VEXAG Update
NASA PSS Meeting
November 21, 2014

Lori S. Glaze, NASA GSFC - VEXAG Chair

Pat Beauchamp – Deputy VEXAG Chair

Activities

Ongoing: Centennial Challenge

- Interchange meeting held with industry and academics on Oct. 21, 2014
  - Well attended; 47 participants representing large and small institutions
  - Strong interest expressed by participants but there are barriers to be worked
    - High cost of entry into building Silicon Carbide or other wide band gap electronics may mean small institutes will need to team with the few potential suppliers
    - Academics may need seed funding for purchases
- The NASA Centennial Program Office was represented and also encourage by what they heard/saw
- Next Steps
  - Challenge team will incorporate feedback into upcoming RFI and the challenge structure, possibly including seed funds for Academic institutions
  - Will continue to try and foster partnering
  - A RFI could be issued before the end of 2014 - to be worked with HQ, STMD
  - Optimistically a challenge could be announcement by mid-2015 but that is subject to many factors, later in 2015 is more likely.

Activities

- November 2014 DPS: Distributed VEXAG documents
- December 2014 AGU: Distribute VEXAG documents at the One NASA booth
- March 2015: Venus Town Hall at LPSC

Workshops and Meetings

- April 7-8, 2015: International Venus Exploration Laboratory Measurements and Instrument Definition Workshop (LaRC)
- April 9 2015: 12th VEXAG meeting at NASA LaRC; after Discovery submissions and FY16 Budget release
- May 4-6, 2015: Comparative tectonics and geodynamics of Venus, Earth, and Exoplanets, Keck Center, Caltech, Pasadena
- September 8-11, 2015: Comparative Climate of the Terrestrial Planets II, NASA Ames

Venus Gravity Assist Science Opportunity (VeGASO) Panel

- VeGASO is a top-level advisory group for the assessment of profile science collaborations with NASA's Solar Probe Plus (SPP), ESA's Solar Orbiter (SO) and Bepi-Colombo missions during these mission fly-bys of Venus.
  - The primary role of the VeGASO Panel is to identify/assess synergistic Venus science observations that could be performed using the many gravity assist opportunities of the above mentioned missions, and to document their findings and priorities for this possible collaborative science oportunities that respond to the Venus Exploration Analysis Group (VEXAG) goals and objectives.

<u>Schedule</u>

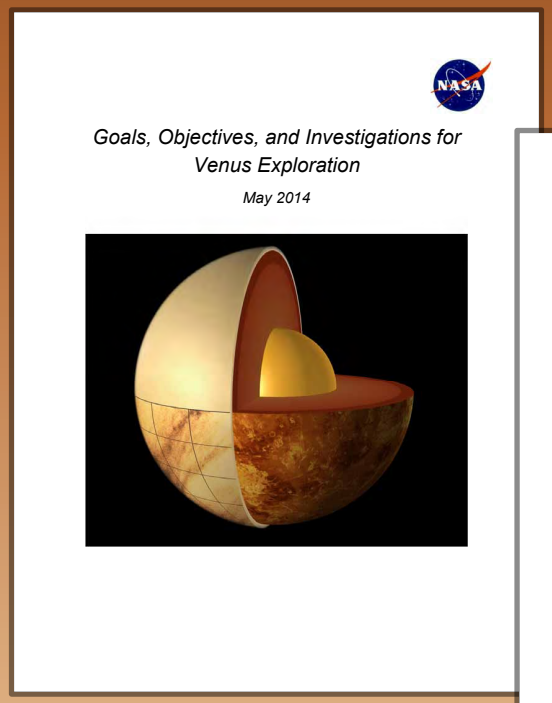
- October 2014 - March 2015 - Bi Weekly Telecons
- November 18-19, 2014 –Strategic Coordinating Co-chairs Meeting
- Late January 2015 - Draft Report
- March 2015 - Final Report

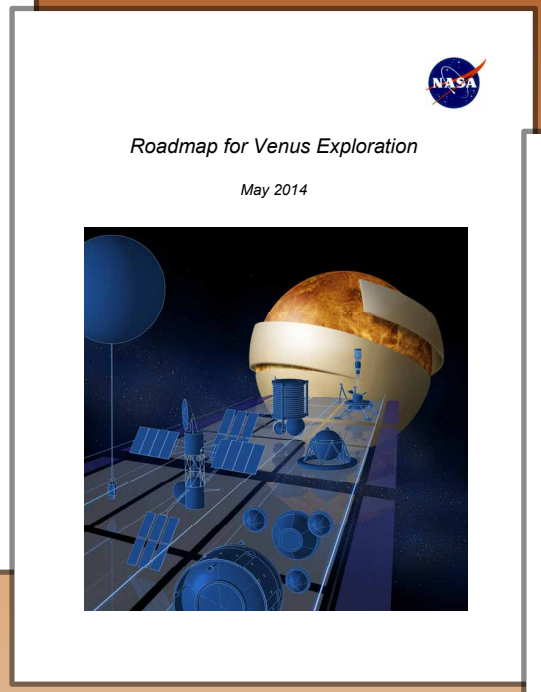
Venus Express News

- Hakan Svedhen, ESA's Venus Express Project Scientist, announced during the first week of November that the Venus Express Mission received the recommendations from ESA's Solar System Exploration Working Group and Solar System Advisory Group that Venus Express operations should be funded until September 30, 2015. Thus bodes well for a final approval by ESA's Science Program Committee (SPC) later in November.

- As fuel running low, critical times occur at the end of the month (starting 23 November) and again in February when periapsis raise maneuvers will have to be executed.

Venus Exploration Analysis Group



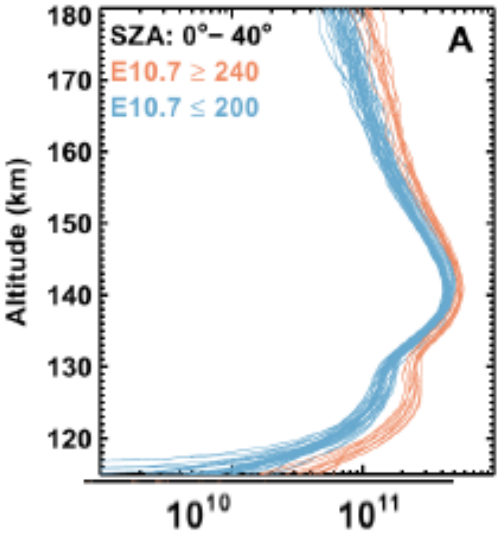


SCIENCE NUGGET

11-21-2014

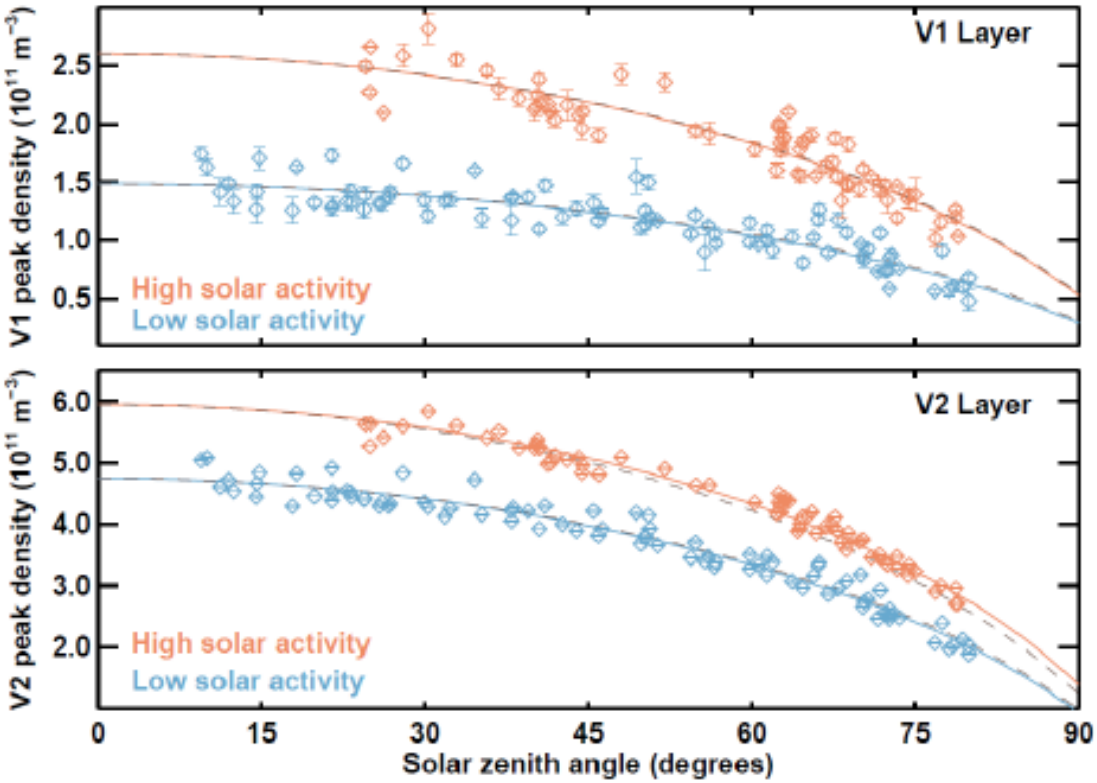
The ionosphere of Venus from Venus Express

Zachary Girazian and Paul Withers,
Boston University (withers@bu.edu)



The vertical distribution of plasma is dominated by two ionospheric layers, but the lower layer has not been well-characterized before.

Densities in the lower layer increase more with increasing solar activity than do densities in the upper layer.



The density of the lower layer (V1) has the same dependence on solar zenith angle as does the upper (V2) layer.

These observational findings concerning the effects of the Sun on the lower layer of the ionosphere will enable ionospheric models to represent this important component of the ionosphere accurately.

Data from the Venus Express Radio Science experiment (VeRa) led by Patzold and Hausler

Issues (same as previously discussed)

- VEXAG is concerned that since many programs have been consolidated in the Solar Systems Working solicitation it may be hard to assess how the Venus community fares in this new structure.
- VEXAG has expressed its concerns on this restructuring and the only way to judge how well these concerns have been addressed is to do an in-depth analysis on the selection rates of the Solar System Working awards.
- We request NASA undertake such an analysis, which would be extremely beneficial and useful to the entire planetary community.
- We also suggest that NASA PSD review their goals and metrics and assess the overall R&A restructuring.
- We can then evaluate the report to assess its positive or negative impacts to the Venus science community.