# **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)**

**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



Favorable vantage point for Earth, sun and deep space observations

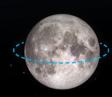
#### **COMMUNICATIONS**

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