

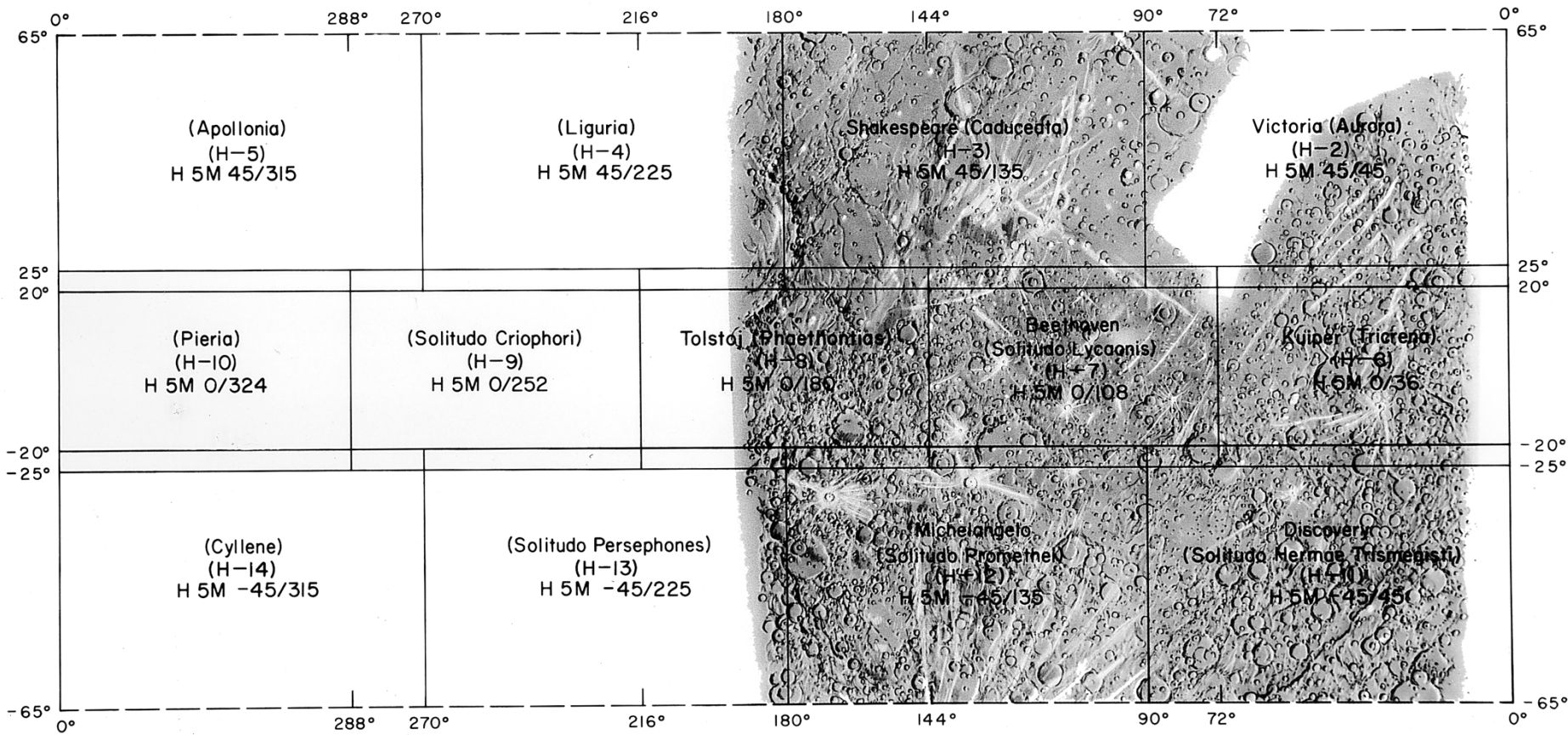
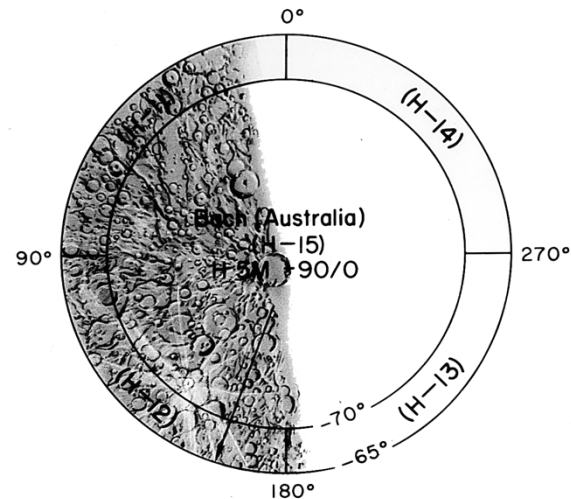
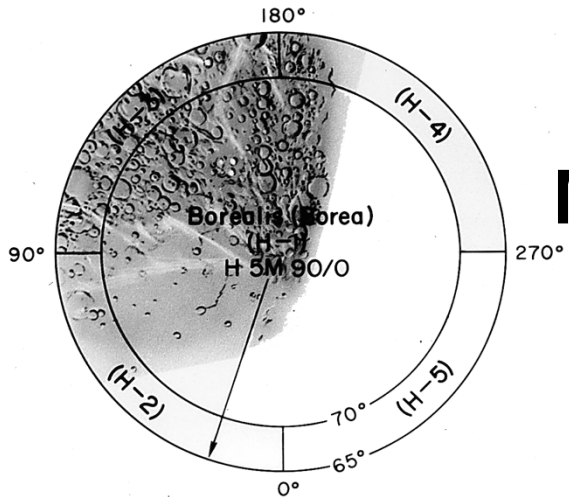


MESSENGER Views the Geology of Mercury

*Dr. Brett W. Denevi
Johns Hopkins University Applied Physics Lab*

*Deputy Instrument Scientist for the Mercury Dual Imaging System
on the Mercury-orbiting MESSENGER spacecraft*

Map of Mercury after Mariner 10 (1974-1975)

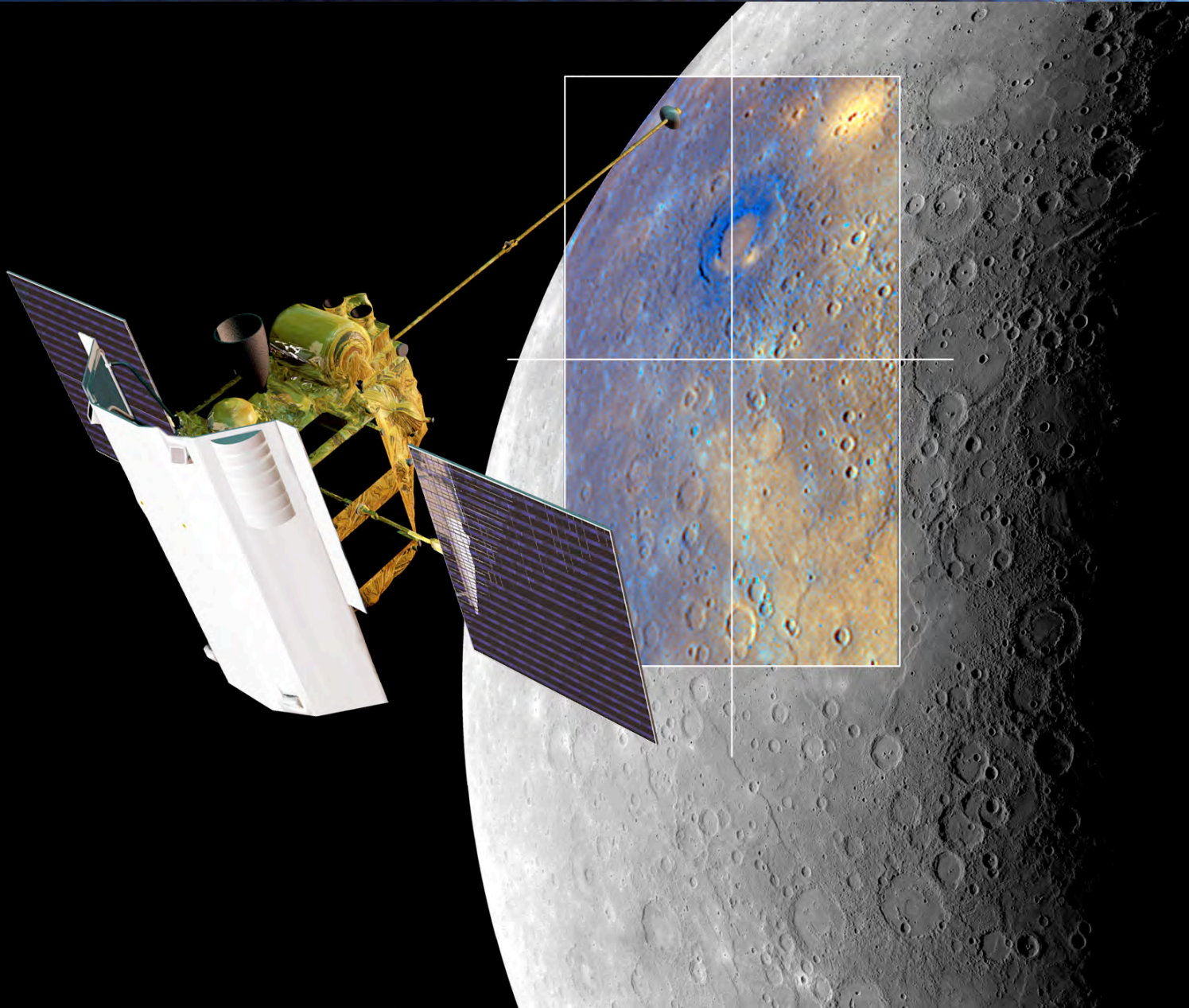




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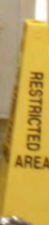
MErcury Surface, Space ENvironment, GEochemistry, and Ranging



It's not easy to become the first spacecraft to orbit Mercury

MESSENGER journeyed for >6 years, had 6 planetary flybys, and traveled > 4.7 billion miles!

**MESSENGER's
Journey to
Mercury**



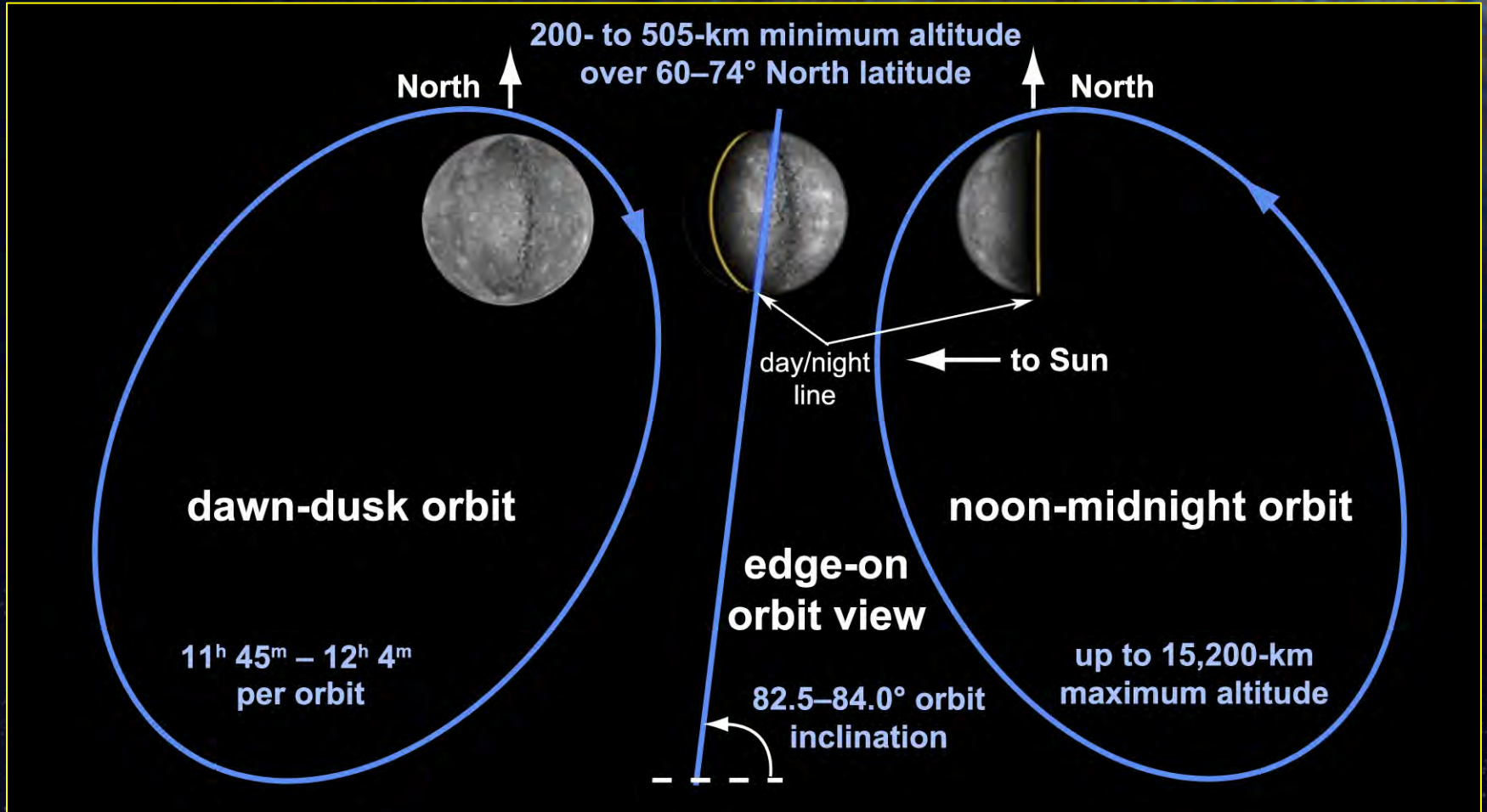
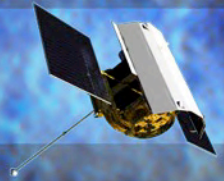




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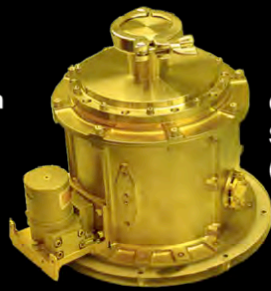
MErcury Surface, Space ENvironment, GEochemistry, and Ranging



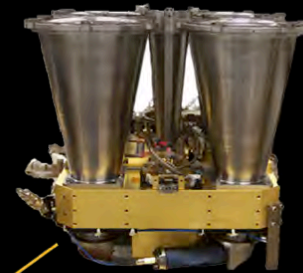
The planet is HOT! Spacecraft exposed to intense heat radiating from the planet when low over surface



Mercury Atmospheric and Surface Composition Spectrometer (MASCS)



Gamma-Ray Spectrometer (GRNS/GRS)



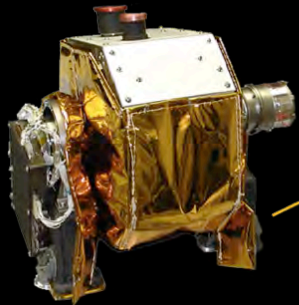
Mercury Laser Altimeter (MLA)



X-ray Spectrometer Solar Assembly (XRS/SAX)



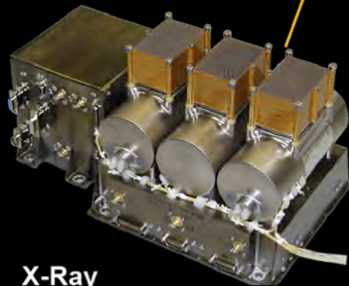
Fast Imaging Plasma Spectrometer (EPPS/FIPS)



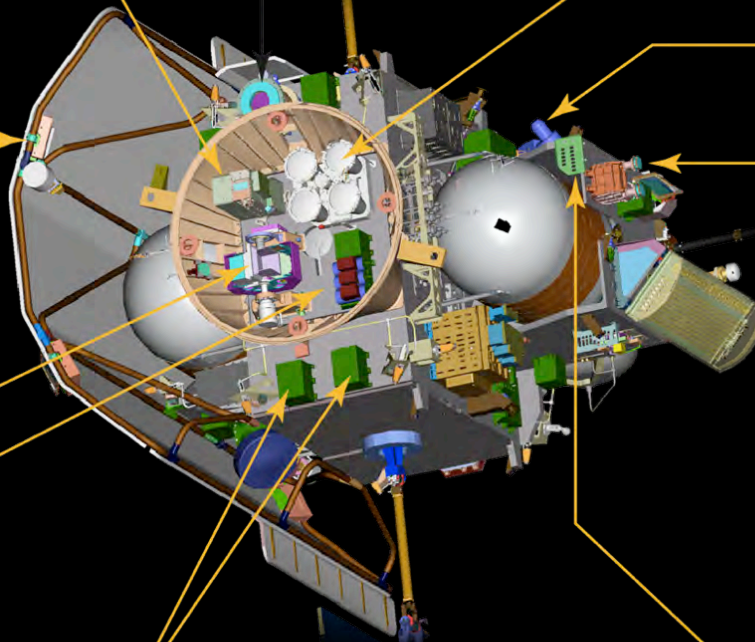
Mercury Dual Imaging System (MDIS)



Energetic Particle Spectrometer (EPPS/EPS)



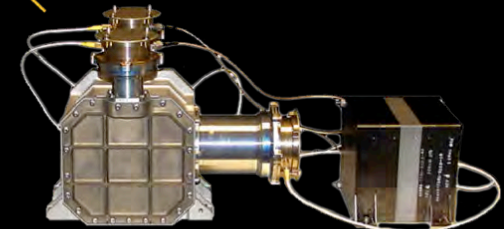
X-Ray Spectrometer Mercury Unit (XRS/MXU)



Data Processing Unit (DPU)



**Magnetometer (MAG)
[at end of boom not shown]**



Neutron Spectrometer (GRNS/NS)

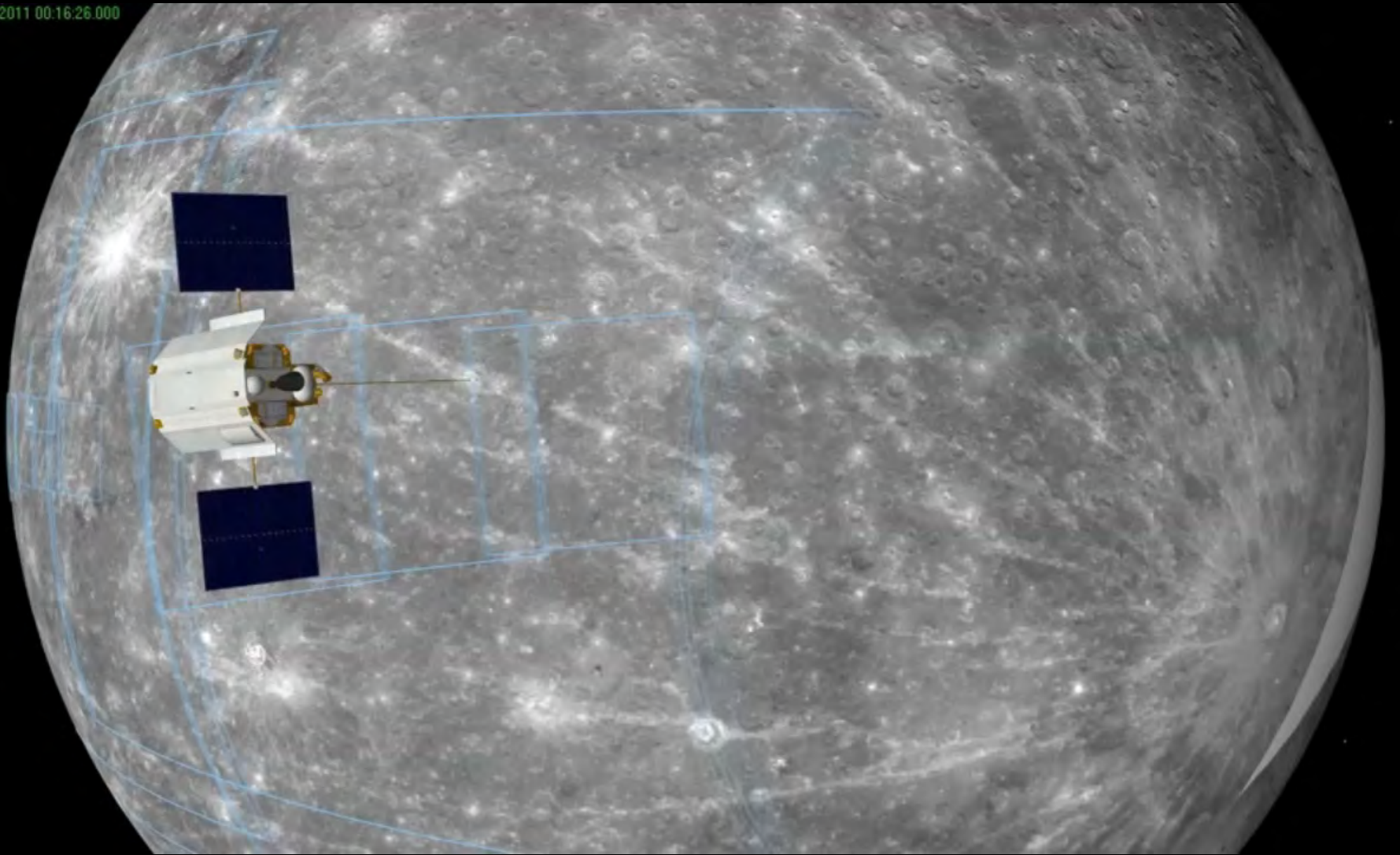
MESSENGER's first flyby
of Mercury

January 14, 2008

First image downlinked



5 Apr 2011 00:16:26.000

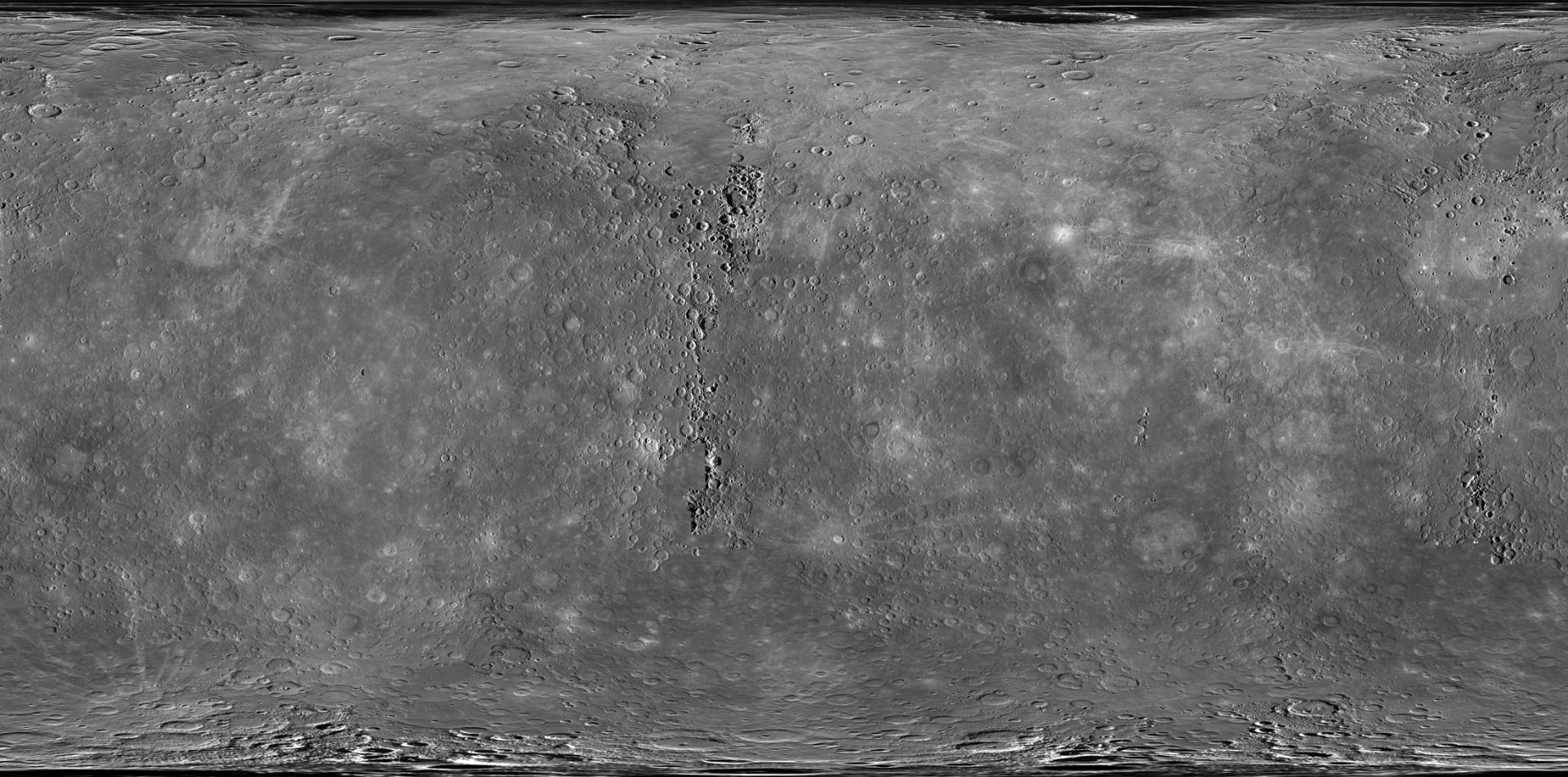
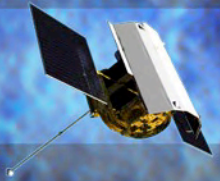




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