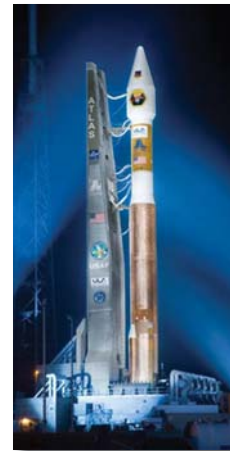
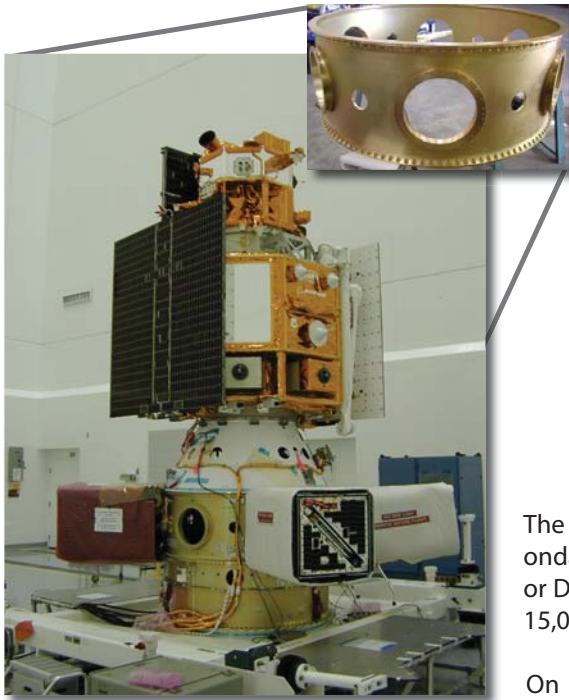


ESPA: The EELV Secondary Payload Adapter

Heavy lift. Excess capacity. Small Satellites.



The ESPA Ring allows six 400-lb. secondary satellites to launch on Atlas V or Delta IV, with primary satellites up to 15,000 lb.

On March 8, 2007, ESPA enabled the STP-1 Mission on Atlas V launch from Cape Canaveral.



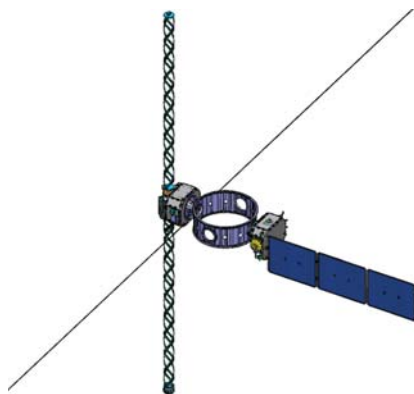
LCROSS ESPA

Current ESPA Programs

- Air Force Research Lab and DoD Space Test Program are supporting development of ESPA Orbital Maneuvering Systems (OMS).
- NASA Ames Small Spacecraft Division sponsored development of ESPA variants for Lunar and Science Missions.



DSX ESPA



- DSX will use a four-port ESPA as the hub of a free-flyer spacecraft in Medium Earth Orbit.



- ESPA is the spacecraft hub for NASA's Lunar Crater Observation and Sensing Satellite (LCROSS).

■ ESPA was developed by CSA Engineering, under an SBIR contract to AFRL, for the DoD Space Test Program (SDTW/STP). STP developed technology requirements and operational inputs. AFRL/VS led research/development effort and integrated technology development team.

On-Going ESPA Development

Small Launch ESPA



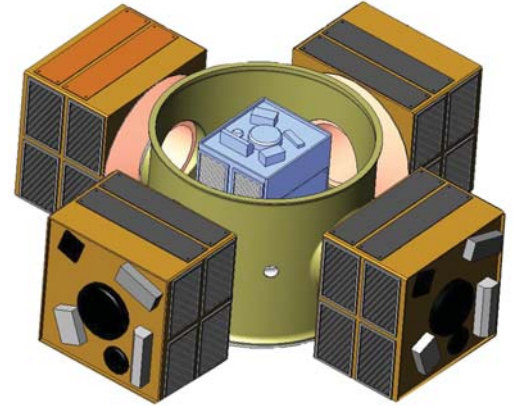
38.8-inch ring
8- or 15-inch ports
for Minotaur 4, Delta 2,
Falcon 1e, Taurus

Separating ESPA



Integrated Separation System
reduces adapter mass and height.
Saab and Lightband separation systems

ESPA Grande



"Stretch" version of standard ring
15- or 23-inch ports
Ring heights to 60 inches

Partial ESPA Catalog



STP-1 ESPA



SepESPA LLB



SL ESPA 15



LCROSS ESPA



SepESPA Saab



SL ESPA 24



DSX ESPA

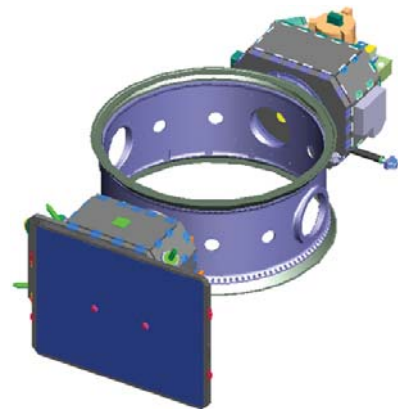


DSX ESPA w/ deck



ESPA Grande 42

SoftRide Vibration/ Shock Isolation



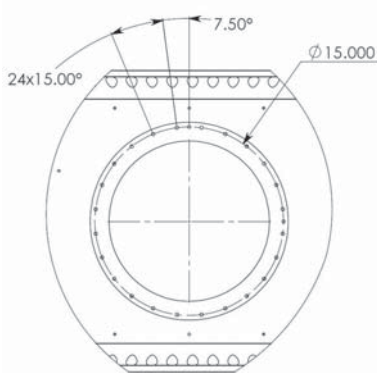
SoftRide OmniFlex provides
reduced launch environment for
DSX modules



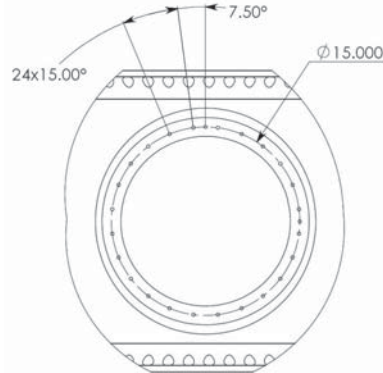
ShockRing for FalconSat 3
on STP-1 launch

Standard Secondary Spacecraft Interface

15-inch-diameter bolt circle, 24 fasteners



Flanged Port



Boss Port

ESPA Contact Information
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