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The Genesis Mission Metallic Glass Solar Wind Collector C. HAYS, A. JUREWICZ, J. KULLECK, M. PETKOV, K. KUHLMAN, Jet Propulsion Laboratory/California Institute of Technology, Pasadena CA., K. MCNAMARA, NASA Johnson Space Center, Houston, TX., A. GRIMBERG, R. WIELER, Institute for Isotope Geology and Mineral Resources, ETH Zurich — NASA's Genesis mission continuously exposed materials to the solar wind, and brought them back to Earth for analysis. Despite the hard impact landing of the sample return capsule in Sept./2004, some of the solar wind collectors were recovered in pristine condition; one was a metallic glass, with target composition $Zr_{58.5}Nb_{2.8}Cu_{15.6}Ni_{12.8}Al_{10.3}$. In this talk, we will describe the glassy alloy, the mission critical-properties, and expected science returns. Metallic glasses are well suited to measure solar wind components: 1) the disordered structure reduces fractionation during solar wind ion-implantation and loss of solar wind ions due to diffusion; and 2) an absence of grain boundaries eliminates high-diffusion-rate pathways. The glass will be analyzed for high-energy elements; e.g., He and Ne, with beyond solar wind energies. It is hoped that the glass will help elucidate the origin of solar energetic particles, a solar wind component with controversial origin.

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