

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

Date/Time/Location: 29 Jan 2015 6:00 PM Online

**ATTENDING**

<b>Boudreau</b>	<b>Bullock</b>	Crowl	Diba	Dickerman	Doubek
Farrell	Gehring	Harter	Heil	Knutson	Krider
<b>Lindsay</b>	<b>Logan</b>	<b>McGouldrick</b>	<b>Parziale</b>	Romero	Royer
<b>Tarr</b>	Trieu	Viera	Zimmerle		

Guests: None

The meeting opened at 6:00 PM online. Those **attending** are listed above.

Seven members of the Venus Winds Project participated in an exploration of Intercall's Webex online meeting software package. Mark hosted the meeting from his office at SwRI in Boulder. Mark, Kevin, Marta and Art were present in the video portion and Yvonne, Michael Logan and Rachel were present by telephone connection. Mark displayed a number of graphs pertaining to prior analyses including a Power Point slide show of previous results from the last exercise determining velocity profiles from the sequence of 12 July 2004.

**OLD BUSINESS**

**Picking nine images from the Dec 14, 2010 dataset** Mark

The assignment was to select 9 sharp images from the Dec 14, 2010 dataset, approximately equally spaced in time. We will do direct visual comparisons of each researcher's selections at the next meeting. Please send Art your list of nine images, by image number, if you haven't done this yet.

**Summary of velocity data from July 12, 2004 images** Mark

Spreadsheet calculations of Venus' July 12, 2004 wind velocities will be posted on the new project web site. If you haven't yet tracked nine points on these images and entered their x,y values into the spreadsheet, now is the time! Send your spreadsheet to Art and it will be posted to the web site.

**Wind velocity measurements using pre-defined points** Mark

Since last meeting, Mark sent out a new Excel workbook with x,y values for nine points on the first image (im0001.jpg) pre-entered into the Input spreadsheet. The new workbook contains images showing the location of each tracking point on the first image. Follow these points in each of the next eight images, entering their new x,y coordinates into the new Input spreadsheet. Linear regression to calculate the best-fit velocities are on the Calculations worksheet of the workbook, and the plotted east-west and north-south velocities are on the Results worksheet. Bring your results to the next meeting, and we'll put them up for discussion!

## Individual sub-group task reports

### **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.

### **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/>. Report your experience and any problems to Ricardo. Ricardo also suggested an improved method of rapidly examining a series of images for a specific dataset.

### **Sub-group *Plotting Rotation Curves*** (Proposer: Christy)

Christy has agreed to calculate velocity vs. latitude speeds for a solid sphere rotator. She will plot the velocities of points at several latitudes on the surface of a sphere. There will be one curve for an equatorial velocity of 50 m/s, one for an equatorial velocity of 75 m/s, and one for an equatorial velocity of 100 m/s.

### **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.

### **Upcoming Assignment: Co-Register Images** All researchers

Mark discussed the new assignment, which is to take each of your 9 images from Dec 14, 2010 and move Venus so that it is in the center of the 512x512 image. Please bring these new, shifted images with you to our next meeting on February 12, 2015.

### **Using GIMP for co-registering images** Mark

Mark will discuss using GIMP to work through Art's Tutorial #10

### **Project Web Sites Preview** Marta

Marta has designed two models of a new website for the project to replace the functions of the defunct Venus wiki. You are invited to preview each at [spaceodyssey.dmns.org](http://spaceodyssey.dmns.org), the *GALAXY GUIDE PORTAL*. The two models are VWP I and VWP II, links on the top stripe. Take a look at each. We'll collect your responses in a week or two to guide Marta.

## NEW BUSINESS

The experiment with the Intercall Webex online software (discussed above) was the bulk of the new business.

The next meeting on February 12, 2015 will be in Exploration Studio 106 at 6:00 PM.

Submitted by Arthur C. Tarr, Venus Winds Project Coordinator