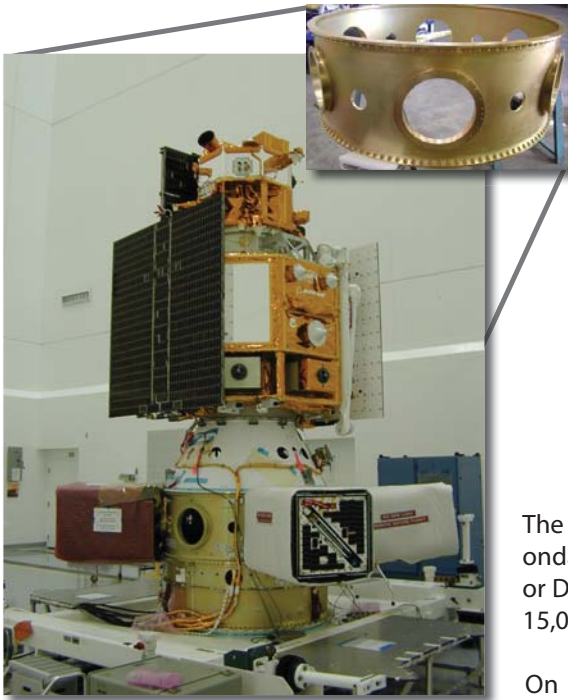


# ESPA: The EELV Secondary Payload Adapter

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.

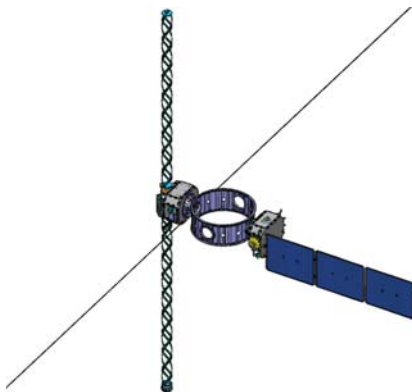
On March 8, 2007, ESPA enabled the STP-1 Mission on Atlas V launch from Cape Canaveral.



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 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).



DSX ESPA

■ 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



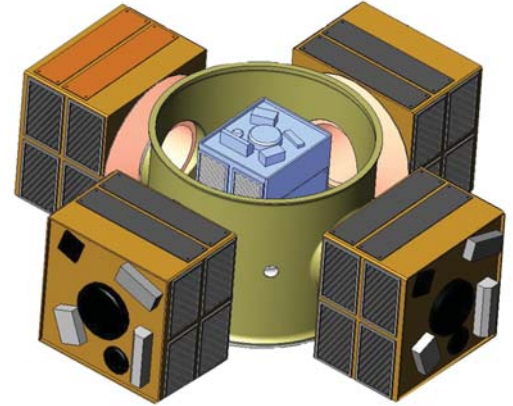
38.8-inch ring  
8- or 15-inch ports  
for Minotaur 4, Delta 2,  
Falcon 1e, Taurus

## 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



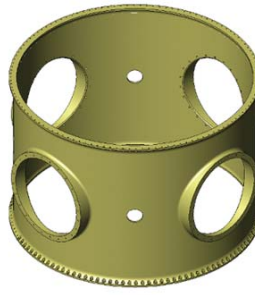
SL ESPA 24



DSX ESPA

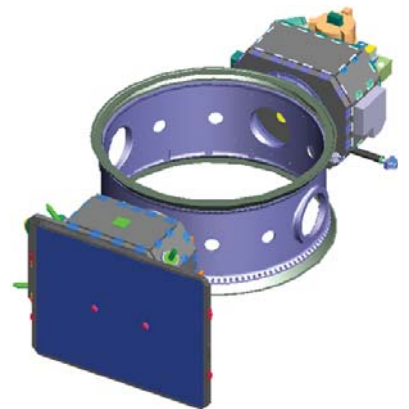


DSX ESPA w/ deck



ESPA Grande 42

# SoftRide Vibration/ Shock Isolation



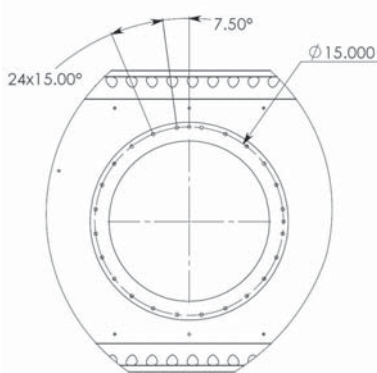
SoftRide OmniFlex provides  
reduced launch environment for  
DSX modules



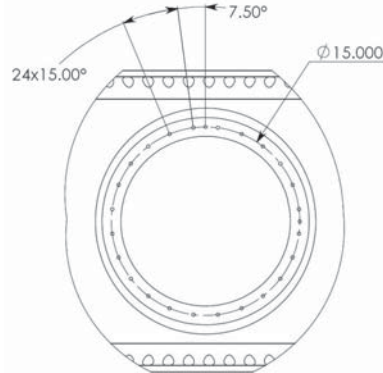
ShockRing for FalconSat 3  
on STP-1 launch

# Standard Secondary Spacecraft Interface

15-inch-diameter bolt circle, 24 fasteners



Flanged Port



Boss Port

**ESPA Contact Information**  
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