



NEO Surveyor

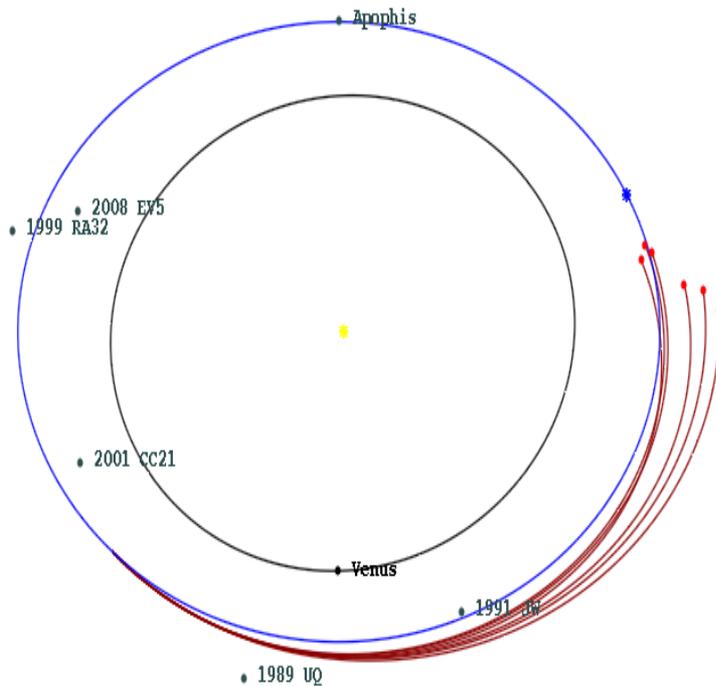
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NEO Surveyor Concept

2015/02/10 00:00:00.0000 UTC



- **Can launch as a secondary payload**
- **Launch flexibility for rendezvous with any target between Venus and Mars**
- **No launch date restrictions**
- **< 3 year mission time**
- **2-4 spacecraft in Discovery budget**
- **Single string, block redundant**
- **All previously flown components**
- **SEP with gravity assists**

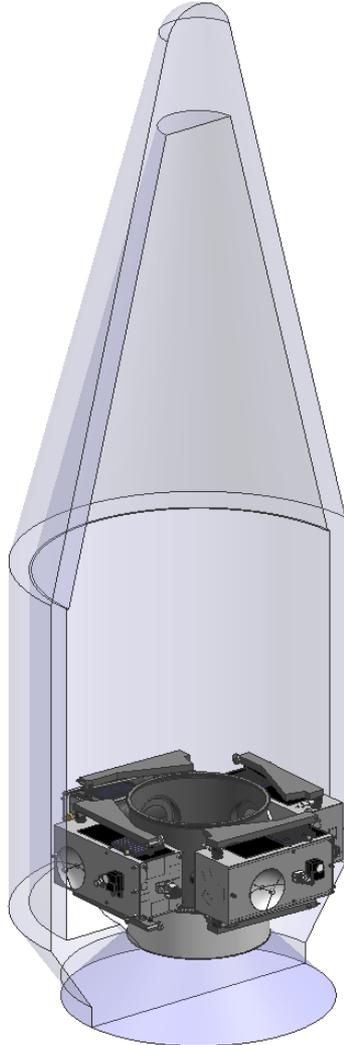


Movie



Launch Configuration

Shared Launch



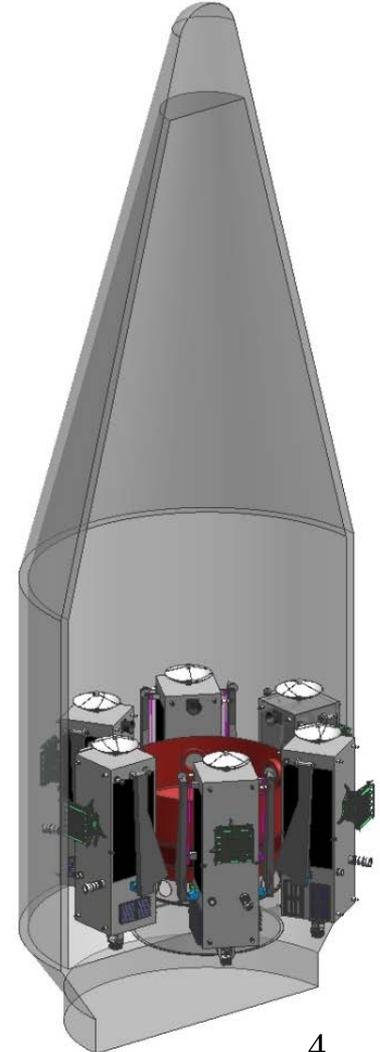
Shared Launch

- Maximum 4 spacecraft
- Dispensed from ESPA Grande ring adaptor
- Can launch anytime to target by using lunar gravity assists

Dedicated Launch

- Maximum 6 spacecraft on Atlas V
- Maximum 4 spacecraft on Falcon 9
- Can launch anytime to target

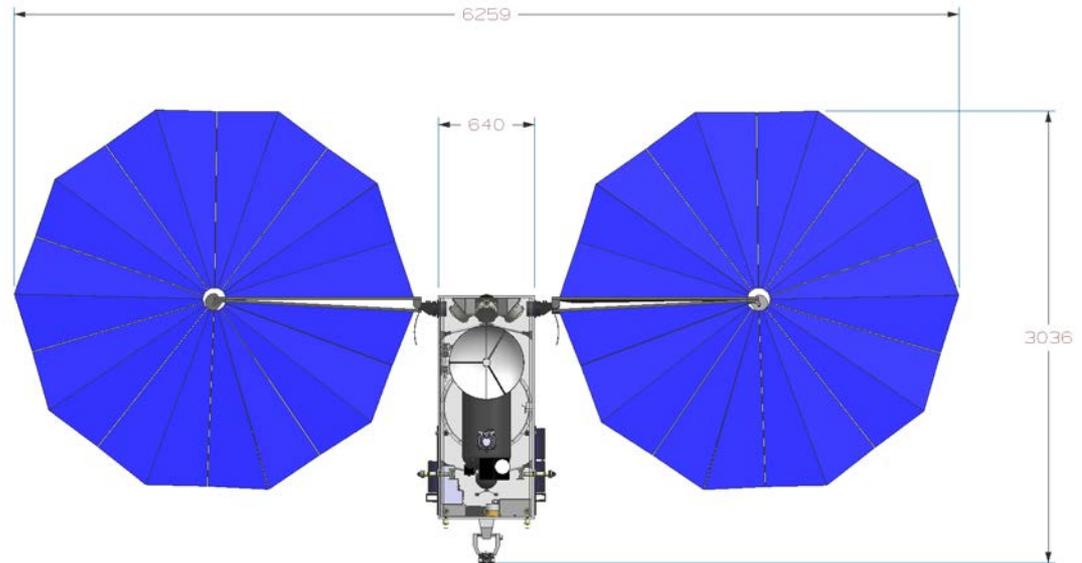
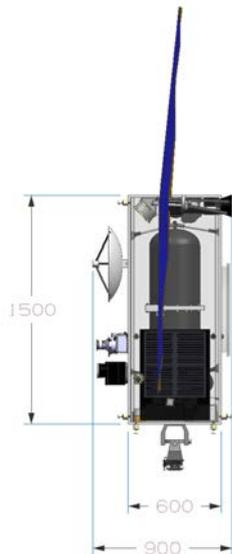
Dedicated Launch





Surveyor Spacecraft Performance

Propulsion	Delta v capability (300 kg wet mass) > 4 km/s
Power	> 2 kW at 1 AU from the Sun
Telecom	> 15 kbps at 2 AU from Earth
Payload	< 30 kg mass allocation for instruments
Control	Pointing stability < 0.03 deg/s





Heritage Spacecraft Components



MBSAT GD xenon tank



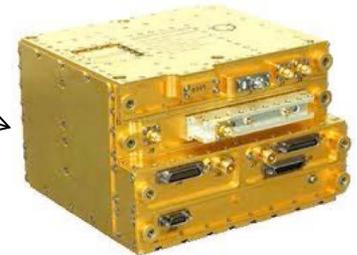
MBSAT Fakel Hall thruster

Phoenix ATK Ultraflex solar arrays



Dawn JPL High Voltage Electronics Assembly

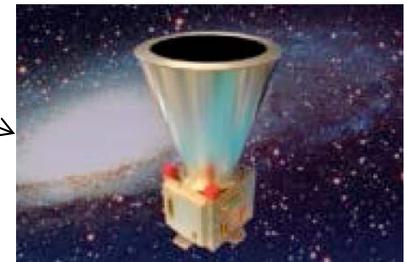
MRO GD Small Deep Space Transponder



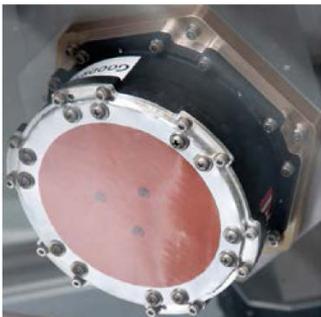
Tacsat 2 BRE avionics



PROBA 2 Galileo Star Tracker



Grail Goodrich Reaction Wheels

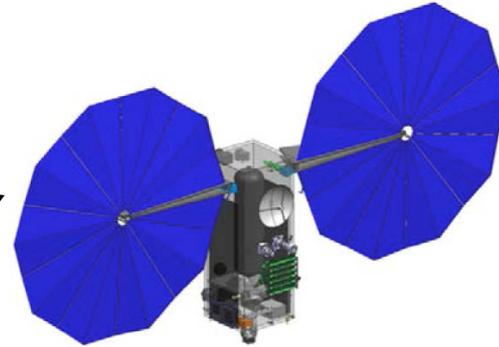




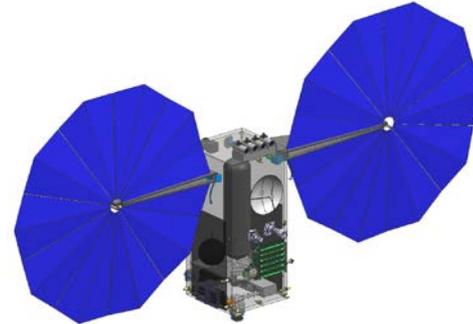
Payload Options

Trade Parameters
 Δv - Payload Mass - Trip Time

Multibody rendezvous with large imager suite



Multibody rendezvous with imager suite, small surface payload, and longer mission time



Single body rendezvous with imager suite and radar payload

