2011 Spring Colloquium Series

Dr. E. Glen Lightsey

Department of Aerospace Engineering and Engineering Mechanics
University of Texas at Austin

FASTRAC and ARMADILLO-
Two Student Built Satellites at UT-Austin

FASTRAC (Formation Autonomy Spacecraft with Thrust, Relnav, Attitude, and Crosslink) is a pair of nanosatellites (mass <100 kg) that was built entirely by students at the University of Texas at Austin for less than $250,000. The mission, which was the winner of the University Nanosatellite-3 competition in 2005, is intended to demonstrate enabling technologies for spacecraft formation flying on a low cost budget. FASTRAC was recently launched into space with a group of other small satellites on the Air Force Space Test Program STP-S26 Minotaur IV rocket on November 19, 2010. This first half of this presentation will review the FASTRAC mission and give an update of its status, including launch and early operations.

ARMADILLO (Attitude Related Maneuvers And Debris Instrument in Low Orbit) is a single picosatellite (mass <10 kg) that was recently selected to compete in the University Nanosatellite-7 competition, which will be conducted from 2011-2013. The mission is to develop a 3U CubeSat spacecraft bus that can perform accurate attitude pointing and carry a science instrument. In collaboration with the Center for Astrophysics, Space Physics, and Engineering Research (CASPER) at Baylor University and the Center for Space Research (CSR) at UT-Austin, the instrument proposed for ARMADILLO is a piezo dust detector capable of sensing small size orbital debris which will be provided by CASPER. If selected for flight, ARMADILLO could fly in space in 2014 or 2015. The second half of this seminar will present the ARMADILLO mission and discuss basic design considerations and mission requirements.

E. Glenn Lightsey is the Fellow of the W.R. Woolrich Professorship in Engineering at the University of Texas at Austin. He received his Ph.D. in Aeronautics and Astronautics at Stanford University in 1997. From 1986 to 1999 he was employed as an aerospace engineer in guidance and control at NASA's Goddard Space Flight Center. During that time, he designed attitude control systems for several satellites and was Goddard's GPS Technology Lead Engineer. In 1999, he received the NASA Center of Excellence Individual award "in recognition of unique and outstanding contributions to the utilization of Global Positioning System technology in space." He joined the faculty at UT Austin in 1999 at the Department of Aerospace Engineering and Engineering Mechanics.

Friday, January 28, 2011

1:30 p.m.

Baylor Sciences Building, Room C.105
Baylor University, Waco

For additional information please call Sherri Honza x1271