Planetary Science Sub-committee Meeting

VEXAG Status Update

by

Sue Smrekar & Sanjay Limaye
Co-Chairs

26 January 2011

http://www.lpi.usra.edu/vexag/
Recent Events

Completed:

- **VEXAG** workshop, “Venus Atmosphere: From surface to thermosphere” held in Madison, Wisconsin during 30 August – 2 September, followed by the 8th VEXAG meeting

- Special issue of *Icarus*, “Advances in Venus Science”, will be published in late summer 2011. Nearly 40 papers have been submitted and going through the review process. *Drossart, Limaye* and *Smrekar*, are Guest Editors.

- NASA selected 7 PSs for Akatsuki mission in November 2010, including two PSiRs

- Unfortunately Akatsuki orbit insertion was not successful and the spacecraft is in a solar orbit with ~ 200 day period. JAXA will attempt VOI-2 in five to six years pending further tests of the motor.

- Akatsuki Team has expressed its intent to continue participation in **VEXAG** activities

- EU Ministers have extended funding for continuation of Venus Express operations through end of 2014 and spacecraft continues to operate normally
Venus Community Hopes and Concerns

Students/Young Scientists and Understanding Venus/Earth like planets:

- Comparatively, it appears that there is a very low in-flux of students and young scientists in Venus research.
  - Lack of new missions to Venus and data
  - Fewer successful Venus proposals in ROSES
  - (Venus Express PS program is important, but funding too low to support students/post docs)
  - Akatsuki did not have a successful VOI in December 2010, although JAXA will attempt again in 2015-2016.

- The community is hopeful of a supportive Decadal Survey Report regarding exploration of Venus to understand greenhouse planets every where.
- VEXAG hopes to involve students more directly (to be explored at LPSC)
Future Opportunities to Explore Venus under consideration

- SAGE submitted a CSR for the 3rd New Frontiers AO

- Two Proposals submitted to ESA’s Cosmic Vision with some US Scientist involvement and requested a review by NASA (EVE, a long lived balloon mission, and EnVision, a radar orbiter)

- Several Proposals submitted to the Discovery Program

- Venera-D being developed by Russia for launch nominally in 2016

Also, looking at some low-cost (compared to flight missions) earth stratospheric balloon borne concepts to observe Venus with some collaborative efforts.

This has promise of returning some new science data quickly (~2014)
Upcoming Activities

• Initiate some efforts to attract graduate students Venus Speakers Bureau for supporting speakers at universities and research centers

• 9th VEXAG Meeting and Science Conference on Earth Based Venus Observations, New Venus Results from Venus Express and Future Missions
  – East Coast (tentatively at the National Aerospace Institute), 30 August – 2 September, 2011

• Town hall meeting at LPSC (Thursday)
  – “Students and the Exploration of Venus in the Coming Decade”
2010 Venus Atmosphere: Surface to Thermosphere

venus.wisc.edu/workshop

- 60 Papers presented
- Extended Abstracts Volume published on CD-ROM
- Presentations and Extended Abstracts posted on the web (venus.wisc.edu/workshop)
- Special Issue of Icarus
- Co-Located STEM Workshop for Educators (113) from the Midwest with Wisconsin DPI and NSF Funded National Girls Collaborative Project
- Venus Scientists participated in the STEM Workshop
- Public Program with three speakers (three halls filled) and on city cable channel
- Videos posted on the web
Public Presentations

http://venus.wisc.edu/video_public.html
STEM Workshop held during the Workshop

Teacher Workshops

Please contact us if you would like to arrange a Venus Express presentation for your school, club, or community.

Event Highlights

Promoting STEM Careers for Girls Educator Workshop - Featuring Bill Rye "The Science Guy"
31 August 2010, Waukesha, USA

A one-day workshop was conducted for STEM educators at the Waukesha Venaria Convention and Community Center on 31 August 2010. Over 110 educators and other STEM professionals, as well as school students from the Upper Midwest attended the program which focused on promoting STEM careers for young women. The workshop was jointly sponsored and developed by the NASA’s Venus Express EPO project, the Wisconsin Girls Collaborative Project (Wisconsin Department of Public Instruction), and the National GEM Collaborative (NSF). The workshop was held in conjunction with the 2010 International Venus Workshop (NASA/VEXAG), which allowed presentations by leading Venus scientists, including Dr. Sanjay Limaye and Dr. Keith Benes. Graduate students, Nanen Van Rijn provided support for program development and led the “Venus Cloud Tracking” mini-workshop. The Planetary Society sponsored Bill Rye “The Science Guy” as a featured guest speaker for the workshop.
Science, Education, Outreach and Recognition
Curriculum Activity Training during the workshop
New Venus Results

- Volcanoes still active?
  - Smrekar et al. (high NIR emissivity features co-located with hotspots)
  - Bondarenko et al. (warm anomalies)

  *Bright “clouds” in Venus Express - VMC images occasionally.*

  *What causes them?*

  **Venus Express is documenting the range of morphologies exhibited by the hemispheric vortex which is crucial for understanding the puzzling superrotation of the atmosphere**