

2012



NOVEMBER_SHORT 24 | 08:25

Chuck

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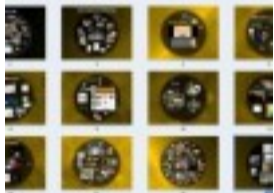
2012 Transit of Venus

With the 2012 transit of Venus over, a vast collection of images are available on the internet. This page offers a representative sampling of images, videos, observer reports, science findings, new papers, and other odds and ends, several of which are my own. It is admittedly incomplete as I wind down my transit of Venus outreach and website maintenance. Thanks for having followed. - Chuck B.



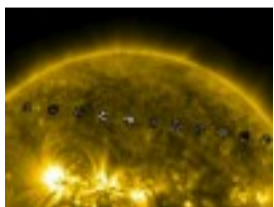
<http://youtu.be/4Z9rM8ChTjY>

NASA | SDO's Ultra-high Definition View of 2012 Venus Transit; stunning video from Solar Dynamics Observatory on YouTube.



history/2004/365-a-community-celebrates

Paper: *A Community Celebrates the Transit of Venus*; summary of extensive transit of Venus outreach by Michiana educators, businesses, volunteers, and amateur astronomers. Text outlines prezi images at <http://prezi.com/3tgyibho9g-w/transit-of-venus-across-the-sun/>, and was presented at 2012 GLPA Annual Conference in Pittsburgh, PA. An audio file of the talk summarizing the highlights is at www.transitofvenus.org/docs/2012GLPA-Pittsburgh2.mp3.



<http://prezi.com/3tgyibho9g-w/transit-of-venus-across-the-sun/>

Prezi: *Transit of Venus Across the Sun*. An image-intensive prezi captures the multiple events that occurred before and during the 2012 transit of Venus in northern Indiana and southwestern Michigan, also known as Michiana. Among the diverse components were a planetarium program, a treasure hunt, a lecture series, a symphony performance, a newsletter, a motor coach tour, original videos, art exhibits, historical displays, public outreach events, Sun Funnel workshops, social media initiatives, related products by small businesses, multiple observing opportunities, and a time capsule.



history/2004/366-poster-transit-of-venus-time-keg

Poster: *Transit of Venus Time Keg*; shown at 2012 GLPA Annual Conference in Pittsburgh, PA.

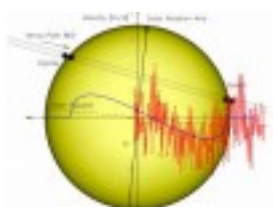


history/2004/361-viewing-great-timing-difficult

Blog: *Viewing Great, Timing Difficult*; summary of events from the big day, June 5, 2012. Clear skies allowed viewing, but timing the moment of internal contact was difficult to do.

[misc/363-vision-for-future](#)

After the transit of Venus, political candidates from the 2012 election year were invited to share their visions of the future--not of four years, but 104 years, when the next transit of Venus will occur. What is the role of observational science such as the transit of Venus in our country's well-being?

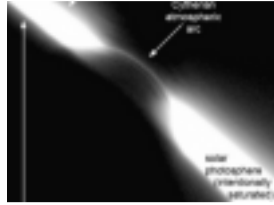


<http://mnras.oxfordjournals.org/content/early/2012/12/10/mnrasl.sls027.full.pdf?keytype=ref&ijkey=0VPPUJI6ZcCKg5G>

Italian astronomers measured the Rossiter-McLaughlin effect during the 2012 transit of Venus, when the sun's spectral lines are distorted slightly. The experiment is a precursor to having a 40 meter scope with spectrograph studying the orbital properties of Earth-like exoplanets; Monthly Notices of the Royal Astronomical Society, December 11, 2012. Courtesy of Paolo Molaro.

<http://arxiv.org/abs/1210.8451>

Venus transit, aureole and solar diameter, by Wenbin Xie, Costantino Sigismondi, Xiaofan Wang, and Paolo Tanga. "To measure the solar diameter using the transits...compare the ephemerides of the internal contact timings with the observed timings. The transits of Venus of 2004 and 2012 gave the possibility to apply this method, involving a planet with atmosphere, with the refraction of solar light through it creating a luminous arc all around the disk of the planet. The observations of the 2012 transit made to measure the solar diameter participate to the project Venus Twilight Experiment to study the aureole appearing around it near the ingress/egress phases."



<http://sites.williams.edu/transitofvenus2012/glenn-schneiders-images/>

Venus Twilight Experiment coronagraph on Haleakala

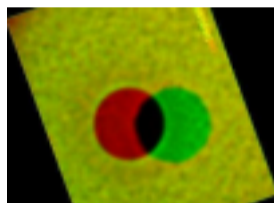
<http://www.aeonmagazine.com/nature-and-cosmos/dava-sobel-transit-of-venus/>

Venus Still Beguiles, by Dava Sobel. Writing of her 2012 experience, "Once seen as the Holy Grail of the heroic age of astronomy, this year's transit of Venus was the most democratic ever." From Aeon Magazine.



images/stories/nasa-largest-event.jpg

A slide from the Sun-Earth Day team at NASA Goddard Research Center suggests the 2012 transit of Venus was the "Largest NASA Event Ever...All NASA Internet Stats--Broken."



<http://www.astrode.de/nordkap/venustr2012.htm>

Venustransit 2012, Parallaxenmessung mit Hilfe der Sonnengranulation; Measuring the astronomical unit by combining images of the 2012 transit of Venus from Norway and Australia.

<http://munin.uit.no/bitstream/handle/10037/4178/thesis.pdf?sequence=2>

Maximilianus Hell (1720-1792) and the Eighteenth-Century Transits of Venus. A Study of Jesuit Science in Nordic and Central European Contexts, Per Pippin Aspaas University of Tromsø, 2012. New thesis about Father Hell and transits of Venus.

http://sites.williams.edu/transitofvenus2012/files/2012/07/2012JAHH__15__3P.pdf

Lomonosov, the Discovery of Venus's Atmosphere, and Eighteenth Century Transits of Venus, by Jay M. Pasachoff and William Sheehan; Paper suggests Lomonosov, to whom the discovery of Venus' atmosphere has been historically attributed, had a "preconceived bias for believing that the other planets must have atmospheres." Therefore, several other observers "should receive credit for first detecting the aureole due to refraction of sunlight by the atmosphere of Venus during a transit." From Journal of Astronomical History and Heritage, 15(1), 3-14 (2012).

<http://arxiv.org/abs/1210.0873>

The Hetu'u Global Network: Measuring the Distance to the Sun Using the June 5th/6th Transit of Venus, by Jacqueline K. Faherty, David R. Rodriguez, Scott T. Miller. Rodriguez writes, "Team Hetu'u presents the result of our outreach collaboration to bring together students from across the world, watch the transit of Venus, and measure the distance to the Sun. Our best estimate of the distance: 152+/-30 million km; not very precise, but the goal was the outreach."

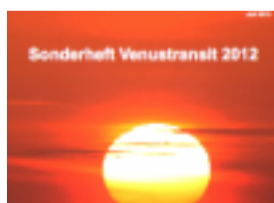
<http://www.newscientist.com/article/dn22276-sizing-up-a-new-measuring-ruler-for-the-solar-system.html>

At its 2012 meeting in Beijing, the IAU redefined the Astronomical Unit to 149,597,870,700 metres. The previous definition accounted for solar mass, but that's always changing, so new value locks in distance.



<http://rasc.ca/transit-2012-results>

Results from the Royal Astronomical Society of Canada, which notes, "Maritime Canada was plagued by clouds and a number of our Maritime members travelled west to observe the transit."

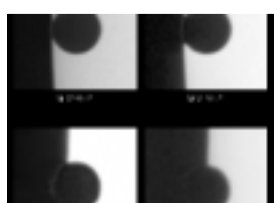


http://www.gva-hamburg.de/Sternkieker_Sonderheft_Venustransit.pdf

Sternkieker magazine special edition offers 46 pages of images from 2012 transit of Venus.

<http://youtu.be/IHz6OCj0Dtk>

A documentary by Nebeto, dedicated to the Transit of Venus 2012; clouds challenge observers.



<http://www.sussenbach.eu/Venus%20Transit%20Expedition5.pdf>

Observer John Sussenbach reports on his personal expedition to Turkey.

<http://www.facebook.com/groups/108400462513165/>

Poster: Transit of Venus Time Keg



OCTOBER_SHORT 31 | 08:03

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Proceedings of the Great Lakes Planetarium Association 48th Annual Conference
Dale Smith, Editor

Abstract:

In past centuries, observers of transits of Venus have written messages for future witnesses of the celestial phenomenon. During and after the 2012 transit of Venus, spectators reflected on and shared their experience for their 22nd century counterparts. The written personal records and other transit of Venus artifacts from 2004 and 2012 will be sealed in the Transit of Venus Time Keg, a stainless steel time capsule made from a beer keg.



Great Lakes Planetarium Association (GLPA) members can contribute their messages at the GLPA 2012 Annual Conference in Pittsburgh, PA, where the Transit of Venus Time Keg will be sealed, bringing closure, literally, to this popular and historically significant solar system alignment. A commemorative plaque celebrates nature's celestial spectacles, and invites people to open the Time Keg after 100 years as the 2117 and 2125 transits of Venus approach.

Poster Text:

The Transit of Venus Time Keg is a time capsule containing artifacts and personal reflections from the 2012 transit of Venus. It is intended to capture elements of the celestial phenomenon in the 21st century and to inspire observers in 100 years when the 2117 and 2125 transits of Venus approach.

[Read more: Poster: Transit of Venus Time Keg](#)

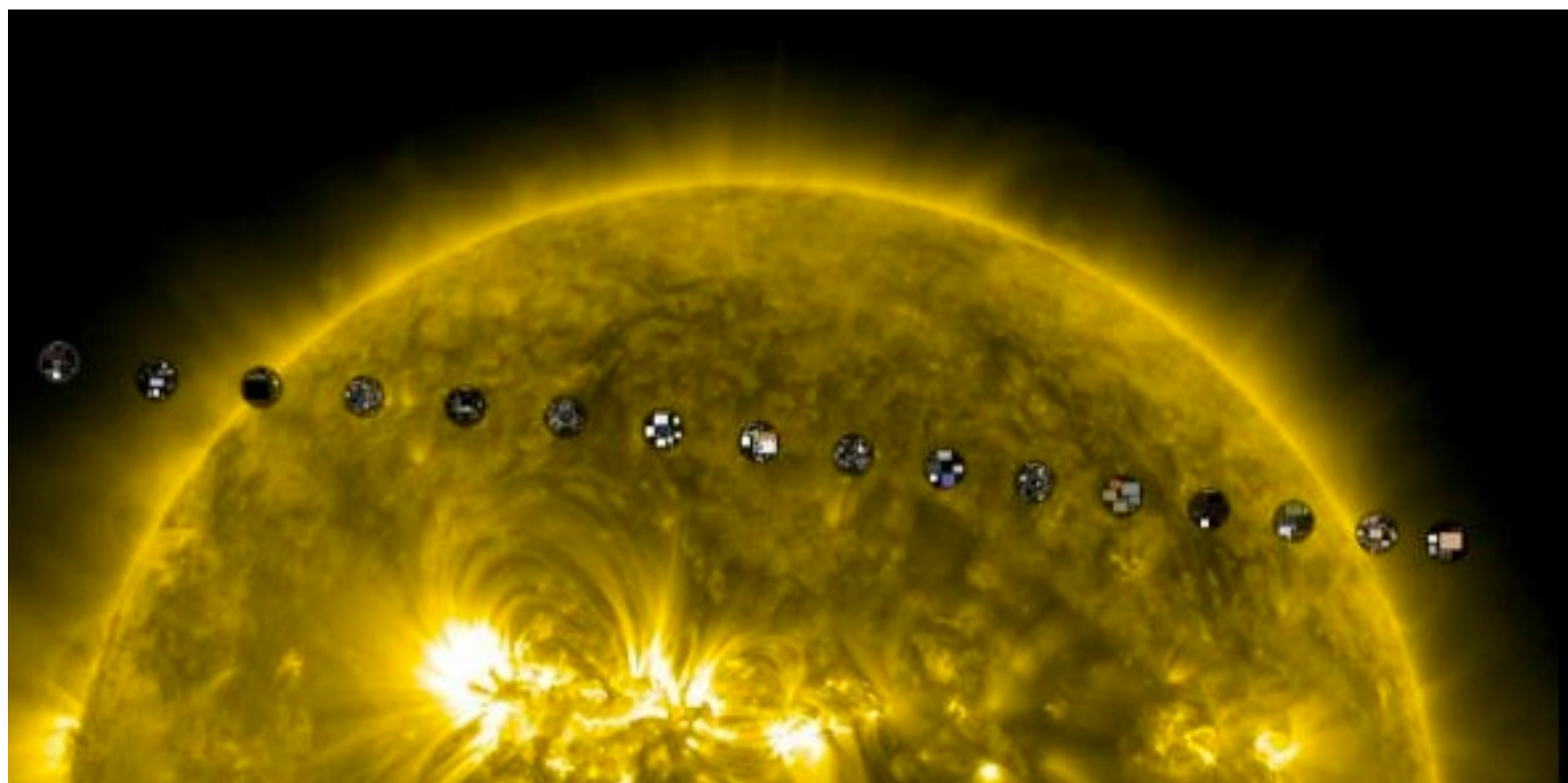
Community Celebrates



OCTOBER_SHORT 29 | 09:19

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Reprinted with permission from
Proceedings of the Great Lakes Planetarium Association 48th Annual Conference
Dale Smith, Editor

Abstract:

Astronomy educators and enthusiasts near the Michigan-Indiana border embraced the 2012 Transit of Venus as a community celebration. Among the diverse components were a planetarium program, a treasure hunt, a lecture series, a symphony performance, a newsletter, a motor coach tour, original videos, art exhibits, historical displays, public outreach events, Sun Funnel workshops, social media initiatives, related products by small businesses, multiple observing opportunities, and a time capsule. This talk parallels the interactive prezi *Transit of Venus Across the Sun* at <http://prezi.com/3tgyibho9g-w/transit-of-venus-across-the-sun/>.

Text:

For the 2012 transit of Venus, a community of astronomy educators and enthusiasts near the Michigan-Indiana border (dubbed Michiana) embraced the 2012 Transit of Venus as a community celebration. Outreach efforts were diverse, extending into schools, businesses, institutions, and informal education venues. An interactive presentation *Transit of Venus Across the Sun* at <http://prezi.com/3tgyibho9g-w/transit-of-venus-across-the-sun/> has sixteen circles laden with images and embedded videos that suggest the extent of the community effort. Highlights of each black pearl on the string--each a talk unto itself--are summarized below. An audio file of the talk, delivered in the paper session at the Buhl Planetarium, is at <http://www.transitofvenus.org/docs/2012GLPA-Pittsburgh2.mp3>.



Planning

Diverse partners stepped up to plan and execute events before and during the transit of Venus. Among them were staff from planetariums, a math center, University of Notre Dame, a microbrewery, art galleries, astronomy clubs, NASA, and small businesses.

Talks, Papers & Workshops

Prior to June 2012, I presented papers and posters at the National Science Teacher's Association (NSTA) National Conference in Indianapolis; the Great Lakes Planetarium Association (GLPA) in Urbana, IL; the Astronomical Society of the Pacific (ASP) in Baltimore, MD; the American Astronomical Society (AAS) in Austin, TX; and the Michiana STEM Forum IV in South Bend, Indiana. Additional talks were at astronomy clubs, Rotary Clubs, and public venues in Ohio, Michigan, Illinois, Wisconsin, and Indiana. A sample is at <http://youtu.be/4bufgnyXw7c>. Publications included *Planetarian*, *Journal of the International Planetarium Society*, *Universe in the Classroom*, *The Classroom Astronomer*, and regular newsletters for the PHM Digital Video Theater.

Stump Speech

After the 1639 transit of Venus, Jeremiah Horrocks complained about two things. First, he didn't have enough time to warn others about the impending alignment. Second, he had to compete with sports. Of his friends, Horrocks wrote, "Most of them care little for trifles of this kind, preferring rather their hawks and their hounds."

Today science educators are still competing with the equivalent of hawks and hounds. If we as a nation want to prosper through math and science, then we need to celebrate math and science in action. Embrace it with the same zeal as sports and other popular culture. The transit of Venus is that opportunity to celebrate.

Outreach

The Michiana community stepped up to prepare students and the public alike for the transit of Venus. Venues included libraries, planetariums, a community math center, and parks. Activities occurred at Science Alive, a family event at the main library in South Bend; Prairie Vista University, a five-session after-school program at an elementary school; AstroFest, a school district event that was duplicated at South Bend Union Station; AstroCamp, a week-long summer camp for kids; and the Michiana Star Party.

To broaden our reach into the community and to involve individual business, the Riverbend Community Math Center coordinated a regional treasure hunt for families, called TROVE Adventure. About two dozen small businesses and institutions each exhibited a historical artifact with signage describing the respective item. Families who picked up ten Keywords from among the sites received free solar shades as a reward.

[Read more: Community Celebrates](#)

Closure for Transit of Venus



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With the sealing of the [Transit of Venus Time Keg](#), the bulk of my public outreach for this celestial alignment comes to a close. Members of the Great Lakes Planetarium Association (GLPA) added the final messages to future observers before I caulked and bolted the cover and side plug into place. The hospitality suite at the GLPA 2012 Annual Conference was a fitting site for marking the end of a long but enjoyable effort.



Earlier in the conference I presented my [concluding paper and prezi](#), *A Community Celebrates the Transit of Venus*. I invite you to peruse the [prezi](#) in depth to get a sense of how one community embraced the opportunity to promote math and science. An audio recording of that talk is [online](#).

This transitofvenus.org website still needs material on the aftermath of June 5, including images of the 2012 transit of Venus itself and results of scientific inquiries. I hope to add valuable content here in the future, but at a leisurely pace.

In the interim, I will be casually building the website www.nightwise.org, a portal to my other interests and to astronomy in my community.

I thank the many supporters who have encouraged and supported Transit of Venus education and public outreach. In particular I thank my wife Mary, my kids Eric and Sarah, Steven van Roode, Patrick Rumley, and the many parties seen in the [prezi](#). That was fun.



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