

GALILEO OBSERVATIONS OF S-L9 IMPACTS

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The Galileo spacecraft was in a unique position to view directly the S-L9 impact sites on Jupiter. Data were taken in various combinations by the CCD camera (SS1), Ultraviolet Spectrometer (UVS), Near Infrared Mapping Spectrometer (NIMS) and Photopolarimeter Radiometer (PPR), operating at wavelengths from 0.29 μ m to ~5 μ m. Successful observations were made of eight events (G, H, K, L, N, Q1, R and W). The Galileo data provide key information on the timing, intensity and physical characteristics of the first few minutes of the impact phenomena. Preliminary analyses have shown that all of the events were characterized by luminous phenomena (a few to 20% of Jupiter's luminosity) lasting 10's of seconds to ~1.5 minutes. The G event was particularly well characterized, with comparisons of UVS, PPR and NIMS data yielding a temporal history of the size, temperature and altitude of the bolide/fireball. It also seems apparent from comparisons with HST and ground-based observations that some form of high altitude phenomena (light scattering off dust, for instance) allowed terrestrial observers to see "precursor" events at essentially the same time as the Galileo observations of the bolide/fireball.

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4. 235mm slides preferred
5. Oral