

DENVER MUSEUM OF NATURE AND SCIENCE
VENUS WINDS PROJECT
MINUTES OF MEETING

Date/Time/Location: 9 April 2015 6:00 PM ADM 1

ATTENDING

Boudreau	Bullock	Crowl	Doubek	Farrell	Gehring	Heil
Krider	Lindsay	Logan	McGouldrick	Parziale	Royer	Stewart
Tarr	Viera	Zimmerle				

Guests: None

The meeting opened at 6:00 PM in ADM 1. Those **attending** are listed above.

OLD BUSINESS

Because of limited attendance, the following agenda items are carried forward.

Sub-group *Slit Removal* (Proposer: Dylan)

Dylan and Mark discussed potential algorithms to automate slit removal from the images. Dylan will build upon existing program code. However, also see below regarding Marta's efforts on this issue.

Sub-group *Improved Online Tools* (Proposer: Ricardo)

Ricardo and an associate have been improving the coordinate recording tool that Ricardo demonstrated at an earlier meeting (November 6). The tool is available for testing at <http://venuswindsproject.org/>.

Sub-group *Automated Co-Registration* (Proposer: Dave)

Dave has been researching available applications employing auto-correlation algorithms that would be employed in automated co-registration of images. He is planning to continue this research.

Assignment: Co-Register Images All Researchers

Your assignment was to center each of your 9 images from Dec 14, 2010 in a 512 x 512 image. Then bring these 9 processed images with you or email to Art before the meeting. The next meeting will be Thursday Feb 26 at 6:00 pm.

Image Co-Registration: Mark

Mark will go through the process of centering each of 9 images from Dec 14, 2010, using Photoshop and GIMP. With the tutorials on the new web page and this demonstration, you should have enough information to start trying this yourself.

Wind Velocity Measurements: Mark

Mark discussed an instructive new way to choose points for wind velocity determination. The analysts present proposed a number of possibilities in the July 12, 2004 images. This consensus-derived method should yield points that are easier to follow. The new points will be the basis for a new exercise determining velocities with pre-defined points. Art will send the images with points plotted and a new spreadsheet. Several of the points discussed at the meeting will be included in that set.

Wind velocity computations for 12 July 2004 images Mark

Mark will introduce and discuss nine new images from 12 July 2004. He will provide a new spreadsheet for the velocity computations.

Published article of Venus Winds results Mark, Art

This discussion will focus on the scope of an article (to be published in a scientific journal) detailing the methods and results of Venus Winds Project research into the zonal winds at 50 km altitude. Certain goals have been established and these will be discussed in detail.

Progress in using Gimp as a substitute for Adobe Photoshop All

Recently we proposed that analysts who do not have access to Adobe Photoshop use open-source application Gimp. This is an opportunity for those who have experimented with Gimp to tell of their experience. We are interested in hearing from those who have no experience with either application. Several analysts have reported success in using Gimp for this purpose and will be asked to demonstrate their work at a future meeting.

NEW BUSINESS

New projection system Mark

Mark demonstrated a portable Epson projector that will be used in venues, such as ADM 1, that do not have high-resolution projection systems.

Slit removal using Adobe Photoshop Marta, Mark

Marta demonstrated a method of removing the dark vertical slit in Venus images using Adobe Photoshop. The slit is four pixels wide and captures data for spectral analysis. The method smooths over the four pixels by interpolation.

Published overview of atmospheres of the terrestrial planets Mark

Mark distributed *Atmospheres of the Terrestrial Planets* by James Pollack, Chapter 8 in the volume *The New Solar System* to all analysts. The chapter is an excellent overview of Mercury, Venus, Earth and Mars.

Availability of ALL Venus images Marta

On the Research/Datasets tab of the project web page, Marta has a link, in yellow, to all the Venus images. This is a password protected site. The username and password have been discussed at a previous meeting; please email Art if you need them again.

The next meeting on April 23 will be in ADM 1 at 6:00 PM

Submitted by Arthur C. Tarr, Venus Winds Project Coordinator