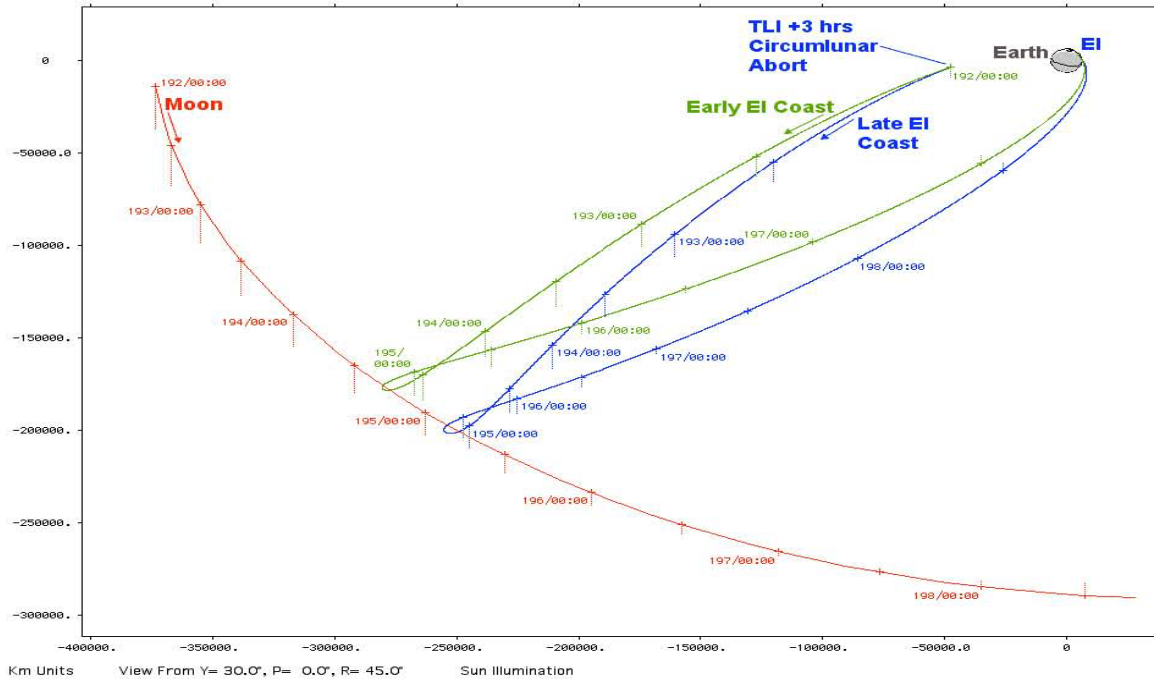




Astrodynamics Technical Committee
“Lunch-and-Learn”



A Lunar Surface Rendezvous Architecture Proposal

Daniel R. Adamo*

*Astrodynamics Consultant, Houston, Texas 77059

DATE: Friday, June 12, 2009

PLACE: JSC Building 16 Room 111

TIME: Noon to 1:00 PM

ROOM CAPACITY: 35

Lunar exploration architecture revision is proposed based on two Ares V launches [1]. The first cargo-only launch pre-emplaces Earth return consumables and exploration systems on the lunar surface. One to five months later, a second Ares V launch lands a crew of four at the same lunar location. Rendezvous operations in Earth and Moon orbit are eliminated, together with associated geometric trajectory design constraints. Absent these constraints, the proposed lunar surface rendezvous architecture enjoys uniform performance and loiter time requirements regardless of landing location. Consequently, the "land anywhere; leave anytime" goal associated with United States lunar exploration policy is fully realizable. In addition, proposed lunar surface rendezvous architecture leads to scalable systems and capabilities supporting human exploration of near-Earth asteroids and other destinations beyond the Moon. Precision trajectory design data are presented, illustrating the proposed architecture's robust and uniform performance [2].

[1] Adamo, D. R., "Revisited Virtues of Lunar Surface Rendezvous (LSR)", 23 March 2009.

[2] Adamo, D. R., "A Notional Lunar Surface Rendezvous Mission in 2019", 22 February 2009.

Please bring your lunch and a friend. This event is open to badged personnel. AIAA membership is not required. Non-badged visitors who are US citizens may contact us with visitor badging requests 3 days or more in advance. Professional Engineers earn one hour of credit toward Continuing Education requirements by attending this event. If you plan to attend, registration is recommended online at www.aiaa-houston.org. For additional information contact Dr. Albert A. Jackson, technical committee chair, 281 483 5037.