

Thursday, June 19, 2014

SUSTAINED FLIGHT

9:00 a.m. Beckman Institute Auditorium

Chairs: Jim Cutts

Jean-Pierre Lebreton

- 9:00 a.m. Tokumaru P. T. * Balaram J. Cutts J. A. Matthies L. H.
[Fixed and Rotary Wing Flight of Small Air Vehicles on Mars, Venus, and Titan](#) [#8081]
 This presentation discusses air vehicle concepts from three recently proposed missions to Mars, Venus and Titan with an emphasis on air vehicle performance considerations.
- 9:15 a.m. Matthies L. * Tokumaru P. Sherrit S. Beauchamp P.
[Titan Aerial Daughtercraft \(TAD\) for Surface Studies from a Lander or Balloon](#) [#8083]
 Recent rapid progress on autonomous navigation of micro air vehicles for terrestrial applications opens new possibilities for a small aerial vehicle that could deploy from a Titan lander or balloon to acquire samples for analysis on the mothership.
- 9:30 a.m. Balaram J. * Tokumaru P. T.
[Rotorcrafts for Mars Exploration](#) [#8087]
 Rotorcraft mobility provides a number of useful capabilities to potential Mars missions. We present some recent results relating to the design and test of Mars rotorcraft mobility elements, and aspects of rotorcraft system and mission design.
- 9:45 a.m. Voss P. B. * Nott J. Cutts J. A. Hall J. L. Beauchamp P. M. Limaye S. S. Baynes K. H. Bennett B. Hole L. R.
[Altitude-Controlled Balloons for Long-Duration Flights on Venus](#) [#8092]
 Balloons provide a relatively simple and well-proven platform for accessing the upper atmosphere of Venus. We analyze several types of altitude-controlled balloons and assess their suitability for an extended mission on Venus.
- 10:00 a.m. Pauken M. T. * Hall J. L.
[Development and Testing of a Titan Superpressure Balloon Prototype](#) [#8006]
 We discuss the technical developments of a superpressure balloon designed to operate in Titan's cryogenic environment. A 1.5-m diameter spherical balloon was constructed from a hexalaminated mylar film plus polyester fabric for this research.
- 10:15 a.m. Mimoun D. * Garcia R. F.
[A Venus Interior Structure Explorer Mission Using Balloons](#) [#8063]
 Although very similar to Earth, Venus remains a mystery. One key to the understanding this is the understanding of its interior structure. We propose a mission concept using balloons, based on solid/atmosphere coupling processes understanding.
- 10:30 a.m. COFFEE BREAK
- 10:45 a.m. PANEL DISCUSSION
- 12:00 p.m. LUNCH