Solar Electric Propulsion for primary propulsion is sufficient to orbit a Rover.
- Near-Earth Solar-orbit or L2
- Single launch (both craft) onboard Atlas II AS

Below, the E- and D-class occulters do not need the entire side of the screen facing the telescope. It shades the entire side of the screen facing the telescope.

MLI screen construction emphasizes:
- Propulsion Module on boom(s) minimizes contamination & interference.
- Xenon propellant tanks stored in bus.
- Solar arrays (GaAs @ 18% BOL)
- Control thrusters mounted on Bus & Propulsion Module.
- 3-axis stabilization for stationkeeping, maneuvering, & transits.

 control block diagram showing a scheme for controlling the relative range between the occulter and the target.  Imaging of the occulter against the background stars by cameras onboard the telescope allows the occulter to be appropriately positioned.

Above is a close-up of the propulsion booms, which are flexible and can be deployed to place the spacecraft in the desired orientation. Folding rigid booms allow the spacecraft to be compactly stored for launch.

UMBRAS/SPIDER Features:
- Occulting the Star.
- Controlled 1-time unfurling of Screen & Propulsion Boom Deployment
- 'Curtain track' to create larger screen from support.
- Sun Shade shields screen from direct solar exposure during observations.
- Screen/Pedestal articulates for:

Different sized missions use different sized launchers. The launch packaging diagram shows the required mass and power budgets for three different mission classes:
- E-Class (Explorer) ~ 1 m Aperture, ~5-8 m Diameter, ~1+ years duration
- D-Class (~ 4 m Aperture, ~0.8 m Diameter, ~1.2 years duration
- N-Class (Near-Earth) ~ 4 m Aperture, ~0.4 m Diameter, ~1.2 years duration

The transit configuration allows simpler control of the spacecraft. The diagrams above show the extent of translational and rotational control available for different mission states.

Propulsion:
- NSTAR @ 92 mN (4 units) 120 kg (~0.6 kW)
- ACS (16 UK-10 @ 25 mN) ~ 120 kg (4 x 0.7 kW)

Arrays:
- Characteristic Solar Array and Bus Sizes for SPIDER in various mission classes:
  - E-Class 4 x 0.8 m
  - D-Class 4 x 0.4 m
  - N-Class 1.2 x 1.2 m

Communications:
- Orient occulter toward next Target-Telescope Line-of-Sight.
- Acceleration toward next Target-Telescope Line-of-Sight.
- ... to a halt.
- Alignment of Occulter along Target-Telescope Line-of-Sight.
- Articulate screen into observing configuration.

Launch Packaging
- Launch mass:
  - 356 kg
  - 986 kg
  - 20 kg

Mass & Power Budget:
- Best guess upper limits on the mass and power budgets for 3 different sized UMBRAS Occulter mission classes.