jupiter. See, for example, prediction #3 on page 13 of http://web.umr.edu/~om/archive/SolarAbundances.pdf


HOME