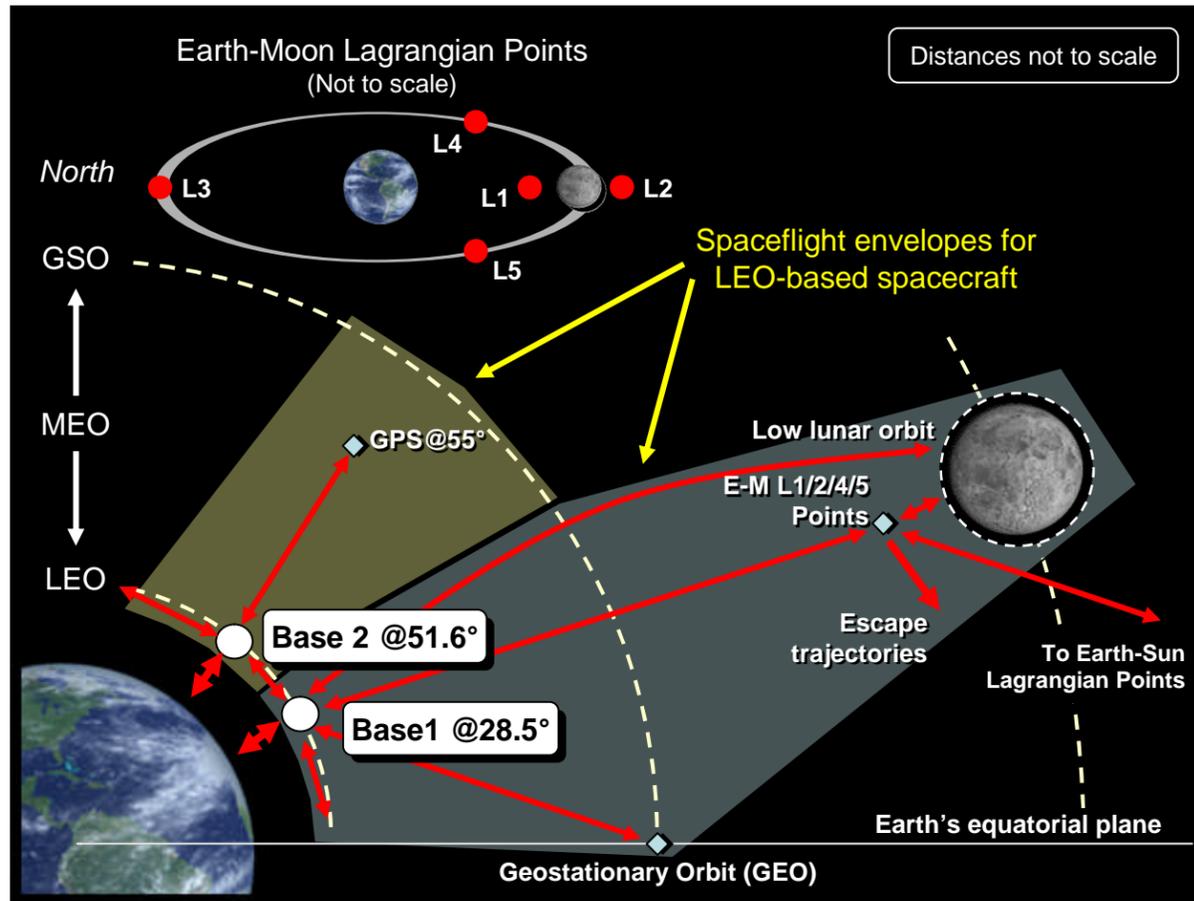


Earth-Moon Spaceways



As with a highway roadmap showing how to get to your destination, this spaceways diagram shows how Americans will move around and operate within the Earth-Moon system using an integrated space infrastructure built over the next 25 years.

The infrastructure starts with spaceports located in the U.S. or its territories. Launching from these spaceports, fully-reusable spaceflight systems will transport passengers and routine cargo to low Earth orbit (LEO). Their destinations will be two space bases—one at 28.5° inclination and the second at 51.6° inclination. Different in design and purpose than the International Space Station (ISS), these space bases will receive and house passengers; assemble, test, and service satellites; assemble large space facilities such as space hotels and crewed spacecraft; and, berth and replenish spacecraft between missions. At these bases, most logistics support services will be performed in large, pressurized space hangars while the space dock will be used for assembling large facilities (e.g., space hotels) and berthing spacecraft.

The 28.5° base will be the hub for human space operations out to geostationary orbit, lunar orbit, and the Earth-Moon Lagrangian Points. Reusable spacecraft, operating from this base, will be able to transport passengers and cargo to and from these destinations. The 51.6° base will provide support for a reinvigorated ISS and provide access to satellites (e.g., GPS satellites) in higher inclination orbits.

As with frontier forts, these space bases will grow into space “towns” with co-orbiting space hotels, specialized business centers, space universities, etc. And, this is just the beginning of American spacefaring activities in the 21st century.

Mike Snead, PE, mike@mikesnead.net, <http://mikesnead.net>, February 23, 2007



A white paper on:

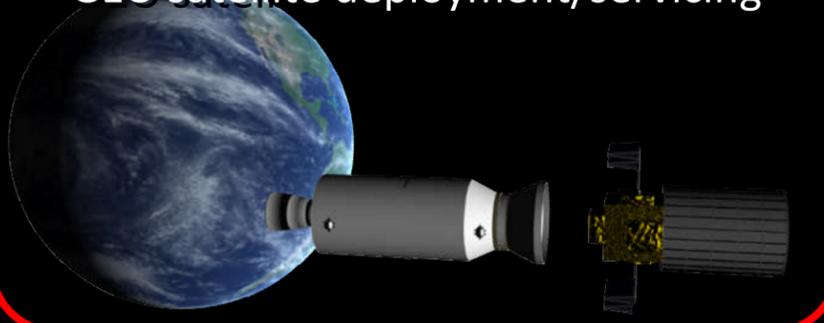
Near-Future American Space Infrastructure Possibilities

- To retain leadership in space—and the economic and security benefits that go with it—America must become a true spacefaring nation
- How? By building a commercial-based space infrastructure over the next 25 years enabling robust, effective, and efficient government and commercial human space operations throughout the Earth-Moon system
- What would this space infrastructure provide?
 - Fully-reusable space access for passengers and cargo with “aircraft-like” safety and operability
 - Shuttle-derived unmanned heavy spacelift
 - LEO-based logistics services including assembly, maintenance, repair, upgrade, disposal, spaceship berthing, and space search and rescue
 - LEO-based reusable in-space transport of passengers and cargo throughout the Earth-Moon system
- Is this too much to expect in 25 years?
 - No! It only took a dedicated America 22 years to go from the X-1 breaking the sound barrier to Apollo 11 landing on the Moon
 - The technologies and industrial capabilities needed to build the space infrastructure are available today

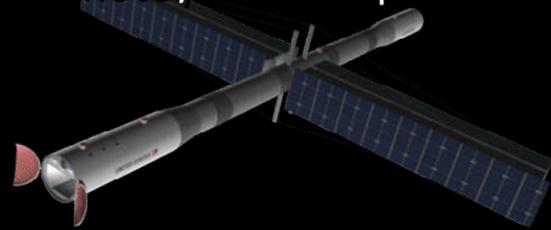
Copyright © 2007 J.M. Snead. Print and electronic distribution permitted only of the entire white paper. Quotation with full attribution permitted. Individual illustrations of space systems are in the public domain. All other rights reserved.

Spacefaring America

GEO satellite deployment/servicing



100-person space hotel/business park



Large space transports will operate throughout the Earth-Moon system



LEO satellite deployment/servicing



Fully-reusable passenger and cargo spaceflight system



Shuttle-derived cargo spacelifter



Space tug (Not to scale)



LEO space base/dock

Over 25 years, America's spacefaring capabilities can dramatically improve as new space infrastructure systems are developed and deployed

Increasing spacefaring capabilities

25 years of infrastructure building

'09 '10 '11 '12 '13 '14 '15 '16 '17 '18 '19 '20 '21 '22 '23 '24 '25 '26 '27 '28 '29 '30 '31 '32 '33