

# GATEWAY'S UNIQUE ORBIT



There are many ways to orbit the Moon. Gateway will travel in a **near-rectilinear halo orbit** to support missions to the lunar surface and serve as a staging point for exploration farther into the solar system, including Mars.

## NEAR-RECTILINEAR HALO ORBIT (NRHO)

### ACCESS

Easy to access from Earth orbit with many current launch vehicles; staging point for both lunar surface and deep space destinations

### ENVIRONMENT

The deep space environment is useful for radiation testing and experiments in preparation for missions to the lunar surface and Mars



### SCIENCE

Favorable vantage point for Earth, sun and deep space observations

### COMMUNICATIONS

Provides continuous view of Earth and communication relay for lunar farside

### SURFACE OPERATIONS

Supports surface telerobotics, including lunar farside; provides a staging point for planetary sample return missions

## ORBIT TYPES

### LOW LUNAR ORBITS

Circular or elliptical orbits close to the surface; excellent for remote sensing, difficult to maintain in gravity well.

» Orbit period: 2 hours



### DISTANT RETROGRADE ORBITS

Very large, circular, stable orbits; easy to reach from Earth, but far from the lunar surface

» Orbit period: 2 weeks



### HALO ORBITS

Fuel-efficient orbits revolving around Earth-Moon neutral-gravity points

» Orbit period: 1-2 weeks