Planetary Science with JWST

Vision and Voyages for Planetary Science in the Decade 2013-2022
“...the Hubble Space Telescope has a long history of successful planetary observations, and this collaboration can be a model for future telescopes such as the James Webb Space Telescope.”

The Hubble Space Telescope and Planetary Science
- Discovery of moons around Pluto
- Highest resolution imaging of SL-9 plumes
- Discovery of new Kuiper Belt Objects (KBOs)
- Detailed studies of the atmospheres of the outer gas giants
- Long-term monitoring of the Martian atmosphere

The James Webb Space Telescope and Planetary Science
KBOs and Dwarf Planets
- Composition of surface ices and volatiles on a wide range of bodies in the trans-Neptunian region

Comets
- Near- and mid-infrared spectroscopy of cometary volatiles and organics
- Spectroscopic studies of the new class of icy comets in asteroid belt.

Planets and Moons
- NIR spectroscopy and imaging of Martian atmosphere
- Imaging and spectral characterization of the atmospheres of the outer solar system
- Monitoring of Titan methane cycle beyond the end of the Cassini mission.
JWST will Study Planets Both within our Solar System and Around other Stars

Uranus over wavelength ranges and sensitivities in the IR unmatched from the ground.

First spectra of the atmospheres of super Earths around nearby stars, unachievable from the ground.