GENESIS, FIVE YEARS AFTER.
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Introduction: Almost five years after the crash-landing of the sample return capsule of the Genesis solar wind collection mission, many of the originally defined high-priority goals [1] have been reached or prospects are very good that they will be reached within the next few years. None of the major goals had to be abandoned as a consequence of the crash. This contribution reviews some of the major findings from the mission, with a focus on investigations where noble gases were the primary objective or are or will be important to properly interpret other data. This choice reflects the expertise of the author but also the fact that noble gases are among the less challenging elements for precise analyses in Genesis targets.

Noble Gases in Bulk Solar Wind and Solar Wind Regimes: Accurate values for the elemental and isotopic composition of He, Ne, and Ar and preliminary values for Kr and Xe are available by now [e. g. 2-5]. The variety of targets allowed to recognize those which suffered minimal diffusive losses and to experimentally test backscatter loss simulations. In general, earlier compositions deduced from lunar and meteoritic samples and the Apollo Solar Wind Composition experiment have been confirmed surprisingly well, with many Genesis values being more accurate. Minor differences between the different solar wind "regimes" should allow to deduce possible fractionations between solar source composition and solar wind, especially once also H concentrations will be available. The enigmatic SEP noble gas component thought to be ubiqituous in lunar samples has been recognized as artifact [6].

Oxygen and Nitrogen: The first MegaSIMS analyses [7] showed that solar oxygen has a negative $\Delta^{17}O$ value, in agreement with recent predictions [8, 9].However, these data have not yet been corrected for the likely sizeable isotopic fractionation induced by the Genesis solar wind concentrator, as well as a possible fractionation between sun and solar wind. Ne analyses on the same concentrator target as that used for O will allow to constrain the concentrator-induced fractionation. Two widely divergent values for the nitrogen isotopic composition in the solar wind have been proposed from Genesis analyses, one claiming an enrichment of the heavy isotope by ~30% relative to atmospheric N [10], the other one claiming a depletion of ^{15}N by ~30% [11]. Both analyses were plagued by experimental difficulties, either incomplete N recovery or large N contaminations (which were constrained by simultaneous noble gas analyses). An isotopically light solar wind N value would be consistent with the nitrogen isotopic composition in Jupiter.

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