

Welcome to this update from the Venus Exploration Analysis Group (VEXAG). Items for future issues, comments and suggestions welcome.

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 VEXAG Chair

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VEXAG Meeting #9 attendees posing in front of the replica of the VeGa Balloon, Lander and Carrier spacecraft at the Udvar Hazy Center, Smithsonian Air & Space Museum

**1. 9<sup>th</sup> VEXAG Meeting, Chantilly, Virginia**

This was a key meeting for the Venus community held at a critical period. Attendance and participation by eighty scientists and significant presence from NASA HQ led to a successful meeting. The meeting followed the selections in the New Frontiers-3 and the Discovery-12 Program. Since there have been about two dozen proposals to Discovery program since its inception, the meeting enabled a good discussion of the challenges to Venus mission selection. Dr. Jim Green presented status of the NASA budget and future outlook. Dr. Waleed Abdalati, NASA Chief Scientist engaged the participants in a discussion of challenges facing future exploration missions to Venus. Dr. Paul Hertz presented an overview of the selection process for competed missions and Dr. Michael New gave an overview of the review process of Discovery proposals and highlighted the issue of number of con-investigators and available reviewers without conflicts. Dr. Ed Grayzeck discussed the availability of MESSENGER data collected during the second Venus fly-by. Dr. Steve Williams presented the NASA SMD plans for Venus 2012 transit events and activities. Several resolutions were agreed upon during the meeting and new focus groups were discussed and formed. Discussions with the Venus community at this meeting covered following topics: Key Venus Science Questions, Goals and Objectives Document, student and young scientist involvement. VEXAG presentations are posted at [www.lpi.usra.edu/vexag](http://www.lpi.usra.edu/vexag).

The VEXAG meeting was followed by day and a half of science results from the participants. Presentation topics included atmospheric and geologic science, groundbased observations of Venus, results from the Venus Express Mission and observational strategies for future exploration of Venus. Meeting agenda and science presentations are posted at [venus.wisc.edu/workshop](http://venus.wisc.edu/workshop)

## 2. New Focus Groups

In view of the completion of the New Frontiers and Discovery selections and the publication of the National Academies Decadal Survey of Planetary Exploration it was felt that future VEXAG priorities required new focus groups. The following have been formed:

- Venus Exploration Goals, Objectives, and Strategies Focus Group (Buck Sharpton LPI, Lead)
- Competed Missions and SR&T Focus Group (Lori Glaze, GSFC, Lead)
- International Venus Exploration Working Group (Mark Bullock, SwRI Lead)
- Technology Development and Laboratory Measurements (Pat Beauchamp, JPL, Tibor Kremik, NASA/GRC Co-Leads)
- Young Scientists and Students Focus Group Danielle Piskorz and Stephanie Johnston, Co-Leads)

The charters for these groups and contact information for the leads can be found on the VEXAG URL shortly. Please provide these Focus Group leads with your concerns and suggestions. The focus groups will schedule telecons as needed and hold splinter meetings during future VEXAG meetings.

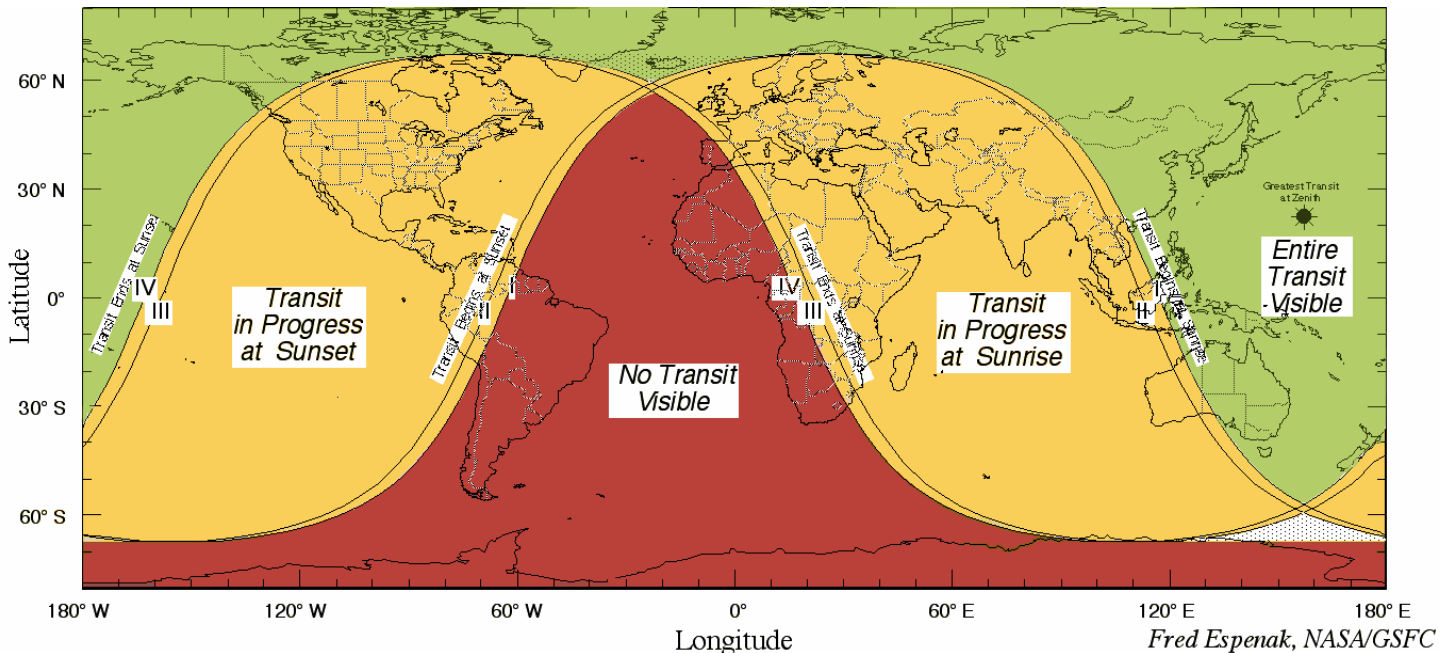
## 3. Why Venus? Why Now?

During the remarks by NASA Chief Scientist, Dr. Waleed (Check spelling) Abdalati regarding how to elevate the significance of exploring Venus during the current constrained budget environment for exploration towards expending some resources for future missions to Venus, he invited feedback regarding what has been recommended in the recent past and what the outcomes have been. An initial response has been sent and is posted at the VEXAG URL. As this will be an on-going dialog, your comments are welcome.

Plans are being developed to publish a concise volume "Why Venus, why Now? Case for Exploration" by May 2012 aimed at decision makers.

## 4. Venus Transit 5/6 June 2012

The last transit of Venus in our lifetime will occur on June 5/6 2012. It provides an excellent opportunity to engage the public in the significance of Venus and the transit. The VEXAG URL will provide one resource for your outreach efforts and coordinate with NASA Headquarters (SMD/PSD) efforts to facilitate global events. Please get involved and keep us informed.



Visibility of the 2012 Venus transit. For detailed predictions of the transit times for your location, please visit <http://www.transitofvenus.nl/details.html>. Here are some other useful sites:

- <http://sunearthday.nasa.gov/2012/index.php>
- <http://eclipse.gsfc.nasa.gov/OH/transit12.html>
- <http://transitofvenus.org>

## 5. Future Meetings of Interest

### Atmospheric Waves Workshop, 9-10 November 2011, Noordwijk, The Netherlands

The scope of the workshop to be held at ESTEC is to bring together experts in observations and modeling of atmospheric waves to discuss the nature of waves observed in Venus atmosphere by several experiments on board Venus Express and their comparison to similar features observed on other planets (Mars, Earth). There is no registration fee for the workshop. If you wish to take part to the workshop and to give a talk please send an email to Arianna Piccialli ([Arianna.Piccialli@esa.int](mailto:Arianna.Piccialli@esa.int)).

Meeting URL: [http://www.rssd.esa.int/index.php?project=VENUSEXPRESS&page=atm\\_waves\\_intro](http://www.rssd.esa.int/index.php?project=VENUSEXPRESS&page=atm_waves_intro)

### NASA PSS Meeting, Washington DC, 2-3 November 2011

This meeting will take place telephonically and by WebEx. The agenda for the meeting includes the following topics: (i) Status of Fiscal Year 2012 Budget and Impacts, (ii) Status of the Potential Joint Program/Missions with the European Space Agency, (iii) Update on the NASA Response to the National Research Council Planetary Decadal Survey. To attend this meeting or listen in please contact Ms. Marian Norris, Science Mission Directorate, NASA Headquarters, Washington, DC 20546, (202) 358-4452, fax (202) 358-4118, or [mnorris@nasa.gov](mailto:mnorris@nasa.gov).

NOTE: This meeting was cancelled at the last minute on account of the sudden death of PSS Chair Ron Greeley.

Ron Greeley was a strong presence in the Venus science community and throughout solar system science. Ron contributed his integrity, energy, and insight to the study of volcanology and aeolian process on Venus, the pursuit of new Venus missions, and the professional development of many young planetary scientists. Although he will be acutely missed, his legacy will carry on by the many people he touched throughout the community.

VEXAG Steering Committee Meeting at AGU, December 7, 2012

A room has been reserved at the Marquis Marriott Hotel (10:30 am – 1:30 pm). Please contact Tommy Thompson ([twthompson@jpl.nasa.gov](mailto:twthompson@jpl.nasa.gov), 8181-354-3881) or (Sanjay Limaye [SanjayL@ssec.wisc.edu](mailto:SanjayL@ssec.wisc.edu) (608) 262-9541) if you wish to attend. We may have a call-in capability

Exploring the Planetary Science Achievable from a Balloon Based Observatory, January 25-26, 2012, Cleveland Ohio

A two-day workshop on Earth based stratospheric balloon platforms for extending planetary observations is being organized by Tibor Kremic ([tibor.kremic@nasa.gov](mailto:tibor.kremic@nasa.gov)) for more information.

Lunar and Planetary Science Conference.

The 43rd Lunar and Planetary Science Conference will be held at The Woodlands Waterway Marriott Hotel and Convention Center in The Woodlands, Texas. A special session on Venus has been proposed. Interested researchers are encourage to submit abstracts relevant to the topic of resurfacing of Venus. Look for an upcoming PEN announcement. Please contact Buck Sharpton ([buck.sharpton@alaska.edu](mailto:buck.sharpton@alaska.edu)) for more information.

A Venus Town Hall Meeting will Also, be held during the week as we did last two years. Details to follow.

Third International Planetary Dunes Workshop, 12-15 June 2012, Flagstaff, Arizona

Tim Titus has invited interested members of the Venus community to participate this two day workshop. More information at <http://www.lpi.usra.edu/meetings/dunes2012/>.

Comparative Climatology of Terrestrial Planets, Boulder, Colorado, 25-28 June 2012

Contact: [Mark Bullock](mailto:mark.bullock@boulder.swri.edu) ([mark.bullock@boulder.swri.edu](mailto:mark.bullock@boulder.swri.edu)). *Topics for this international conference include:*

- Climate and Atmosphere
- Clouds, Hazes, and Precipitation
- Interior-Surface-Atmosphere Interactions
- Solar-Atmosphere Interactions
- Exoplanets and Climate

10<sup>th</sup> VEXAG Meeting, Boulder, Colorado, 29 June 2012

A one day meeting will be held immediately following the Comparative Climatology Conference.

*Exploration of Venus Session at COSPAR, Mysore, India, 14-22 July 2012.*

Abstract deadline is 10 February 2012. Visit the conference URL for more information:

<http://www.cospar2012india.org/>

## 6. Current Venus Missions

### *Akatsuki*

Akatsuki spacecraft fired its main engine in mid September to gauge its health. It was determined that the engine has suffered some damage and prospects of achieving full thrust are small. The Akatsuki team is pursuing other options to go into orbit at Venus in 2015. We will learn when more thruster tests are performed in November 2011. VEXAG wishes the Akatsuki team success in their efforts.

### *Venus Express*

Venus Express orbiter is continuing its operations and no major concerns are reported. The mission is approved through December 2014 pending a review in mid-2012. ESA has made the decision to postpone aerobraking of the spacecraft to achieve a lower orbit. The next two Venus Express Science Working Team (SWT) Meetings will be November 16-18, Graz, Austria. The following meeting will be held in Svalbaard, Norway during 4-6 June 2012 in conjunction with the Venus transit. Contact Håkan Svedhem ([hsvedhem@rssd.esa.int](mailto:hsvedhem@rssd.esa.int)) for more information.

## 7. Venus in the News

### *Ozone on Venus*

Ozone discovered on Venus from the SPICAV instrument on Venus Express. The results were presented at the EPSC/DPS joint meeting in Nantes, France in October and published in *Icarus* (F. Montmessin, J.-L. Bertaux, F. Lefèvre, E. Marcq, D. Belyaev, J.-C. Gérard, O. Korablev, A. Fedorova, V. Sarago, A.C. Vandaele. A layer of ozone detected in the nightside upper atmosphere of Venus. *Icarus*, 2011; 216 (1): 82 DOI:

[10.1016/j.icarus.2011.08.010](https://doi.org/10.1016/j.icarus.2011.08.010) )

'Advances in Venus Science' Special issue of *Icarus* expected to be published in early 2012.

### *250<sup>th</sup> Anniversary of the Discovery of the Atmosphere on Venus*

Observations of the transit of Venus by Mikhail Lomonosov led to the discovery of the atmosphere (Mikhail Lomonosov and the discovery of the atmosphere of Venus during the 1761 transit, M. Marov, Proceedings of the International Astronomical Union (2004), 2004 : pp 209-219 . A summary of the transit can be found at the HM Nautical Almanac Office URL ([http://astro.ukho.gov.uk/nao/transit/V\\_1761/index.html](http://astro.ukho.gov.uk/nao/transit/V_1761/index.html)).