



# Persephone Lunar Module

## Mission Objective

- Supports initial Artemis missions on the lunar surface
- Focuses on developing a hopper using a suborbital trajectory
- Hopper will deliver emergency support to habitable mobility platforms in otherwise inaccessible areas of interest

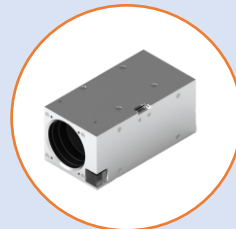
## Guidance & Navigation

- Attitude measurement provided by:
  - 2 Honeywell IMU (consisting of RLG)
  - 2 Sagitta star tracker
- Attitude adjustment carried out by:
  - 6 Coupled LOX&CH4 thrusters for major adjustments
  - 4 Reaction wheels offer fine error adjustments
- SPLICE allows for precision landing and hazard detection

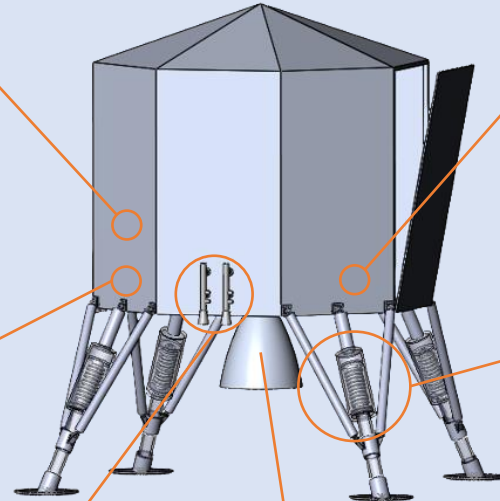
## Structures & Mechanics



Honeywell IMU



Sagitta Star Tracker

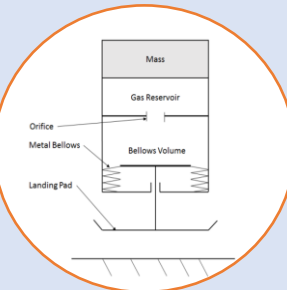


RCS Thrusters for attitude control

Morpheus Main Engine Thruster



SAR 10199 Lithium-Ion Battery



Metal bellows shock absorbing system on module legs to dampen landing forces on primary structure

## Electrical

- Store and distribute 7.4 kW of power
  - 2 SAR 10199 Lithium-Ion Rechargeable Aerospace Batteries
- Actuator oriented solar array
  - Moog Type 2 Solar Array Drive
  - XTE Prime LILT Solar Cells
- Sequential Maximum Power Tracking bus regulation
  - Direct connection to cells and batteries

## Environmental

- Multi Layer Insulation
- Radioisotope Heating Units
- Cold Plate/Radiator/Louvre Passive Cooling System

## Propulsion

- CH4/LOX Propellant Source
- Autogenous Pressure Feed System
- Morpheus Main Engine:
  - 18.7 KN thrust, 321 ISP

## Anticipated Mission Timeline with Start Dates

