EPSC Abstracts
Vol. 13, EPSC-DPS2019-340-1, 2019
EPSC-DPS Joint Meeting 2019
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EPSC
EPSC-DPS Joint Meeting 2019
15–20 September 2019 | Geneva, Switzerland

Hyperspectral Observer for Venus Reconnaissance (HOVER)

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Abstract

The Hyperspectral Observer for Venus Reconnaissance (HOVER) is a Venus orbiter for remote sensing of its clouds, chemistry, dynamics and surface. Its main goal is understanding the mechanics of the Venus climate. HOVER has the following science objectives: Dynamic meteorology of the cloud layer; Determine distribution of key absorbers and parent gases of the clouds; Characterize super-rotation and solar to anti-solar circulation and compare to observations; Regional rock mineralogy to infer the distribution of continental crust; Monitor for volcanic eruptions. The HOVER mission will address the following key questions:

1. How do convection and chemistry produce the global clouds?
2. Where and how is solar energy deposited?
3. How is energy transported by large-scale circulation?
4. What does Venus climate tell us about past climates?
5. How is Venus current climate impacted by current volcanism?

LASP provides the Project Management, Project Systems Engineering, Mission Management, Orbiter, Payload Integration, Mission Ops, instruments; Science Leadership and Science Data Center. **SwRI** provides the Project Scientist; **Uni-Köln** provides the Radio Occultation investigation.

This proposed mission would address the Decadal Survey priority questions for aqueous environments and life; current habitable environments; understanding climate change on Earth; and Solar System processes.



