

NASA Planetary Portfolio: Present and Future Plans

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NASA's Planetary Science Division (PSD) and space agencies around the world are collaborating on an extensive array of missions exploring our solar system. NASA has always encouraged international participation on our missions both strategic (i.e., Mars 2020) and competitive (i.e., Discovery and New Frontiers) and other Space Agencies have reciprocated and invited NASA participation in their missions.

In the case of Venus, NASA has made many investments in future capabilities and potential mission concepts. In particular, NASA has supported US scientists as part of the Akatsuki Participating Scientist Program and has funded technology development activities needed for future Venus missions under the HOTTech, PICASSO, MATiSSE, GEER, PSDS3, and New Frontiers Programs.

In planning for possible future missions, NASA supported the 2017 Venus Aerial Platforms study, held at the Keck Institute for Space Studies (KISS), which explored technical capabilities of several modern approaches for conducting science from within the Venus atmosphere. In 2018, NASA supported the 2018 Venus Surface Platforms study to explore long-lived surface capabilities. NASA has also received multiple proposals for Venus Mission Concept Studies under a recent research solicitation in preparation for the next Planetary Decadal Survey. Selected studies will produce reports that will be provided to the Planetary Decadal Committee for consideration.

In collaboration, IKI/Roscosmos and NASA established a Venera-D Joint Science Definition Team (JSDT) in 2015. Over the last four years, the JSDT has refined the Venera-D mission science goals, priorities, and architecture, and studied possible NASA contributed elements to enhance and complement the mission. The JSDT Phase I report was completed on January 31, 2017 and the Phase II report, was completed on January 31, 2019.

NASA is also collaborating closely with ESA on the proposed EnVision M-5 mission concept. Over the last year, NASA has been engaged with the EnVision Science Study Team, identified potential NASA contributions, and participated in concept studies conducted at ESTEC.

Partnerships with other space agencies have the potential to significantly increase the science return while limiting the cost to each partner. International partnerships are an excellent, proven way of amplifying the scope and sharing the science results of missions. NASA has always encouraged international participation on our missions and other Space Agencies have reciprocated and invited NASA investigators to participate in theirs. As Director of Planetary Science at NASA, I will continue to seek cooperation with our strong international partners in support of planetary missions, including Venus missions.