

Venera-D Science Definition Team Meets to refine the goals and possibilities for Venus studies

The architecture, possible scenarios, and scientific payload of a planned Russian mission to Venus were discussed on March 14-16 in Moscow, Russia, during the meeting of the U.S.-Russian Joint Science Definition Team (JSDT). The meeting was finalized with a list of questions to be addressed in more details in the nearest year.

The meeting was held in Space Research Institute (IKI) of the Russian Academy of Sciences and Lavochkin Association, the key industry partner for scientific spacecraft. From the Russian team, the team included the participants from IKI, Vernadsky Institute for Geochemistry and Analytical Chemistry (also of Russian Academy of Sciences), Lavochkin Association and TsNIIMASh (Central Institute for Machine Building). From the U.S. team, participants included representatives of NASA Headquarters, NASA's Jet Propulsion Laboratory, and scientists from American universities who are involved in Venus and planetary exploration.

Just before the start of the meeting the team had published a report assessing and refining the science objectives of the Russian Venera-D (Venera-Dolgozhivuschaya) mission to Venus. The document also covers scientific payload and experiments of the mission. This report was recently delivered to both NASA Headquarters and Space Council of the Russian Academy of Sciences.

As for now, JSDT has outlined three possible scenarios of Venera-D mission. Their common and basic elements are an orbiter and a lander. These can be complemented by additional elements, such as mobile aerial platforms or atmospheric probe, long-living small-station on the surface of the planet, or sub-satellite to study Venus plasma environment. The report also contains scientific objectives for the mission and the list of experiments to meet them.

The March meeting was finalized with the working protocol. The nearest task of the JSDT would be more focused analysis of the project and its technical feasibility with regard to modern technologies. Another task is to look more closely at mission's possible scenarios assuming launch in 2026-27. Then, the scientists will search for potential landing site candidates, which would meet both scientific and engineering requirements. The team also outlined the schedule of future meetings and telecons for the year to come.

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Joint Science Definition Team (JSDT) for Venus exploration is made up of representatives of NASA, Lavochkin Association, and scientists from Russia and the U.S. The tasks of the team is to examine shared scientific objectives of Venus exploration and to evaluate a planned Russian mission to Venus called Venera-D (D from Dolgozhivuschaya, “long-lived”). Co-chairs of the team are Ludmila Zasova (IKI, Moscow, Russia) and David Senske (Jet Propulsion Laboratory/California Institute of Technology, Pasadena, California).

Venera-D project was first conceived in Russia as successor to the Soviet Venera spacecraft series. It has been developed in Russia, but for several reasons was excluded from Russian Federal Space Program 2016-25. However, the Program envisages a number of advanced studies related to creation of space complexes for planetary research, and funding of Venera-D project is possible under such a framework, with the notional launch in 2026-27.

Background

Russian releases on previous JSDT meetings:

- [March 13, 2017](#)
- [August 8, 2016](#)
- [October 8, 2015](#)

March 10, 2017 [NASA Studying Shared Venus Science Objectives with Russian Space Research Institute](#)