

**NITROGEN ISOTOPES IN THE RECENT SOLAR WIND :
FURTHER ANALYSIS OF GOLD-PLATTED
CONCENTRATOR FRAME FROM GENESIS**

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Introduction: Nitrogen, the fifth most abundant element in the universe, displays the largest (after H) stable isotope variations in the solar system materials (excluding pre-solar grains). Recently several studies concluded that protosolar nebula N was depleted by ~400 ‰, from (i) the combined ion probe analysis of H and N isotopes in lunar soil grains ($\delta^{15}\text{N} \leq 240$ ‰, [1]), (ii) the analysis of the Jupiter atmosphere by either infra-red spectroscopy [2] or *in-situ* by the Galileo probe [3] and (iii) $\delta^{15}\text{N}$ of -400 ‰ for osbornite (TiN) embedded in a CAI [4]. The Genesis mission sampled solar wind ions during 27 months in space by passive implantation of SW ions in targets made of pure material. Despite a hard landing of the sample capsule, target material could be recovered and analyzed. Nitrogen and helium, neon and argon were extracted under very high vacuum at CRPG Nancy, France, by UV laser (wl : 193 nm) ablation of targets with a spot size of approx. 50x150 μm rastered over surfaces up to 1 cm^2 . The N extraction efficiency was checked with test targets implanted with known ¹⁵N fluence. Layers of gold could be removed sequentially by modulating the power of the laser beam or the number of pulses per area, with a depth resolution of a few nm. Noble gases abundances and isotopic ratios, analysed together with N in each extraction step, were used as tracers of SW occurrence, of terrestrial contamination, and of elemental and isotopic fractionation. We have analyzed gold-over-sapphire target fragments and have focused recently our effort on target material exposed in the Genesis SW ion concentrator and more enriched in SW ions. Data obtained so far are heavily affected by terrestrial contamination. Nevertheless we could not find evidence for a light N component in any of the samples analyzed so far and data point to a SW N isotope composition within the range of inner planetary and meteoritic values. We are in the process of analyzing another gold-platted fragment of the concentrator frame (the so-called "12 o'clock arm"), and results will be presented at the conference.

[1] Hashizume K. et al. (2000) *Science*, 290; 1142-1145. [2] Fouchet T. et al.,(2000) *Icarus*,143; 223-243. [3] Owen T. et al. (2001) *Ap. J.* 553; L77-L79. [4] Meibom A. et al.(2007) *Ap J.* 656; L33-L36.