

MarCO

CubeSats to Mars in 2016

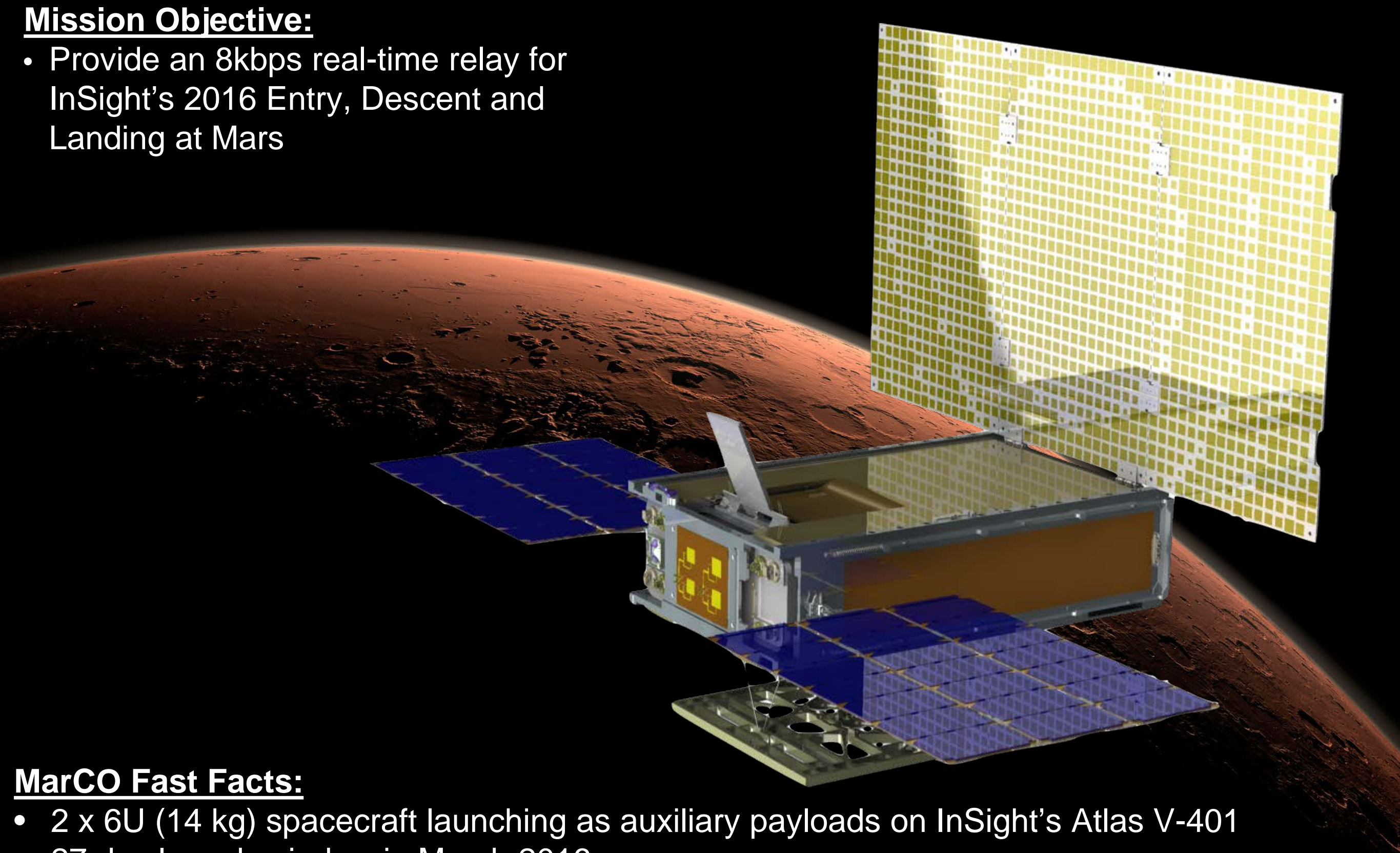


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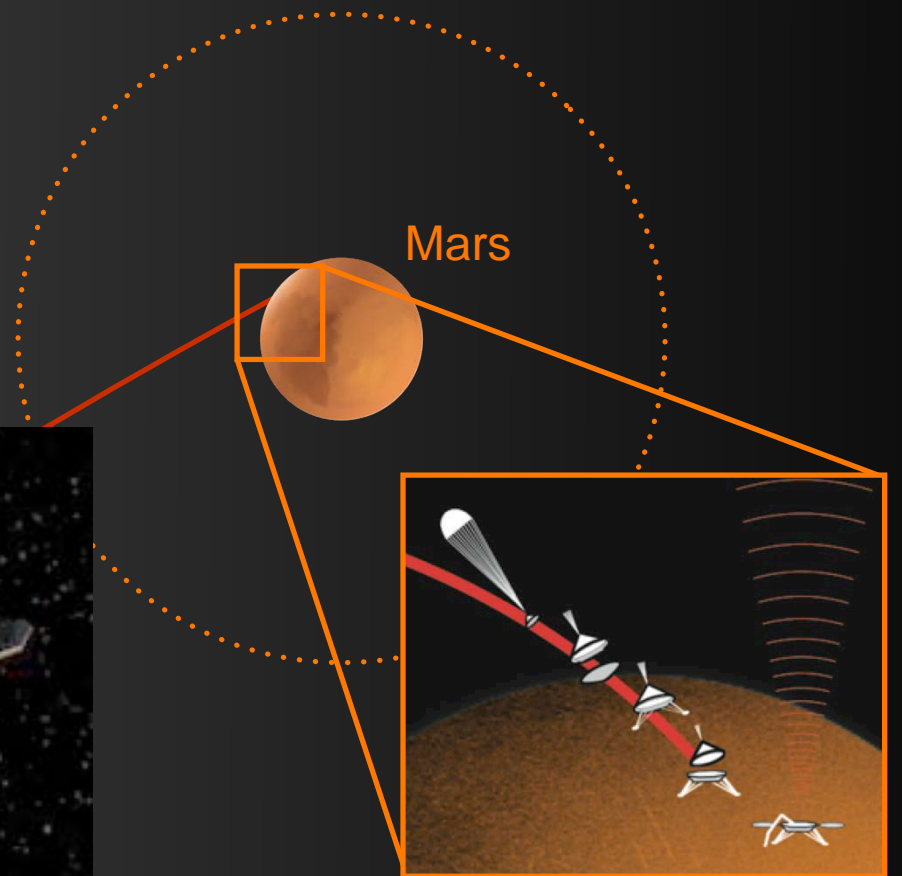
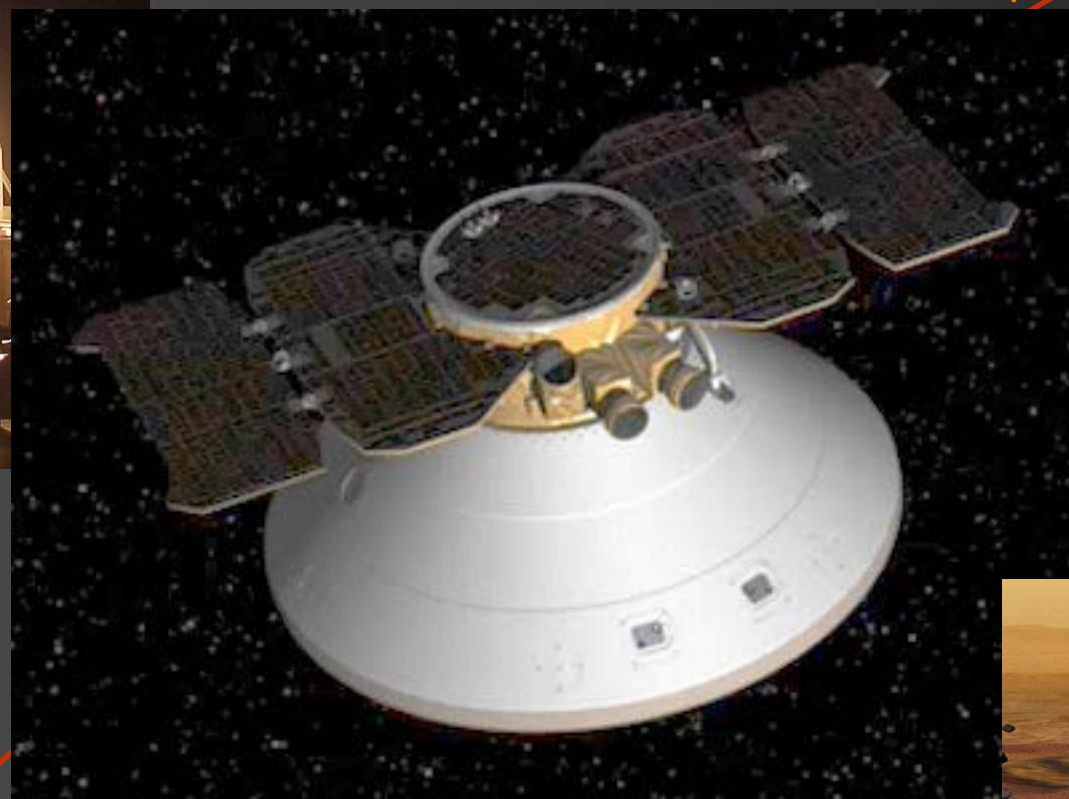
Mission Objective:

- Provide an 8kbps real-time relay for InSight's 2016 Entry, Descent and Landing at Mars

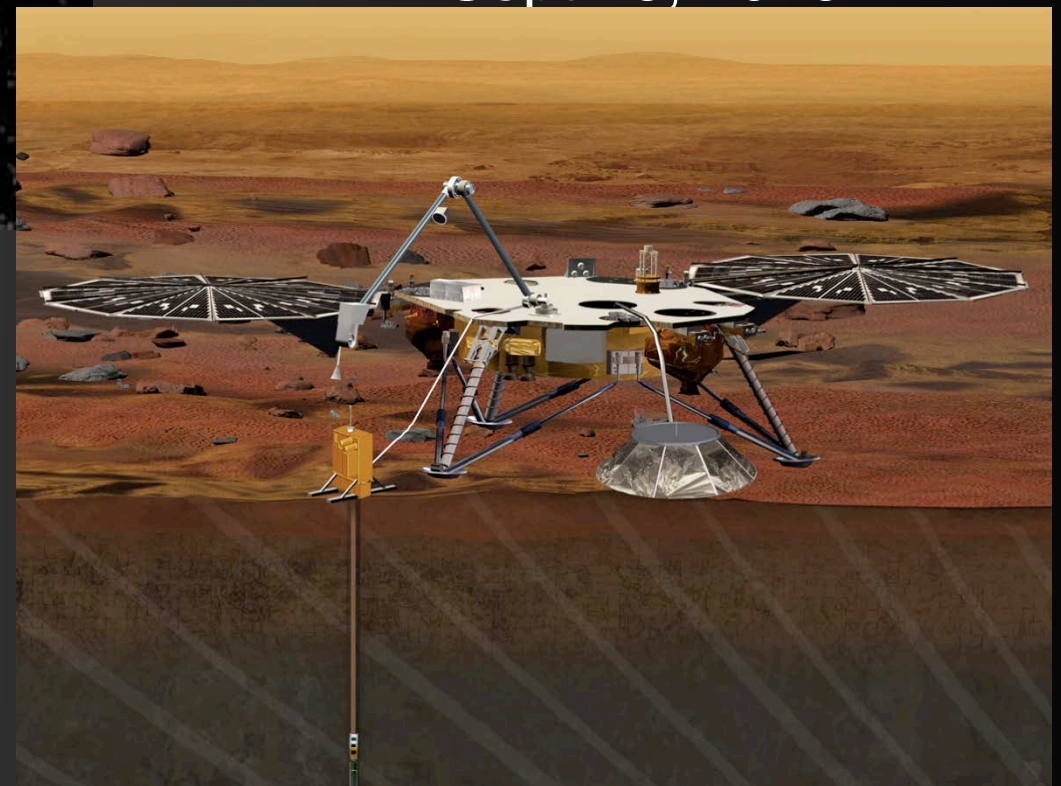


MarCO Fast Facts:

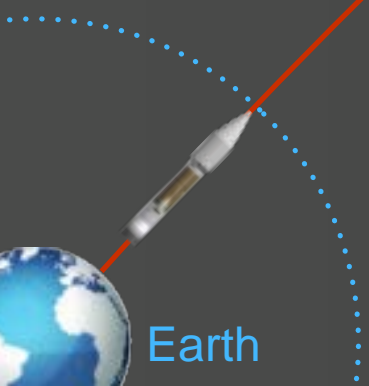
- 2 x 6U (14 kg) spacecraft launching as auxiliary payloads on InSight's Atlas V-401
- 27 day launch window in March 2016
- Separation approximately 95 min after launch
- 6.5 month cruise (157 million km) to Mars
- 5 Trajectory Correction Maneuvers to establish Mars-flyby heliocentric orbit
- Flying by Mars September 28, 2016



Entry, Descent, and Landing
Sept 28, 2016

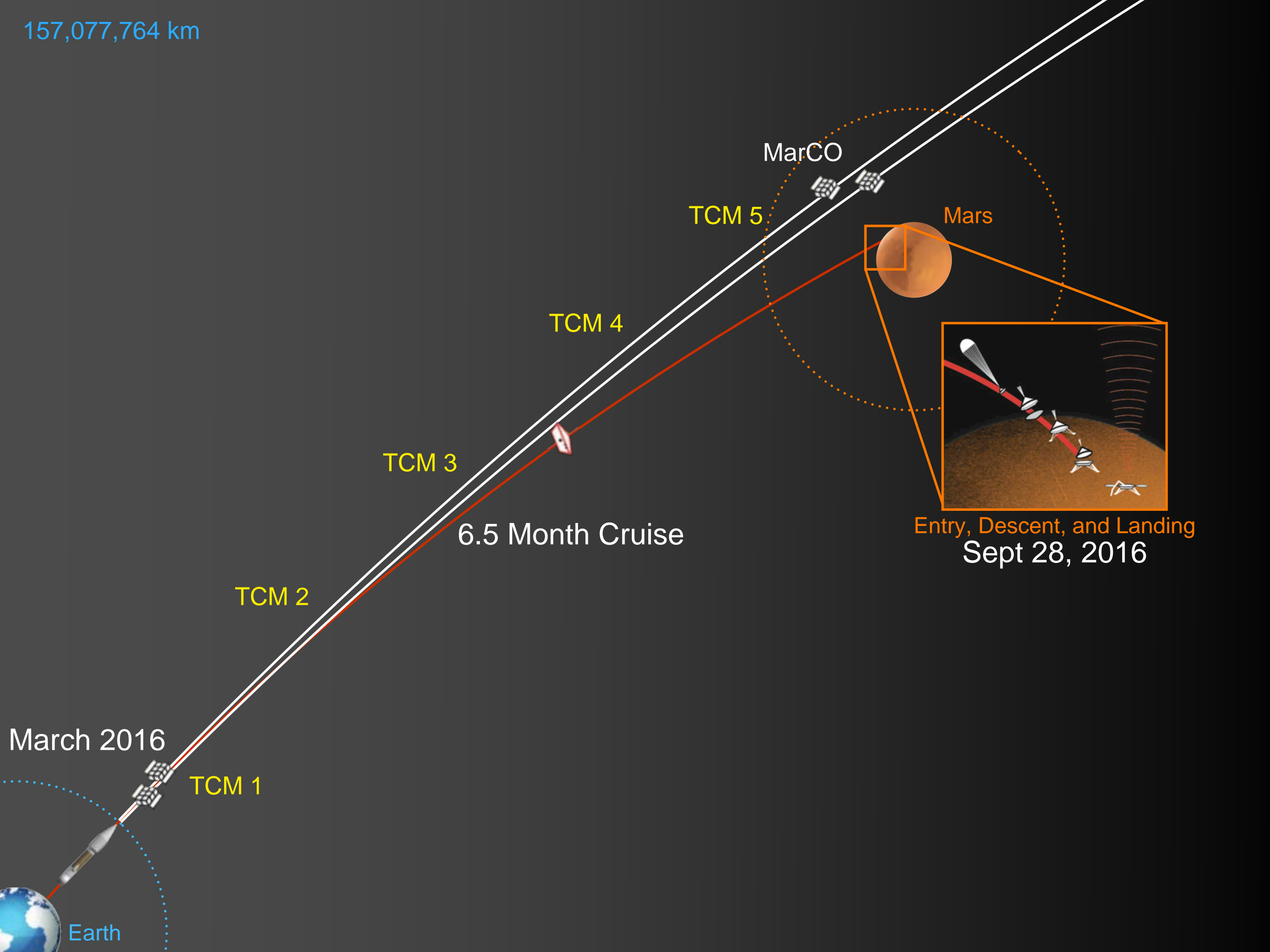


March 2016



Earth

157,077,764 km



MarCO

TCM 5

Mars

TCM 4

TCM 3

6.5 Month Cruise

TCM 2

TCM 1

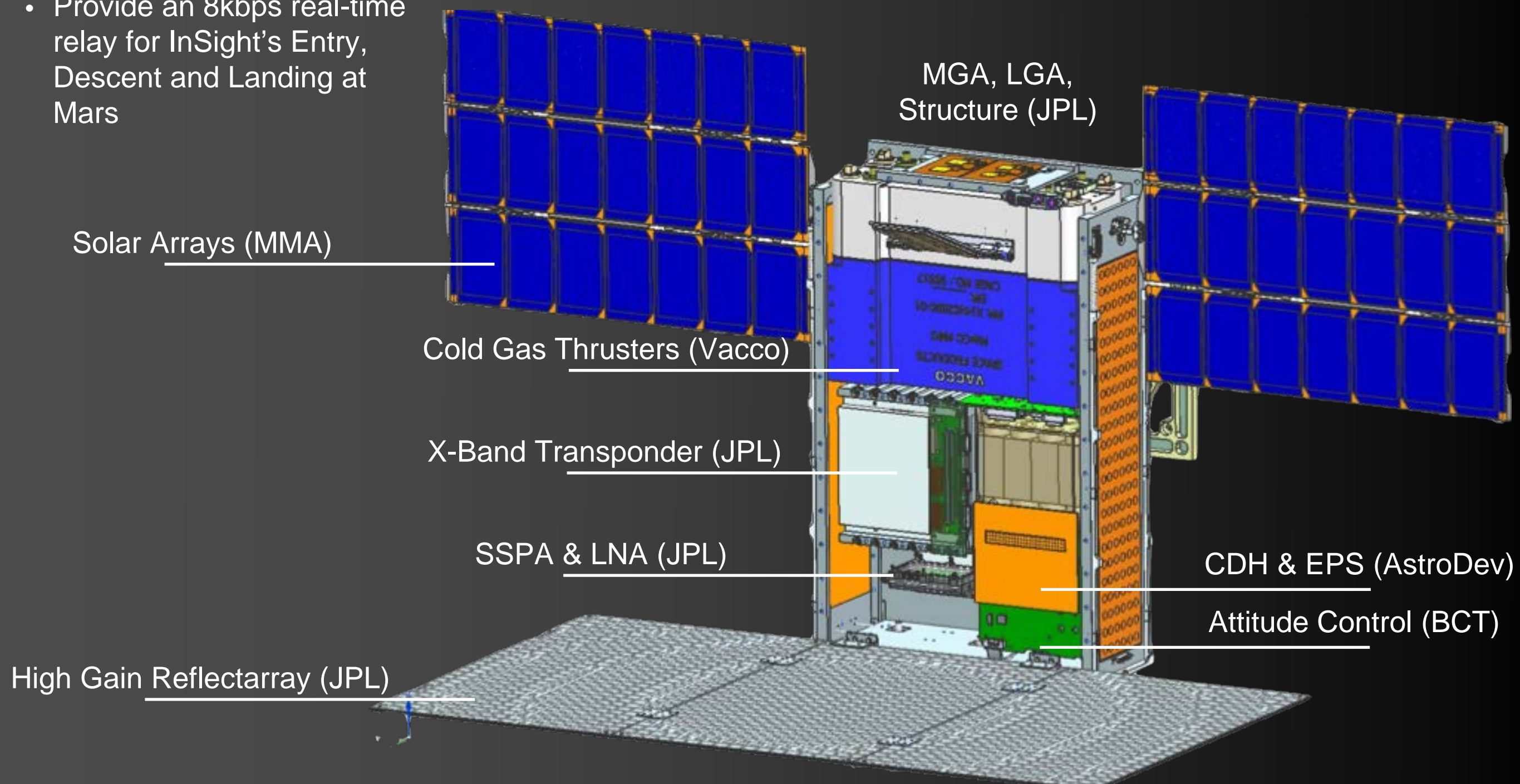
March 2016

Earth

Entry, Descent, and Landing
Sept 28, 2016

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MarCO Overview:

Volume: 2 x 6U (10x10x30cm)

Mass: 14.0 kg

Power Generation:

Earth: 35 W

Data Rates: 62-8,000 bps

Delta-V: >40 m/s

Software:

FSW: *protos* (JPL)

GSW: *AMPCS* (NASA/JPL)

I&T:

In-house S/C I&T, testing,

Tyvak NLAS/Launch Integration

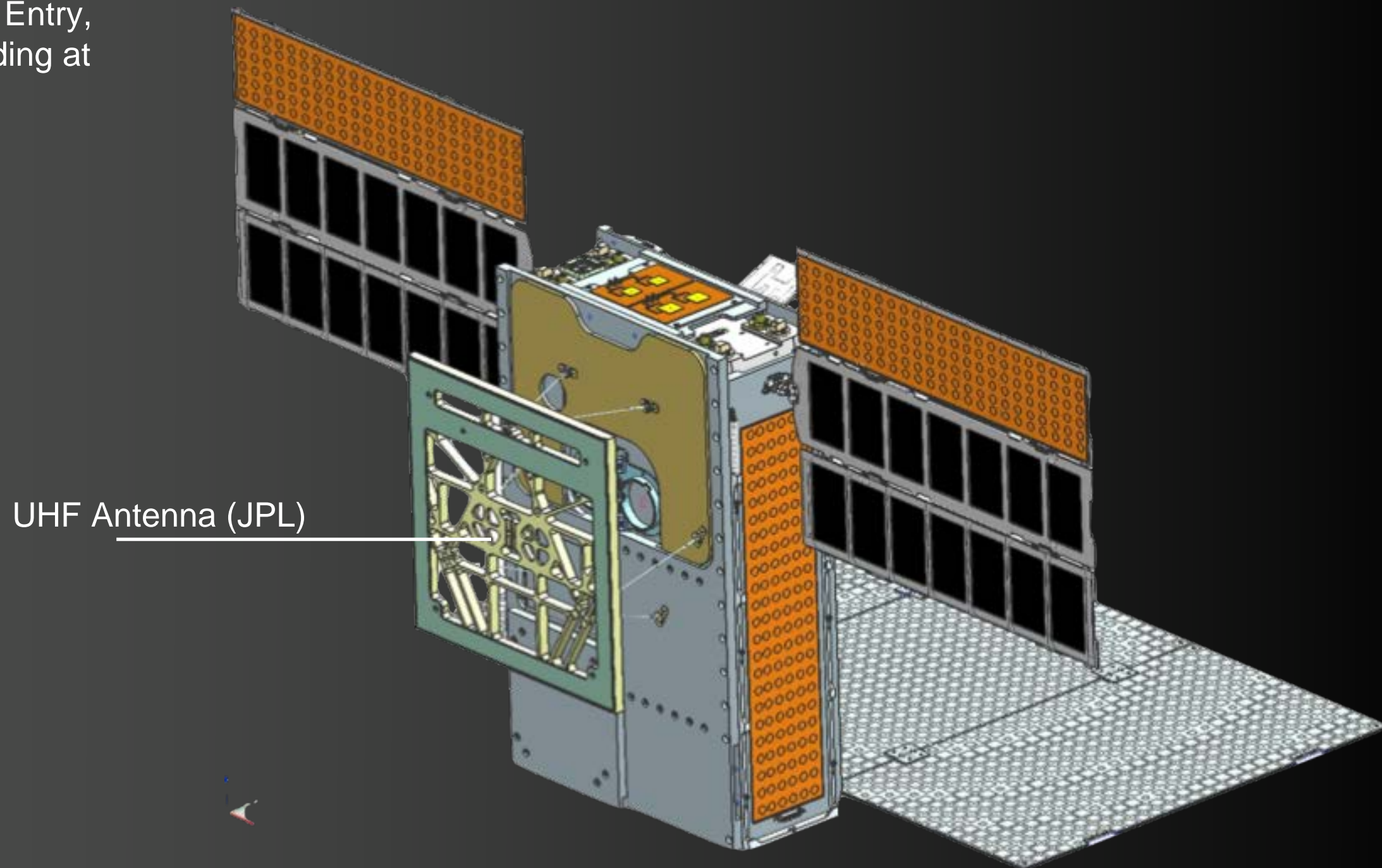
Operations:

Primary: DSN 34m

EDL: Madrid 70m

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Mechanical Fit Check

- Includes all external flight-like hardware
- Pre-validate NLAS-II Canister fit

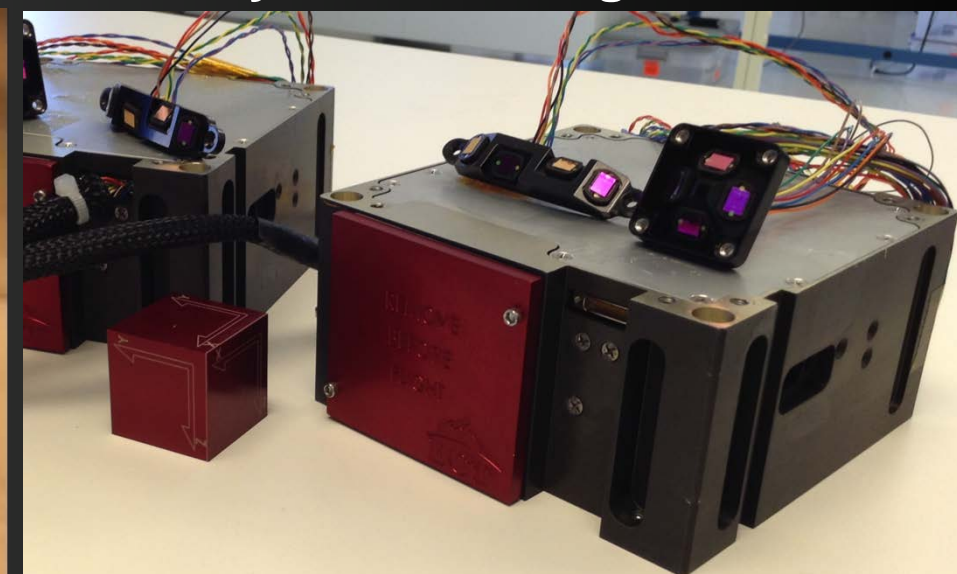
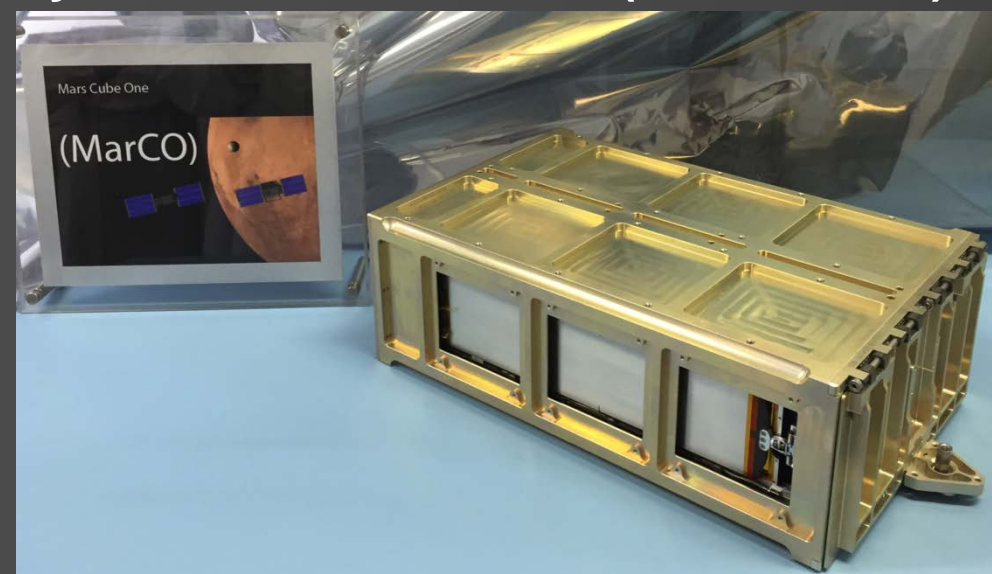
Thermal Blanket

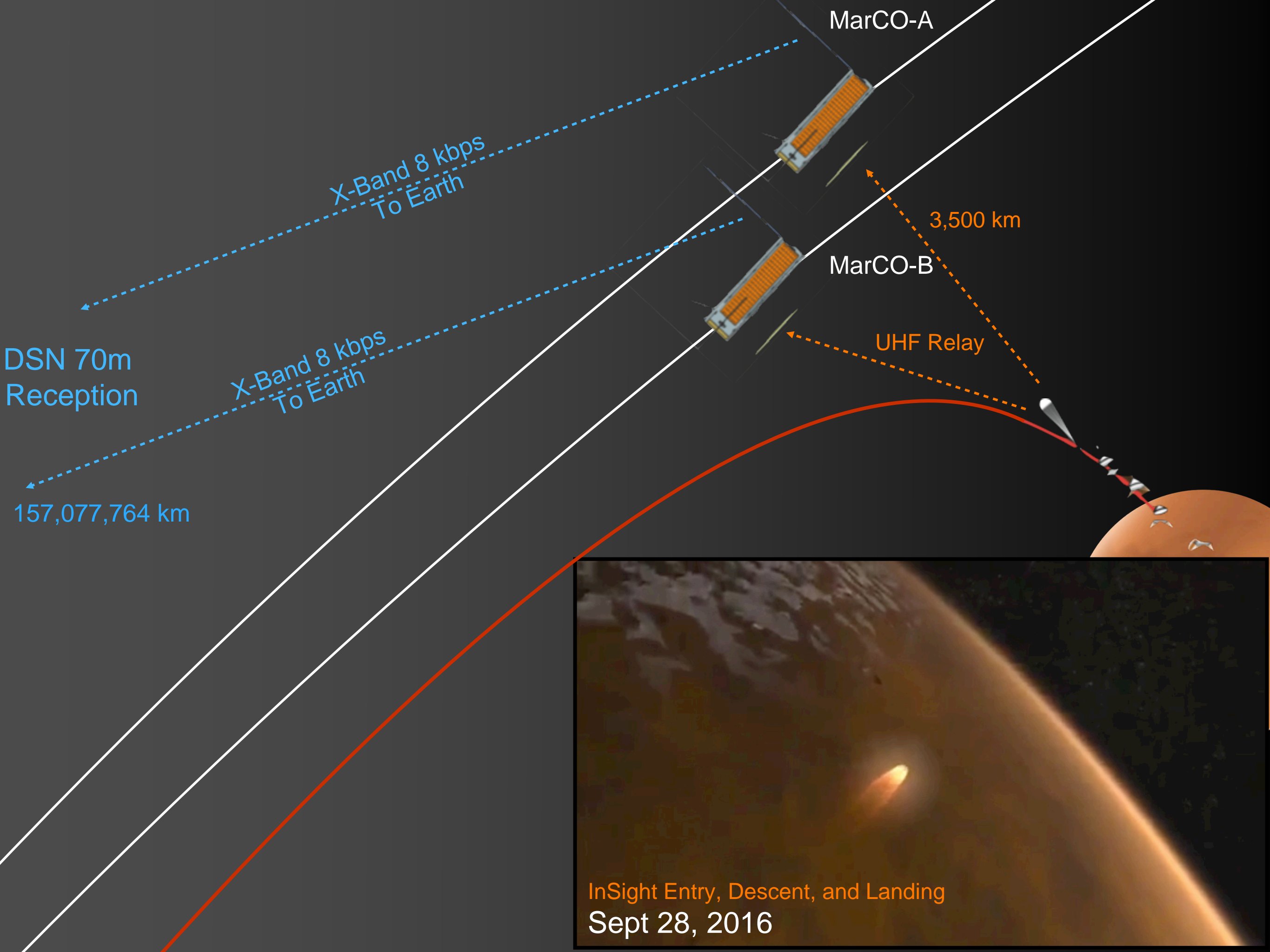
Thermal Radiator (JPL)

Tyvak NLAS-II Canister (with MarCO)

Vacco Thruster

Blue Canyon Technologies ADCS







CubeSats at Mars
Arriving 2016



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