Location, location, location.

Whether and when you can see the 2012 transit of Venus depends on your location. Key highlights include the four "contacts" near the beginning and end of the transit when Venus appears to touch the edge of the sun. Most of North America sees the beginning of the transit in the afternoon and evening (find a clear western horizon!) on June 5, whereas much of Eurasia sees the end of the transit in the morning (find a clear eastern horizon!) on June 6.

Click to access and enlarge PDF version of map showing visibility of 2012 transit of Venus. Courtesy of Fred Espenak (NASA GSFC), who provides additional transit of Venus data from NASA.

To see an animation of how the sun appears at Region X, near Iceland, see http://youtu.be/3b7a_zXMnnU.

Time is of the Essence

The diagram (click for enlarged PDF version) shows the path of Venus across the sun and the contact times from an earth-centered perspective. However, from different locations on earth, the exact contact times vary by minutes or seconds. That slight difference in times is the essence of a transit's value, for it allowed astronomers to calculate the size of the solar system. The entire event takes about 6 hours 40 minutes. The times in the diagram are in Universal Time, or essentially Greenwich Time.

For simplicity, visit http://www.transitofvenus.nl/details.html, or select a nearby city from one of the Links: Where to Be.
So, is the transit of Venus visible June 5 or June 6?

It depends on your time zone. Generally, for the Americas where it is visible (blue colors on map below) the 2012 transit occurs the evening of Tuesday, June 5, 2012. For Eurasia and Africa where it is visible (sage colors on map), the latter part of the transit is seen the morning of June 6, 2012. Map courtesy of Steven van Roode.

[Note: Some confusion may arise from published tables with a title stating the 2012 transit of Venus is on June 6. By default, these tables are titled by the mid-transit point in Universal Time. Because the middle of the transit occurs just after midnight on June 6 in Greenwich Time (even though it's not visible then in Greenwich), the title nonetheless affirms June 6.]

What if it's cloudy?

If your observing site's weather may be marginal, consider traveling to the TROVE celebration near the Michigan-Indiana border. Multiple attractions will insure a memorable 2012 Transit of Venus experience. Immerse yourself in art exhibits, historical displays, planetarium programs, webcasts, public lectures, and even a Transit of Venus specialty beer! At the fourth contact we will seal a Transit of Venus Time Keg, to be opened when the next transit of Venus pair approaches in 2117 and 2125.

If it's cloudy, you can still experience the transit of Venus in real time. Complement your transit of Venus experience with views and commentary that are broadcast from around the world, including a live webcast from NASA EDGE or from SLOOH. For more featured destinations, see Where to Be, or find a Sun-Earth Day Event Location through the interactive NASA map.

There is plenty of historical precedent for disappointment because of the vagaries of weather, but, hey, that's the nature of studying nature. Many global expeditions outright failed due to poor weather. Consider Henry A. Severn, pictured in New Zealand. The article notes, "Mr. Severn's very complete and skilful arrangements were unfortunately defeated by cloudy weather occurring at the time of the transit. Our readers will probably find it easier to sympathise with his disappointment than to realise his feelings on seeing the labour and preparation of years thus rendered useless by circumstances far beyond his own control. Well might he exclaim, 'l'homme propose--"

Links: Where to Be

http://transitofvenus.nl/wp/where-when/local-transit-times/  
Excellent site automatically calculates your local circumstances (time of sunrise, time of sunset, times of all four contacts, altitude of the sun, etc.), based on your Internet connection. You can easily modify your location with a provided Google map. From Steven van Roode.

http://www.transitofvenus.nl/transit_venus_2012_ingress.jpg  
World map of ingress times (contacts 1 & 2).

http://www.transitofvenus.nl/transit_venus_2012_egress.jpg  
World map of egress times (contacts 3 & 4).

http://sunearthday.nasa.gov/2012/about/event_locations.php  
Interactive map shows NASA Sun-Earth Day Event Locations, keeping you up to date on what's happening in your neighborhood. Upload your own events here, too.

http://www.transitofvenus.org/trove  
TROVE: Celebrating the Riches of the Transit Of Venus. The Michiana area near the Michigan-Indiana, USA, border is a hub of activity related to the transit of Venus. Join us to celebrate the math, science, and art of this celestial phenomenon.
You can still get value out of the transit of Venus experience even if clouds disappoint.

Read more: What if it's cloudy?

Take an exclusive tour of transit of Venus highlights in Indiana, with lectures, art exhibits, historical artifacts on display, webcasts, telescopic sungazing, and a post-transit celebration with Venusian ale at a Michigan microbrewery.

http://eclipse.gsfc.nasa.gov/transit/venus0412.html

The global visibility of the 2012 transit is illustrated with the world map... The entire transit (all four contacts) is visible from northwestern North America, Hawaii, the western Pacific, northern Asia, Japan, Korea, eastern China, Philippines, eastern Australia, and New Zealand. The Sun sets while the transit is still in progress from most of North America, the Caribbean, and northwest South America. Similarly, the transit is already in progress at sunrise for observers in central Asia, the Middle East, Europe, and eastern Africa. No portion of the transit will be visible from Portugal or southern Spain, western Africa, and the southeastern 2/3 of South America."  Courtesy of Fred Espenak.

Contact times (Universal Time) and corresponding altitudes of the Sun for 121 international cities. From Fred Espenak.

Contact times (Universal Time) and corresponding altitudes of the Sun for 60 cities in the USA. To convert to Daylight Saving Time, subtract 4 hours if you are in Eastern Time Zone; subtract 5 hours in Central Time Zone; subtract 6 hours in Mountain Time Zone; subtract 7 hours in Pacific Time Zone. From Fred Espenak.

http://eclipse-maps.com/Eclipse-Maps/Transits_files/ToV2012map_1.jpg
Global map by Michael Zeiler depicts the zones of visibility for the 2012 transit of Venus.

Maps with text in dozens of other languages are also available at http://eclipse-maps.com/Eclipse-Maps/ToV_maps.html, courtesy of Michael Zeiler.

World map of visibility; General description, geocentric data, and list of ingress/egress times for major world cities (PDF). From US Naval Observatory.

Local circumstances of the 2012 transit of Venus for observers in the United Kingdom. From HM Nautical Almanac Office.
Harris Branch Library Hosts Art and Artifacts

The Harris Branch Library at 51446 Elm Road in Granger, IN, will be the site of two special events leading up to the 2012 transit of Venus.

From May 1 to June 9, 2012, the Northern Indiana Pastel Society will coordinate an art exhibit by its members that features the transit of Venus and the curious realm of exo-planets. The call for art invites members to use ideas such as Venus, planets, sun, moon, stars, space, sky, sunset, new worlds, habitable planets or related themes.

Concurrently, the exhibit cases flanking the library entrance foyer will house historical artifacts from previous transits of Venus, including original contents from the US Naval Observatory (USNO) expeditions.

The two events support a collection of transit of Venus attractions, known as TROVE, in the Michiana region. Plan a visit to to this and other TROVE sites for a complete transit of Venus experience.

For the location, contact information, and hours of operation, see the Harris Branch at http://www.mphpl.org/newSite/general/contact_branch.html.

Plan a Community Celebration

Party like it's 2012!

If you are hosting a Transit of Venus celebration, here are some items to consider. See the 2004 Celebration in Mishawaka, IN, for scenes of an observing site.

Months before:

- Scout out event sites, with consideration given to unobstructed sight-lines, security, parking, restroom availability, electricity, internet access, and absence of lights with glare (for telescope viewing later that night).
- Secure permission from landowner or government entity to conduct event at that site.
- Get approval for tents or trailers to be set up adjacent to or near scopes, especially for telescope owners who come from afar.
- Invite amateur astronomers with telescopes and solar filters to set up their scopes for public viewing. Ask them to stay beyond twilight for stargazing session and planet-viewing (Mars and Saturn).
- Invite local musicians or school bands to perform John Phillip Sousa's Transit of Venus March or other ToV music.
- Put out a call for Transit of Venus art through a local art organization or advocate.
- Purchase solar viewing equipment, whether simple or major. Realize that with just solar shades, Venus is small—near the limit (about a minute of arc) of what the human eye can discern. Don’t wait for last minute when supplies are hard to get.

Read more: Plan a Community Celebration

More Articles...

- Night of the Transit
- Travel & Tours

View Mishawaka - Penn - Harris Public Library in a larger map