



## Sun Earth Day 2012: The Transit of Venus

**L. Mayo** (1), T. Cline (1), J. Thieman (2), E. Lewis (1), Carolyn Ng. (1), S. Odenwald (3)

(1) Honeywell Inc., Maryland, USA, (Louis.A.Mayo@nasa.gov / Fax: 301 286-1635) (2) NASA Goddard Space Flight Center, Maryland, USA, (3) ADNET Systems Inc., Maryland, USA

## Abstract

Sun Earth Day is an international day of celebration of the sun, the heliosphere, and its impact on the solar system. Each year, Sun Earth Day touches over 30,000 teachers, and over 10 million general public in over 40 countries around the world through engaging event driven themes, access to real time scientific data, classroom and museum activities, and cutting edge technologies. These events involve webcasts from remote locations, NASA TV programming, teacher professional development training programs, amateur astronomer observing certificates, museum programs, and many other events and activities. This year's Sun Earth Day theme is the 2012 Venus Transit, a last in a lifetime event that has captured the interest and imagination of astronomers and the public for almost four centuries. We will feature a live webcast from Mauna Kea, Hawaii and multi wavelength video observations of the transit from Hawaii and Alaska. This will produce a sufficient baseline needed to derive the distance between Earth and sun, the AU. Interested amateur astronomers will be able to send in their images of the transit as well. Scientists, amateur astronomers, and educators can sign up to receive education and presentation materials on our web site at:

<http://sunearthday.nasa.gov>

## 1. Introduction

On June 6th, 2012, the planet Venus will make its final trek across the face of the sun as seen from Earth until the year 2117. This historic "Venus Transit", the last in our lifetime, has captured the imaginations and scientific interest of scientists, politicians, explorers, amateur astronomers, and the general public for almost 400 years, since its first sighting in 1639. Since the advent of the telescope in 1609, there have been only six transits (in pairs) of the sun by Venus, 1631/1639, 1761/1769, and 1874/1882. The seventh occurred in 2004 with its pair in 2012. The transit's importance lies in both its rarity and the critically important role it played in determining the distance of the Earth from the sun, the "astronomical unit" from which the distances to all the other planets could be derived. The NASA

Sun Earth Day education program has chosen the Venus Transit as its theme for 2012.

## 3. Figures

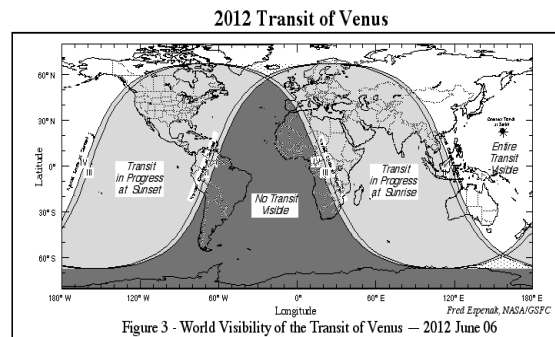


Figure 1: Global visibility of the 2012 transit (ref. Fred Espenak, NASA/GSFC)