

Exploring Venus: the Venus Exploration Analysis Group (VEXAG)

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In July 2005 NASA's Planetary Division established the Venus Exploration Analysis Group (VEXAG <http://www.lpi.usra.edu/vexag>) in order to engage the scientific community at large in identifying scientific priorities and strategies for the exploration of Venus. VEXAG is a community-based forum open to all interested in the exploration of Venus. VEXAG was designed to provide scientific input and technology development plans for planning and prioritizing the study of Venus over the next several decades, including a Venus surface sample return. VEXAG regularly evaluates NASA's Venus exploration goals, scientific objectives, investigations and critical measurement requirements, including the recommendations in the National Research Council Decadal Survey and NASA's Solar System Exploration Strategic Roadmap. VEXAG will take into consideration the latest scientific results from ESA's Venus Express mission and the MESSENGER flybys, as well as the results anticipated from JAXA's Venus Climate Orbiter, together with science community inputs from venues such as the February 13-16, 2006 AGU Chapman Conference to identify the scientific priorities and strategies for future NASA Venus exploration. VEXAG is composed of two co-chairs, Sushil Atreya, University of Michigan, Ann Arbor and Janet Luhmann, University of California, Berkeley. VEXAG has formed three focus groups in the areas of:

1. Planetary Formation and Evolution: Surface and Interior, Volcanism, Geodynamics, etc. / Focus Group Lead: Steve Mackwell, LPI
2. Atmospheric Evolution: Dynamics/Meteorology, Chemistry, Solar Wind Interaction, Escape, etc. / Focus Group Lead: Kevin Baines, JPL
3. Technology Needs for Venus In-Situ Exploration / Focus Group Lead: James Cutts, JPL

Each focus group includes and encourages international partner representatives, interested members of the scientific community, technology experts, NASA representatives, EPO experts, and the two VEXAG co-chairs.

The first community meeting of VEXAG was held in the Pasadena, California on November 4, 2005. During this meeting, Focus Groups (1) and (2) reviewed the current understanding of the present and past history of the atmosphere, surface and interior of Venus and identified critical areas in need of further investigation through future robotic missions. While several potential missions would involve remote sensing from orbit, many important measurements require surface or near surface components that must survive extreme environments, including temperatures in the range of 350 to 470°C, transient exposure to corrosive species in the atmosphere during entry, and static pressures up to around 90 bars for periods of ~1 day to as long as a year. The second community meeting of VEXAG was held on May 1-2, 2006 in the Pasadena area. VEXAG findings will be reflected in a white paper with contributions from the scientific community at large.

Web-Site - <http://www.lpi.usra.edu/vexag>