GALILEO PRELIMINARY RESULTS OF SATELLITE OBSERVATIONS. T.V. Johnson, Jet Propulsion Laboratory, MS264-401, 4800 Oak Grove Drive, Pasadena, CA 91109 (e-mail: tjohnson@jpltvj.jpl.nasa.gov).

The Galileo Orbiter has been exploring the Jupiter system since December 1995. One of its primary objectives is the investigation of the Galilean satellites. The first outer planet system to be explored in detail, the jovian satellites hold clues both to the early conditions in the circum-jovian nebula and to the processes which have shaped their subsequent geological, geochemical and geophysical evolution. The Galileo mission design and instruments provide a multidisciplinary approach to studies of the satellites. Analysis of spacecraft tracking data yields information about gravity fields and internal structure. Measurements of magnetic fields, low energy plasmas, wave phenomena and high energy radiation reveal a wide variety of interactions between the satellites and their magnetospheric environment. Remote sensing observations, including spectral and imaging data from the far UV to the far IR, study the composition, structure and geologic history of the satellite surfaces.

Satellite results from the first part of Galileo's orbital mission will be discussed, including:

- Interior structures - the inner three satellites apparently have cores, while Callisto is homogeneous.
- MagnetoSpheric interactions - there is strong evidence for an internally generated field al Ganymede, no magnetic field detected at Callisto and complex, ambiguous interactions for Io and Europa,
- Geologic history - Io remains the most volcanically active planetary body known, Many new, high temperature hot spots (>700 K) have been identified. Ganymede shows evidence of complex tectonic resurfacing and Callisto's surface at high resolution is "younger" in appearance than anticipated. Europa has a geologically young surface with evidence for both extrusive and icy volcanism and extensive near-surface melting rind "rafting" of brittle icy plates,

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