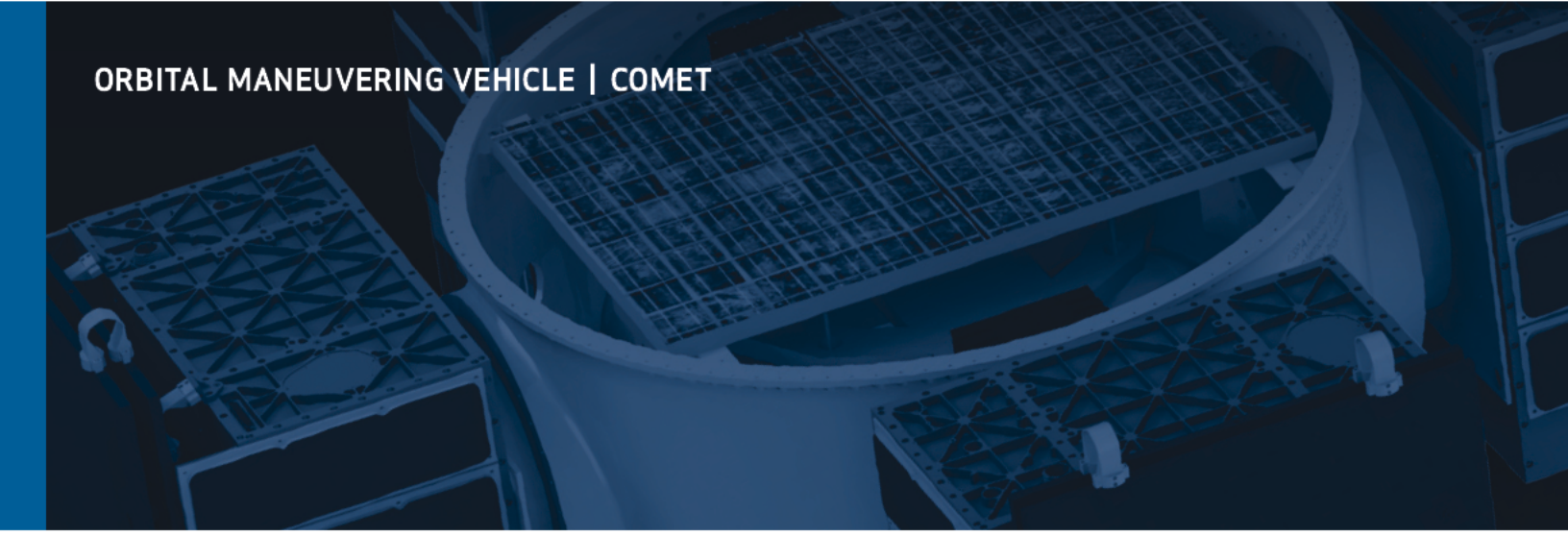
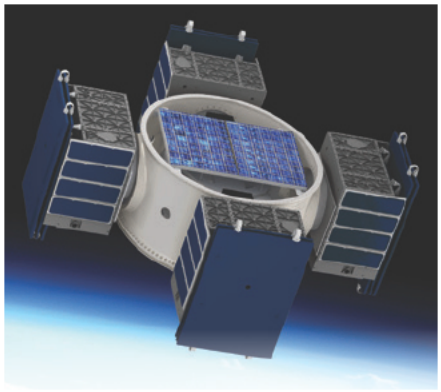
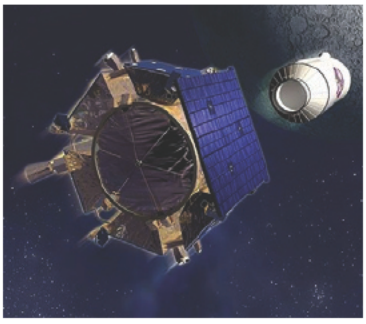


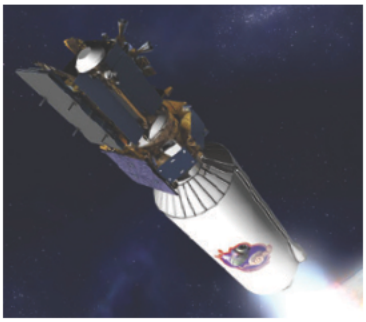
# COMET

## COMMERCIAL ESPA TUG



The COMET is a propulsive tug for secondary payload deployment based on the Moog EELV Secondary Payload Adapter (ESPA) ring. The COMET is designed to launch on EELV-class launch vehicles (Atlas V, Delta IV, Falcon 9) while supporting up to 1500 kg of secondary payloads with a variety of standard separation systems. The COMET can be used to disperse small satellite constellations, act as a Hosted Payload platform, or deliver a single spacecraft to it's ideal orbit. The COMET has its own avionics, power, propulsion, and communications systems that are configurable for short durations up through multi-year missions in a wide range of orbits.





MOOG

# COMET

The COMET enables small satellites to launch on rideshare missions and achieve their ideal orbit with minimal affect on the primary spacecraft.

## POTENTIAL LAUNCH CONFIGURATIONS

- Below a primary payload
- As part of a multi-manifest stack with other adapters and spacecraft
- As an upper stage or tug for a primary spacecraft or stack of ESPA rings

## MISSION APPLICATIONS

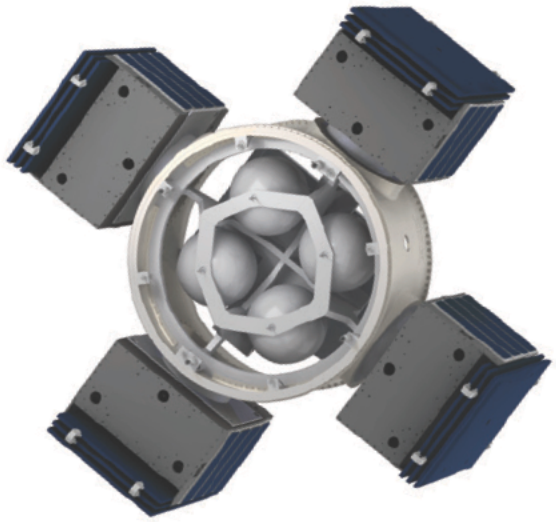
- Secondary Payload Tug
- Hosted Payload Platform
- Technology Demo Platform
- Comm Relay for Small Sat applications
- Science Mission Platform

## VERTICAL INTEGRATION

The COMET draws from Moog's extensive experience in structures, spacecraft avionics, in-space propulsion,

**SPECIFICATIONS**

| Parameter | Performance |
|---|---|
| Total Impulse | 349 kN-sec (78,500 lbf – sec) |
| Thrust (Nominal) | 4 x 22 N (4x5 lbf) |
| Propellant Type | Hydrazine (4:1 Blowdown) |
| C&DH + EPS | Integrated Avionics Unit (IAU) |
| Attitude Control | 3-Axis Stabilized<br>Control < ±1°<br>Knowledge < ±0.1° |
| Communications | User Configurable<br>Baseline X-band up to 100 Mbps |
| Orbital Lifetime | Up to 3 years in LEO |
| Dry Mass (w/out Payloads) | 348 kg (767 lbm) |
| Wet Mass (w/out Payloads) | 501 kg (1105 lbm) |
| Payload Mass | Up to 1500 kg (3307 lbm)<br>depending on port size and quality |
| Nominal ESPA Ring Height | ≥32" (42" ESPA Grande option) |
| Payload Interface | 12xØ11.7", 6xØ15", 4xØ24", 5xØ24",<br>Customizable Four Point Mount & Others Available |
| Example Mission Scenario | Total Payload Mass: 5 x 300 kg – 1500 kg<br>Total Delta-V: 180 m/s<br>**CONOPS**<br>1.) COMET drop-off at 450 km SSO<br>→ Release 300 kg payload<br>2.) COMET maneuvers to 550 km SSO<br>→ Release 300 kg payload<br>3.) COMET maneuvers to 650 km SSO<br>→ Releases three (3) payloads<br>4.) COMET de-orbit burn to 250 km x 650 km |

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