



Celebrate the Transit of Venus!

South Bend/Mishawaka, Indiana
Latitude: 41.68 Longitude: -86.11



**We invite you to join us in northwest Indiana
to celebrate the 2004 transit of Venus at sunrise on June 8th.**

[Calendar of Events & Timeline](#) (below)



Watch the transit through eclipse shades, solar-filtered telescopes, and other viewing aids.

Protective viewing equipment will be available from the time the sun clears a distant tree line (~5:38 a.m.) through the end of the transit of Venus experience. A secure area near the [P-H-M Planetarium & Air/Space Museum](#) will be open to observers through the night of June 7th. On-site support staff *tentatively* include members of the Michiana Astronomical Society; telescope specialists Roy Kaelin and Jon Slaton (left); planetarium director Art Klinger; and tov.org's Chuck Bueter. On-site amenities include sun-safe equipment, ongoing narration, broadcast of a WWV time signal, concession stands, restrooms, adjacent parking, live webcasts, broadcast of CNN, and the camaraderie of transit of Venus enthusiasts.



In May and June, [Jordan Toyota](#) of Mishawaka will distribute free solar shades for viewing the transit of Venus. Simply visit the Jordan Toyota dealership showroom at Cedar St. and Jefferson Ave. in Mishawaka to get your free protective eyewear, which you can bring to the PHM Planetarium and nearby fields to view the sunrise event. You can also [Share the Experience](#) with U.S. troops deployed in Iraq and Afghanistan, who will be watching the transit concurrently with friends and families in Indiana. Jordan Toyota has donated thousands of shades to the effort. While at Jordan, sign up to win a free Sunspotter.



Several telescopes with solar filters on loan from YMCA Camp Eberhart will be staffed for public viewing. Shown are campers and counselors viewing and recording the sun at [Astrocamp 2003](#). Students and observers participating in [global observing projects](#) may write to [request telescope priority](#) near third contact.



YMCA Camp Eberhart's *Astrocamp* will also provide a Coronado MaxScope70 for viewing the transit through a hydrogen-alpha filter. An H-alpha filter allows you to see prominences and flares in real time; to see Venus beyond 4th contact and into the chromosphere; and to observe active granulation in the Sun's surface. Very cool stuff!



View a projected image of Venus sneaking across the sun on a Sunspotter. Sign up to win a free Sunspotter; provided courtesy of [Jordan Toyota](#).



time.

A [Must-See Transit Venus \(TV\) Screen](#) rear-projects a spotted sun. The "TV Screen", mounted in the telescope's eyepiece holder, allows a larger audience to watch a magnified image of the sun at the same



http://www.publicbroadcasting.net/wvpe/news.newsmain?action=article&ARTICLE_ID=643223

NPR radio interview describes local events on [WVPE Features](#), [Transit of Venus to Happen June 8th](#) "People around the



Transit of Venus Main Observing Site

is near the

P-H-M Planetarium & Air/Space Museum

55860 Bittersweet Road
Mishawaka, IN 46545



Mapquest map

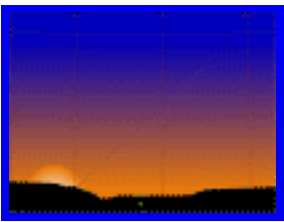
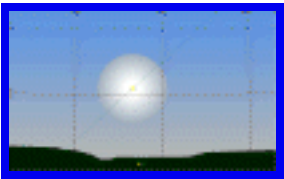
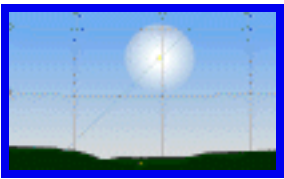
Main Observing Site map

(just north of Penn High School)



Sunrise from Main Observing Site.

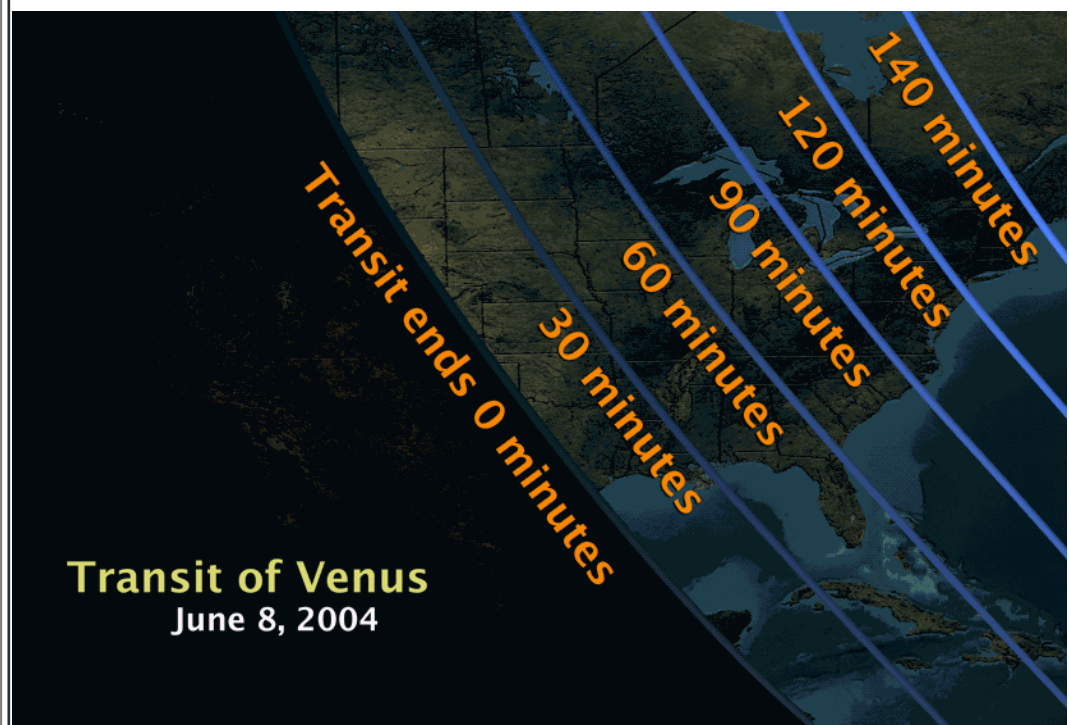
June 8, 2004, in South Bend, Indiana.

<p>Sunrise 5:09 a.m. EST</p>		<p>Sun's altitude = zero degrees Sun's azimuth approx. 57 degrees (6:09 a.m. EDT, 5:09 a.m. CDT)</p>
<p>Third contact 6:05 a.m. EST</p>		<p>Sun's altitude approx. 8 degrees Sun's azimuth approx. 66 degrees (7:05 a.m. EDT, 6:05 a.m. CDT)</p>
<p>Fourth contact 6:25 a.m. EST</p>		<p>Sun's altitude approx. 12 degrees Sun's azimuth approx. 70 degrees (7:25 a.m. EDT, 6:25 a.m. CDT)</p>

(Mercury, above and to right of sun, is shown along the ecliptic here for reference only.)

The Great Lakes region is favorably placed to witness the latter part of the transit of Venus.

Look for the "black drop" effect, third contact, egress across the sun's limb, the halo from Venus' atmosphere, fourth contact, and Venus in the chromosphere (through H-alpha filter) before Venus slips back into the darkness.

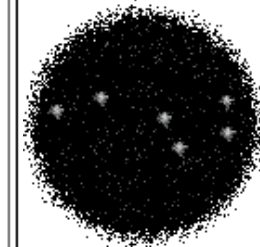
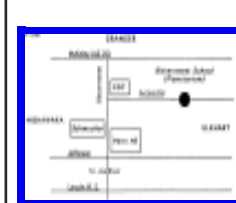


Transit of Venus
June 8, 2004

[Image](#) courtesy of NASA - Goddard Space Flight Center Scientific Visualization Studio.

The **P-H-M Planetarium & Air/Space Museum** features the *Transit of Venus* planetarium program until June 8.

PHM



[PHM School Corporation Home Page](#)

[History of Our Facility](#)

[Show Schedule](#)

[Museum](#)

[Plan a Visit](#)

[Location/Map](#)

[What's Up?](#)

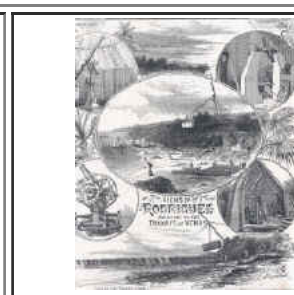
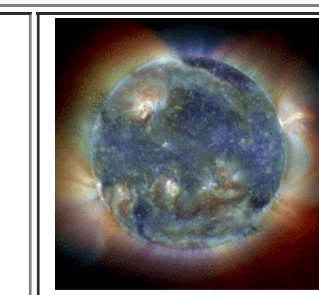
[For Teachers](#)

Planetarium programs are scheduled for the following dates and times:

- *Transit of Venus*, Sunday, June 6, 1:00 pm
- *Transit of Venus*, Monday, June 7, 6:00 pm & 8:00 p.m.
- *Sky Tonight*, Monday, June 7, 9:00 p.m.

[Please note that scheduled shows are subject to change and to limited admission when the crowds exceed the capacity of the facility.]

A **collection** of artifacts and prints at the [P-H-M Planetarium & Air/Space Museum](#) will relate history and art to the transit of Venus, including these examples.



Free resources courtesy of [Jordan Toyota](#) of Mishawaka, Indiana, include informational flyers, eclipse shades, an on-site Sunspotter, posters, signage, and more. Free resources from Jordan Toyota (including the [Transit of Venus program](#) in a DVD/CD set), NASA, and JPL will also be distributed at the June 8th gathering at the P-H-M Planetarium & Air/Space Museum.

Celebrate the dance of the planets with *Transit of Venus Sunrise Ale*.



The [Mishawaka Brewing Company](#) has brewed a special batch of *Transit of Venus Sunrise Ale* to commemorate the celestial event. The ale is an E.S.B. style, rich in hop aroma & flavor. Six original labels will feature artwork that celebrates the historical significance and future implications of planetary transits. *Transit of Venus Sunrise Ale* is now available at 3703 N. Main St., Mishawaka, Indiana.

Peruse and contemplate the *Transit of Venus Art Exhibit* by regional artists.



Professional and amateur artists alike will convey their interpretations of the transit of Venus experience at the [Transit of Venus Art Exhibit](#). The collection of new art will be displayed May 7 through June at the Glance Eyewear Gallery, 1639 N. Ironwood Dr., Suite 2, South Bend, Indiana. Featured will be *The Sun as Art* exhibit from NASA Goddard Space Flight Center.

Calendar of Events & Timeline

All times are in Eastern Standard Time (EST), or "Chicago time."

Thursday, June 3

5:00-7:00 p.m.

Artists' Reception at Glance Eyewear Gallery, 1639 N. Ironwood Dr., Suite 2, South Bend, IN.

Saturday, June 5

8:30-10:30 p.m.

[Matt Rumley](#), the featured musician on the [Transit of Venus planetarium program](#), performs at The Pub, which serves [Transit of Venus Sunrise Ale](#). The Pub is located on the northwest corner of Grape Rd. and Cleveland Rd. (S.R. 23), behind the MFB Bank.

Sunday, June 6

1:00 p.m.

Transit of Venus program at the [PHM Planetarium & Air/Space Museum](#), 55860 Bittersweet Road, Mishawaka, (in Bittersweet School); FREE and open to the public.

Monday, June 7

9:00 a.m. to 5:00 p.m.

[Transit of Venus Art Exhibit](#) at Glance Eyewear Gallery; FREE and open to the public.

6:00 p.m.

Transit of Venus program at the PHM Planetarium & Air/Space Museum; FREE and open to the public.

8:00 p.m.

Transit of Venus program at the PHM Planetarium & Air/Space Museum; FREE and open to the public.

9:00 p.m.

The Sky Tonight program at the PHM Planetarium & Air/Space Museum; FREE and open to the public.

9:30 p.m.

Stargazing with telescopes at the [Main Observing Site](#), north of the Penn High School tennis courts; FREE and open to the public.

12:00 Midnight

Live [webcast](#) will track the progress of Venus transiting the sun; shown at the Main Observing Site, north of the Penn H.S. tennis courts; FREE and open to the public.

Tuesday, June 8

(At Main Observing Site, north of the Penn High School tennis courts;
FREE and open to the public.)

12:00 Midnight

Live webcasts broadcast from Greece will feature the start of the transit until Venus is within the sun (First through Second Contacts). Internet connection is courtesy of Comcast.

1:00 a.m. to 4:30 a.m.

Unofficial downtime...

4:30 a.m.

Public welcome to gather as telescope and equipment preparations resume. Free solar shades and transit of Venus flyers, courtesy of Jordan Toyota, will be distributed while supplies last.

Intermittent narration throughout the morning will describe ongoing events and will address questions from the audience. A limited number of NASA posters, CDs, stickers, 3D postcards, and flyers will be given away during the program.

Webcast images of the transit continue.

5:10 a.m.

Sunrise

5:38 a.m. (approx.)

The sun clears the distant tree line to the east northeast.

Solar-filtered telescopes are available for viewing a magnified image of Venus in transit in “white light.” Look for sunspots.

A hydrogen-alpha telescope equipped with a camera will display the solar image on a monitor. Look for solar prominences along the sun’s edge and notice granulation of the sun’s surface.

As Venus nears the edge of the sun, look for the notorious “Black Drop Effect,” when Venus appears to stretch out and to touch the edge of the sun.

Tuesday, June 8

(continued)

6:05 a.m.

Third Contact occurs when Venus touches the inside edge of the sun. A WWV time signal will allow observers to time the instant of third contact for global projects to measure the distance to the sun.

After Venus has “pushed through” the limb of the sun, look for a halo of light around Venus that indicates the presence of an atmosphere.

6:25 a.m.

Fourth Contact occurs when Venus no longer touches the outside edge of the sun. The transit of Venus is technically ended.

Note that Venus may still be visible briefly outside the edge of the sun through the H-alpha telescope; look for a partial outline of Venus in front of prominences.

9:00 a.m. to 7:00 p.m.

Transit of Venus Art Exhibit at Glance Eyewear Gallery, 1639 N. Ironwood Dr., Suite 2, South Bend, IN; FREE and open to the public. The art exhibit, which features *The Sun as Art* from NASA Goddard Space Flight Center, continues through June.

June 6, 2012

The next transit of Venus, at sunset.

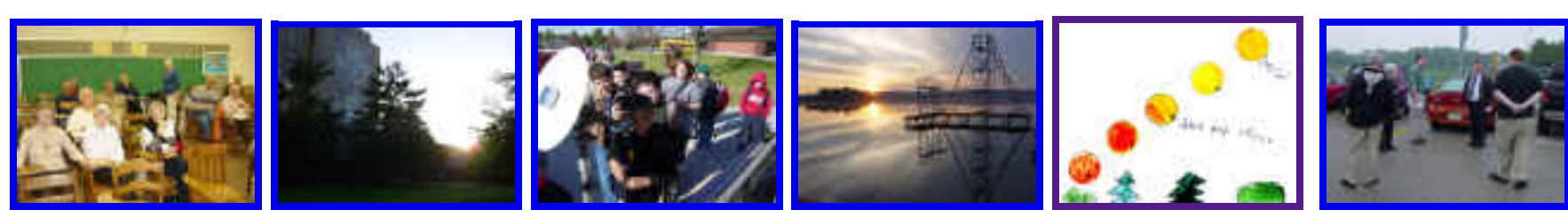
Local vistas have favorable horizons.

		<p>South Bend, IN</p> <p>Taken from Douglas Rd., east of Capital Ave.; June 9, 2003, at 5:25 a.m. EST.</p>
		<p>Mishawaka, IN</p> <p>Taken from Buckeye Rd., just south of Cleveland Rd. June 9, 2003, at 5:30 a.m. EST.</p>
		<p>Granger, IN</p> <p>Taken from Currant Rd., just north of Cleveland Rd. June 9, 2003, at 5:35 a.m. EST.</p>
	<p>Notre Dame, IN</p> <p>Taken from the campus of University of Notre Dame, with "Touchdown Jesus" in the left foreground. June 9, 2003, at 6:00 a.m. EST (near time of third contact in 2004).</p>	
<p>Note: On June 8 sunrise near South Bend, IN, is technically 5:10 a.m. EST. The third contact of Venus (internal egress) begins approximately 6:05 a.m. EST.</p> <p>This part of Indiana observes Eastern Standard Time (EST), which coincides with Central Daylight Time (CDT). For insight into that elusive Hoosier Time (tongue-in-cheek called HT) see http://webexhibits.org/daylightsaving/f.html.</p>		

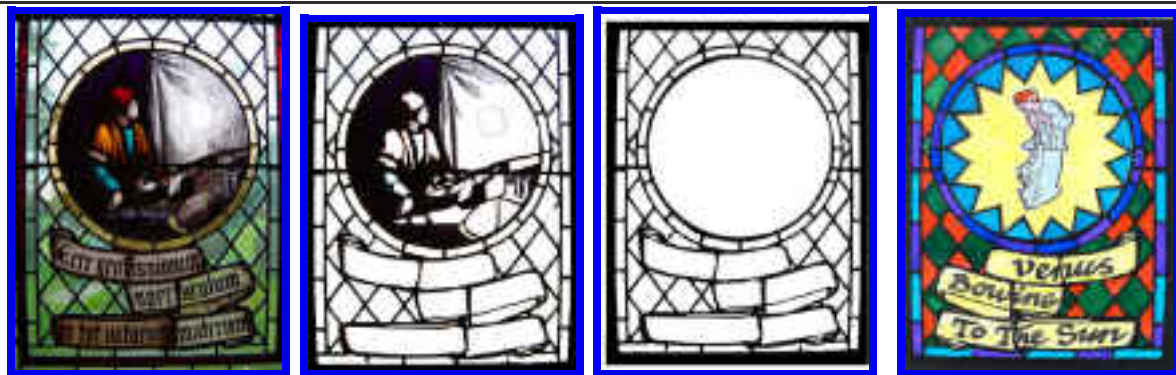
Sungazers enjoy solar viewing in preparation of the transit of Venus.

			<p>Elementary school students view enormous sunspots through protective solar glass and through a refractor telescope with a solar filter over the objective lens (November 2003).</p>
			<p>Neighbors enjoy the spectacle of the spotted and flaring sun.</p>

The community prepares for the transit of Venus.



Commemorate your own transit of Venus experience or expectation.

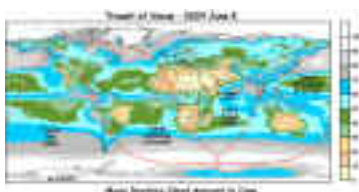
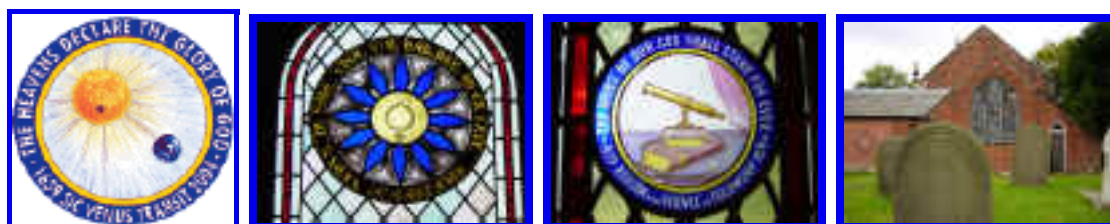


Venus Bowing to Sun by Cindy Tachman.

Jeremiah Horrocks was the first person to record a transit of Venus. A [stained glass window](#) in St. Michael Church (in [Hoole](#), England) celebrating his 1639 achievement envisions Horrocks looking at a projection of the sun on a large sheet. (Actually, it was a 6-inch sheet of paper, so allow for artistic license.)

Create your own stained glass window to commemorate the transit of Venus. Print the [black and white template](#) on a sheet of paper or a clear transparency. Design and color your own image and words. Fasten the *transparency* version of your stained glass to a regular window. For ideas of what to draw in the stained glass circle (the roundel), see [Things Round](#). As an alternative, simply color the window *with* Horrocks ([horrocks_bw4.jpg](#)) and add your own words of celebration. For historic phrases that could fill the stained glass banners, see [Quotes](#).

In subsequent centuries, new stained glass windows have been added to St. Michael Church. See [hoole.htm](#) for windows and scenes.



<http://home.cc.umanitoba.ca/~jander/transit/noam.htm>

Frequency of cloud cover and weather statistics for planning a North American trip to observe the transit of Venus. Though our weather prospects are not as good as [Iraq viewing conditions](#), we hope for the best and offer additional attractions beyond the solar spectacle itself. And if the weather is cloudy we have at least three items of solace:

1. We will broadcast live webcasts from clear sites overseas, and other local activities will continue (planetarium programs, artifacts exhibit, art exhibit, etc.).
2. The Mishawaka Brewing Company has *Transit of Venus Sunrise Ale* to cry in.
3. It could be worse--remember the travails of LeGentil.

For more information about the region, see the [South Bend-Mishawaka Convention and Visitors Bureau](#).



We look forward to seeing you.

www.transitofvenus.org

