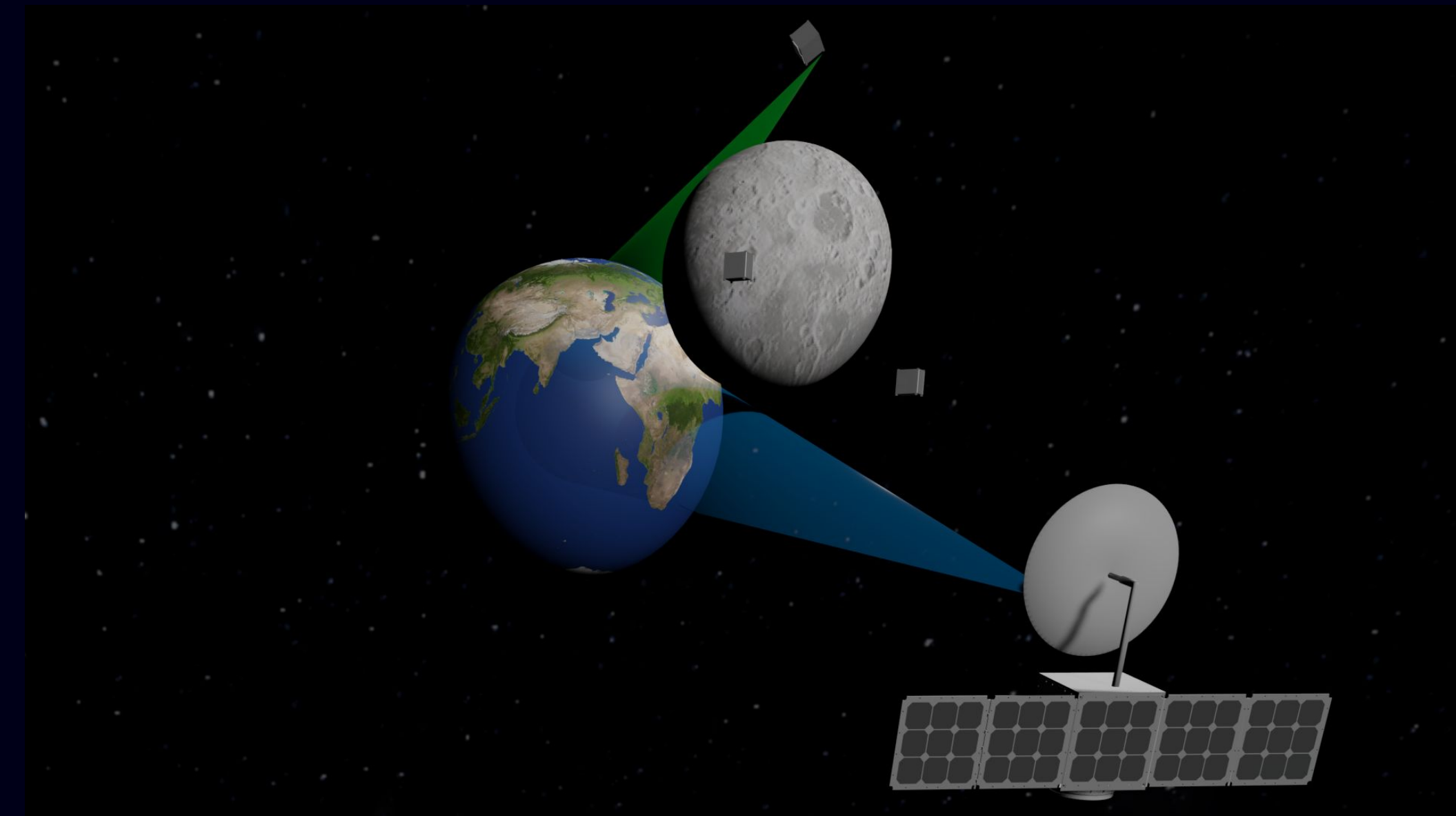


# Using Small Satellites as an Interplanetary Data Highway

**Objective:** To enable seamless communication between Lunar Surface based systems and Ground stations on the Earth, using a Data relay satellite placed in orbit at the Earth-Moon L2 Lagrangian point.

**System:** Includes the P30 Platform in a Halo orbit at the Earth-Moon L2 point, with a network of 1U CubeSats deployed in Lunar orbit at different orbital planes.



	P30	1U
<b>System</b>		
Mass	10 kg (without Payload)	<2kg
Power	up to 90 W (deployable panels)	~6-10 W (deployable panels)
Volume	300 x 300 x 300 mm (stowed)	100 x 100 x 113 mm
<b>Key Platform Performance Characteristics</b>		
Attitude Control		
Attitude Control System	Active Control System with Reaction Wheel Control	Active Control System with Reaction Wheel Control
Orbital Maneuvering	Electric Propulsion (higher delta V)	Electric Propulsion
Pointing Knowledge, 3σ	<0.03 deg per axis	<0.1 deg per axis
Total pointing accuracy, 3σ	<0.07 deg per axis	<1 deg per axis
Telemetry and Telecommand Payload Downlink	Can accommodate S- / X- / Ka-band transmitter with deployable antennas Compatible with NEN, SN, DSN	Can accommodate S- band transmitter with patch antennas Compatible with NEN, SN, DSN
<b>Key Platform Interface Characteristics</b>		
Standard Payload Data Bus	RS-422	
Alternate Serial Bus Interface(s)	Ethernet, SPI, I2C, USB, CAN	
Payload Downlink	Data rates 1.2 kbps to 10 Mbps shall be accommodated	
Main Bus Voltage (Standard)	~8V Regulated to 5V, 4.2V, 3.3V and 1.2V	
Internal Temperature Environments	In-Orbit Temperature Range -10°C and +60°C	
<b>Payload additional Capabilities</b>		
<ul style="list-style-type: none"> <li>- Multi-spectral Imaging Payload for Lunar Surface navigation assistance</li> <li>- Gamma Ray and X-Ray Spectrometer for Lunar environment resource assessment and mineralogical mapping</li> <li>- Topography and Gravity measurement system on the Lunar Far Side using Laser Altimeters</li> </ul>		

