Geophysical Research Abstracts, Vol. 8, 09561, 2006
SRef-ID: 1607-7962/gra/EGU06-A-09561

Spin History and Control of Planetary Probes during Entry and Descent

R. Lorenz (1)

(1) LPL, U. Arizona (rlorenz@lpl.arizona.edu/520 621 4933)

Although it may seem a fairly straightforward matter, the control of spin appears to be a rather arcane and poorly-documented aspect of entry and descent for both planetary probes and terrestrial parachute-borne payloads. Further, as evidenced by the recent and as yet unexplained reversal of the spin of the Huygens probe during descent and anomalies in previous missions, it is not easy to get right.

Spin may be induced for many reasons - to avoid attitude divergence during a rocket motor firing, to maintain a safe attitude during entry, and to rotate payloads for optical or electric field measurements. Control is effected by spin-eject devices, rocket motors, yo-yos and spin vanes or spin parachutes. I review the various approaches used and their reasons and summarize the rather few spin histories documented during descent.