

Summary
Venus Exploration Analysis Group (VEXAG) Meeting #7
Wednesday–Thursday— October 28–29, 2009
Marriott Irvine Hotel, Irvine, California

Some 50 members of the Venus community met on Wednesday–Thursday—October 28–29, 2009 at the Marriott Irvine Hotel, Irvine, California. The goals of this meeting were to explore future missions to Venus and to provide feedback on the Venus white papers recently submitted to the Planetary Sciences Decadal Survey. Earlier in the week, the Inner Planets Panel of the Planetary Sciences Decadal Survey met at the nearby Beckman Center, University of California, Irvine.

Presentations at VEXAG Meeting #7 included:

- A welcome and well-received report by Jim Green of NASA Headquarters on the status of NASA's Planetary Science Program
- A welcome and well-received report by Ellen Stofan, Chair of the Inner Planets Panel on the current status of the Planetary Sciences Decadal Survey
- Reports on the current status the European Venus Express and the Japanese Venus Climate Orbiter (Akatsuki) missions
- Reports on eight possible future missions to Venus, including five possible New Frontiers and Discovery-class missions, the European EVE, the Russian Venera, and NASA's Venus STDT Flagship Mission
- A report on the VEXAG-sponsored workshop on Venus Geochemistry: Progress, Prospects, and New Missions, which was held last February in Houston
- Reports on future VEXAG-sponsored conferences—including an International Conference on Venus Atmosphere, *Venus, Our Closest Earth-like Planet: From Surface to Thermosphere – How does it Work?*, Madison, Wisconsin, August 30– September 2, 2010—as well as plans for the Chapman Conference on Comparative Climatology in 2011

There were five open-microphone presentations covering such diverse topics as aerial electromagnetic sounding of the Venus lithosphere, use of Raman spectroscopy and laser-induced breakdown spectroscopy (LIBS) to measure mineralogy and chemistry of the surface, the anomalous radar reflectivity of the Venus highland regions, the Venus VGRAM (software that provides information to evaluate the Venus atmosphere), and the importance of understanding Venus' atmosphere.

During the business meeting, VEXAG endorsed the proposal to pursue a lower-cost version of the Venus Flagship Mission that was recently developed by the Science and Technology Definition Team (STDT) for consideration by the Inner Planets Panel of the Planetary Sciences Decadal Survey.

The next VEXAG meeting will be a town hall to provide a status report on Inner Planets Panel activities is tentatively scheduled to be at the Lunar and Planetary Science Conference. Following that, there will be a VEXAG meeting held in conjunction with the International Conference on Venus Atmosphere, *Venus, Our Closest Earth-like Planet: From Surface to Thermosphere – How does it Work?*, Madison, Wisconsin, August 30–September 2, 2010.

VEXAG Meeting #7 (28–29 October 2009) Attendees

Sushil Atreya	University of Michigan
Kevin Baines	Jet Propulsion Laboratory
Tibor Balint	Jet Propulsion Laboratory
William Brinckerhoff	NASA Goddard Space Flight Center
Mark Bullock	Southwest Research Institute
Sam Clegg	Los Alamos National Laboratory
Jacob Cohen	NASA Ames Research Center
Bob Dahlgren	SETI Research Institute
Lamont Di Biasi	Southwest Research Institute
Darby Dyar	Mount Holyoke College
David Edwards	NASA Marshall Space Flight Center
Howard Eller	Northrop Grumman
Larry Esposito	University of Colorado
Kelly Fast	NASA Goddard Space Flight Center
Freund Friedemann	NASA Ames Research Center
Lori Glaze	NASA Goddard Space Flight Center
Jim Green	NASA Headquarters
Bob Grimm	Southwest Research Institute
David Grinspoon	Denver Museum of Nature and Science
Robert Herrick	University of Alaska Fairbanks
Gary Hunter	NASA Glenn Research Center
Natasha Johnson	NASA Goddard Space Flight Center
Mike Kaplan	The Boeing Company
Kurt Klaus	The Boeing Company
Sanjay Limaye	University of Wisconsin
Paul Mahaffy	NASA Goddard Space Flight Center
Steve Maxwell	Lunar and Planetary Institute
Franz Meyer	University of Alaska Fairbanks
Walter Mirczak	Independent
Masato Nakamura	Institute of Space and Astronautical Science
Adriana Ocampo	NASA Headquarters
Helen Parish	University of California, Los Angeles
Kevin Parsons	Northrop Grumman
Jeff Plaut	Jet Propulsion Laboratory
Jaime Reyes	Lockheed Martin Space Systems
Ford Rogers	The Boeing Company
Floyd Ross	Northrop Grumman
Takehiko Satoh	Japan Aerospace Exploration Agency
Teresa Segura	Northrop Grumman
Virgil Sharton	University of Alaska Fairbanks
Sue Smrekar	Jet Propulsion Laboratory
Ellen Stofan	Proxemy, Inc
Tommy Thompson	Jet Propulsion Laboratory
Alan Treiman	Lunar and Planetary Institute
Jonathan Weinberg	Ball Aerospace

Venus Exploration Analysis Group (VEXAG) Meeting #7 - Future Missions to Venus

Wednesday-Thursday – October 28-29, 2009 - Marriott Irvine Hotel, Irvine, California

Wednesday – October 28, 2009

1:00 PM - Sign-In / Pick-up Handouts

1:15 PM - VEXAG Meeting #7 Overview and Objectives – Sanjay Limaye, Sue Smrekar

- Exploring Future Missions to Venus
- Feedback on Venus White Papers for Planetary Sciences Decadal Survey
- Plans for International Conference on Venus Atmosphere
- Plans for Chapman Conference on Comparative Climatology

1:30 PM - NASA Headquarters Update and Perspective on Venus Exploration- Jim Green

2:00 PM – Status of Next Decadal Survey - Ellen Stofan, Steve Mackwell

2:30 PM - Special Session - Future Missions to Venus (continues Thursday morning)

2:30 PM – Options for Future Venus Missions – Lori Glaze for Jim Garvin

3:00-3:15 PM – Coffee Break

3:10 PM – VISE Mission – Larry Esposito

3:30 PM – Venus Atmospheric Explorer – Kevin Baines

3:50 PM –RAVEN - High Resolution Mapping of Venus – Virgil (Buck) Sharpton

4:10 PM – Venus Geochemistry: Progress, Prospects, and New Missions – Allan Treiman

4:30 PM - Open Mike Presentations on Future Missions (1-2 slides, 5 to 10 minutes)

- *Provide your presentation to the projectionist during the coffee break*

5:00 PM – Concluding Remarks / Plans for Thursday - Sanjay Limaye, Sue Smrekar

5:15 PM – ADJOURN

Thursday – October 29, 2009

8:00 AM - Sign-In / Pick-up Handouts / Coffee and Pastries

8:30 AM – Venus Express Status Report – Kevin Baines and Hakan Svendem

Thursday – October 29, 2009

8:00 AM - Sign-In / Pick-up Handouts / Coffee and Pastries

8:30 AM – Venus Express Status Report – Kevin Baines and Hakan Svendem

9:00 AM - Special Session - Future Missions to Venus (continues from Wednesday)

9:00 AM – Technologies for Future Venus Missions – Tibor Balint and Gary Hunter

10:00 AM – Europe’s EVE Mission – Tibor Balint for Eric Chassefiere and Colin Wilson

10:30 AM – Coffee Break

10:40 AM - Russia’s Venera-D – Kevin Baines for L. Zasova

10:20 AM – Venus STDT Design Reference Mission– Mark Bullock

12:00 – LUNCH

1:15 PM – Venus STDT Video – Tibor Balint

1:30 PM - JAXA's Venus Climate Orbiter -Akatsuki - Masato Nakamura and Takehiko Satoh

2:00 PM – Venus Test Chamber – Natasha Johnson

2:20 PM – Venus Education and Public Outreach – Rosalyn Pertzborn

2:40 PM - Open Mike Presentations (1-2 slides, 5 to 10 minutes)

- *Provide your presentation to the projectionist during the lunch break*

3:00 PM – International Conference on Venus Atmosphere – Sanjay Limaye

3:15 PM – Chapman Conference Comparative Climatology Conference – David Grinspoon

3:30 PM - Wrap-up - Next Meeting - Recommendations - Action Items

– Sanjay Limaye. Sue Smrekar

4:00 PM – ADJOURN and VACATE THE ROOM