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Video, podcasts, phone apps, virtual reality sites, animations, and other media feature the celestial interaction of the sun, earth, and Venus.

Links: Video & New Media

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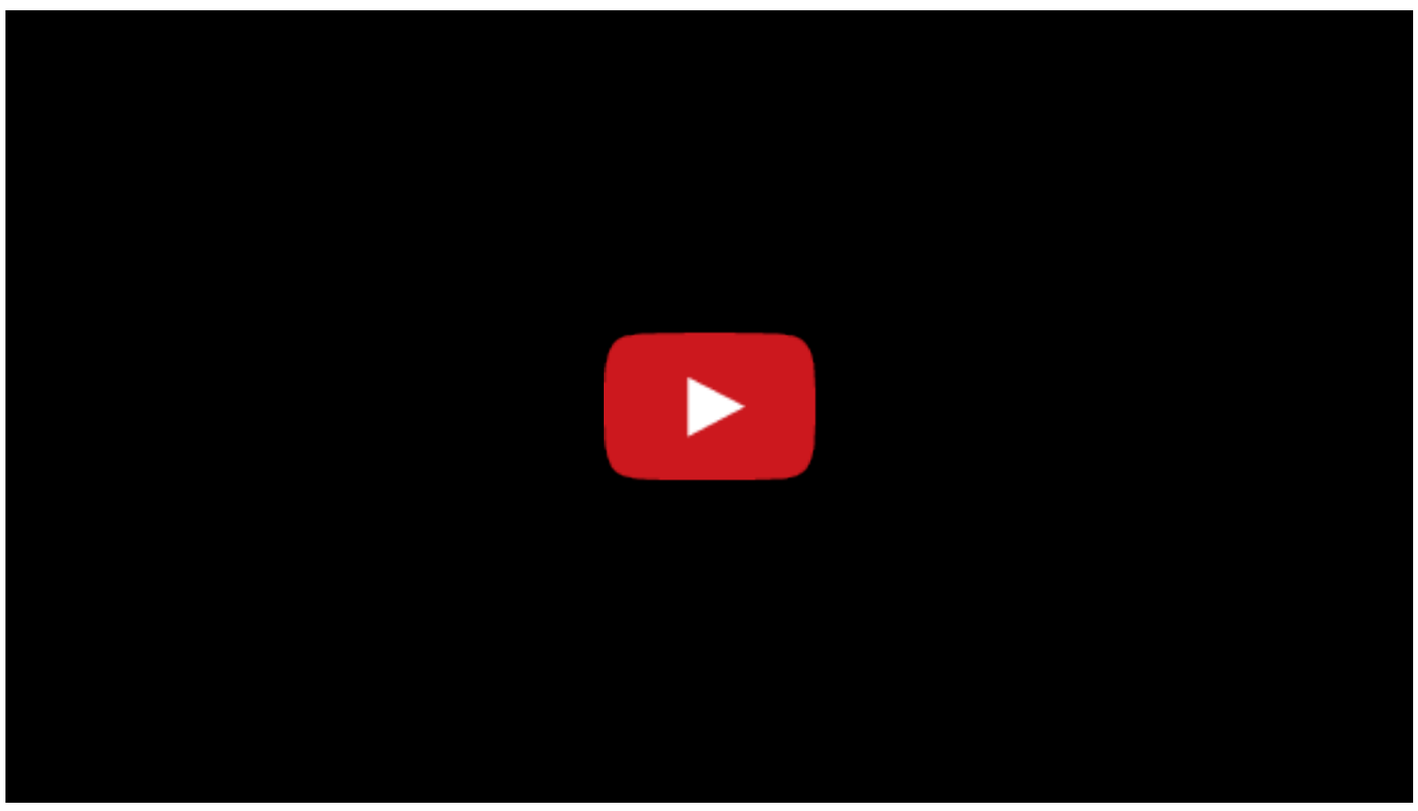
http://www.facebook.com/group.php?v=wall&gid=108400462513165
Transit of Venus Group features dialogue and links on Facebook.

http://www.youtube.com/user/transitvenus
VenusTransit on YouTube lists videos related to the transit of Venus. **Featured video** is a four-minute trailer, below, available as full-dome video for digital theaters and planetariums.



http://transitofvenus.nl/wp/
Transit of Venus Project **Blog**, from Steven van Roode.

https://twitter.com/#%21/tov2012
@tov2012 is the Twitter account that steers you to transit-related content; maintained by Steven van Roode

http://sunearthday.nasa.gov/2012/multimedia/

Transit of Venus multmedia from NASA Sun-Earth Day.

http://vimeo.com/channels/ourlasttransitofvenus
our last Transit of Venus, multiple videos from Outreach Europlanet.

http://www.youtube.com/user/UTSIC/videos
Videos from all talks at Transit of Venus 2012 Symposium at University of Toronto, 28 April 2012.

http://www.youtube.com/playlist?list=PL420FA63E0D3D1393&feature=plcp
NASA Sun-Earth Day collection of transit of Venus videos.

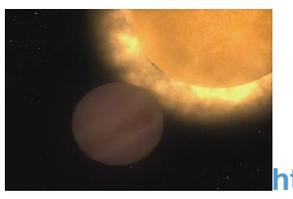
http://kepler.nasa.gov/multimedia/animations/
Kepler mission provides excellent animations of Science Concepts, Artist Concepts, and Types of Worlds.

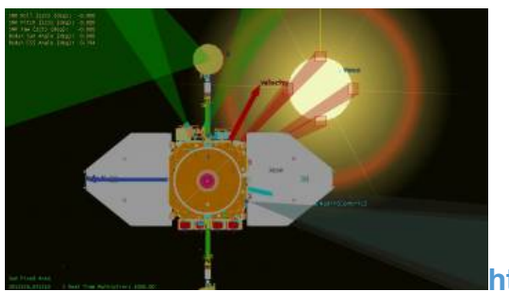

http://solarsystem.nasa.gov/yss/display.cfm?Year=2012&Month=6&Tab=Classrooms
NASA Year of the Solar System Educational Resources offer data, downloadable products, images, video, podcasts, animations, interactives, and networks.


http://vimeo.com/channels/ourlasttransitofvenus
Our Last Transit of Venus is a documentary highlighting three groups: "scientists who will observe the Transit to study Venus and exoplanets, amateurs and students who will redo the experiment of determining the size of the Solar System and profession and/or amateur historians with the intention to observe the Transit with 18th and 19th century instruments."

http://prezi.com/3ytapkszv2rh/transit-of-venus/
Non-linear images and text introduce the chronology of Transit of Venus events; limited text in this version, so you can narrate while presenting and move around or skip sections at will. Best viewed in full screen; see Prezi website for tips if you are projecting this presentation. **Transit of Venus** is my inaugural effort on Prezi.

http://prezi.com/9r9blzqx_tep/transit-of-venus-image-blast/ *Transit of Venus Image Blast* is a compilation of many images that are almost all my own copyright or public domain, such as NASA content. Requires a while to download fully. Images may be used freely for educational purposes.


http://en.wikipedia.org/wiki/File:Transit_of_Venus_animation.ogg#globalusage
NASA animation zooms out from the surface of Venus to beyond earth's orbit, showing a transit of Venus.


http://www.youtube.com/watch?v=4QtZFkDpemY&feature=player_embedded
NASA SDO animation shows the Solar Dynamics Observatory aligned to witness the 2012 transit of Venus. A higher-res version is available for free download from **VenusTransit_2012158.wmv**

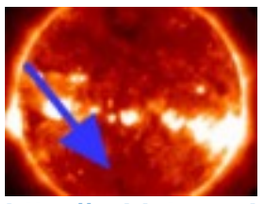

http://youtu.be/41f2gN0decg
UNESCO -17- Science and Illustration: The Transit of Venus is a high-quality production that chronicles the challenging 18th century expeditions of Chappe, Hell, Cook and others. Video conveys the confluence of factors in the Age of Enlightenment that propelled the global quest to determine the size of the solar system; 46 minutes.

http://365daysofastronomy.org/2009/12/05/december-5th-the-celestial-alignment-of-2012/
"Celestial Alignment of 2012" is featured on the 365 Days of Astronomy **podcast** for December 5, 2009; by Chuck Bueter.

http://365daysofastronomy.org/2011/06/05/june-5th-transit-of-venus/
Astronomer Jay Pasachoff reflects on past transits of Venus while anticipating the 2012 event and the science to be gleaned from it.

http://natwaddell.posterous.com/tag/transitofvenus
Transit of Venus blog by Nat Waddell

http://trace.lmsal.com/transits/venus_2004/
TRACE spacecraft is the only satellite to observe the 2004 transit of Venus in visible. Among this collection of **videos** is one showing the "black drop" effect. TRACE scientists describe this as the "consequence of the telescope point-spread function and, more interestingly, the light-scattering properties of the atmosphere of Venus."



http://sxidata.ngdc.noaa.gov/archive/browse/special/SXI_SPECIAL_20040608_VENUS_09H.MPG
In images from the GOES spacecraft's Solar X-Ray Imager (SXI), Venus appears as a dark disk about 1/30th the Sun's apparent diameter. Since the Sun's corona extends well above the disk, Venus was visible in silhouette for approximately 9 hours, versus the 6 hours seen from Earth. **Video** SXI_SPECIAL_20040608_VENUS_09H.MPG (1.9 MB MPEG-1, 7 sec.) from NOAA's Space Weather Prediction Center.

http://www.youtube.com/watch?v=9e8kVXKOCTE
Launchpad: Transits by invites you to "discover how scientists used the last Venus transit and a geometric technique called parallax to verify the distance between sun and Earth. Find out what scientists hope to learn the next time Venus makes a shadow on the face of the sun." From NASA eClips.

http://youtu.be/-rNQFUqt49Q
Penn High School Orchestra performs John Philip Sousa's *Transit of Venus March* in 2004.

http://3dsun.org/
Free **app** for iPhone and iTouch gives daily updates on solar activity with images and text courtesy of Solar Terrestrial Relations Observatory (STEREO). Available for free download at the iTunes App Store at http://itunes.apple.com/us/app/3d-sun/id347089078.

http://www.youtube.com/watch?v=7VbRPlm6aAs
NASA Connect segment that explains the Venus Transit and compares it to a solar eclipse.

http://www.venus-transit.de/
User- adjustable **Applets** about the transit of Venus; by Jürgen Giesen; (available in English and German)..

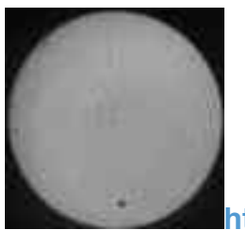
- Transit Observer
- The Phases of Mercury and Venus
- Planetary Motion of Mercury, Venus and Mars
- Geocentric Motion
- Transit Motion

Jules Janssen uses "photographic revolver" to capture series of images for 1874 transit of Venus. German text at http://kuffner-sternwarte.at/2004/Venustransit/1874.html. Note: Though Janssen did use his device for the 1874 event, this extant series of images may have been from a simulated transit as part of a test by Janssen.

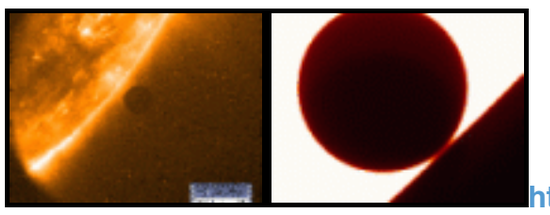
http://adsbit.harvard.edu/cgi-bin/nph-iarticle_query?journal=MNRAS&year=1874&volume=..34&letter=.&db_key=AST&page_ind=350&plate_select=NO&data_type=GIF&type=SCREEN_GIF
The design of Janssen's "photographic revolver" is illustrated and described; from NASA Astrophysics Data System (ADS). There are two articles, one after the other, as noted by Peter Abrahams:

- De la Rue, Warren. On a Piece of Apparatus for carrying out M. Janssen's Method of Time-Photographic Observations of the Transit of Venus. M.N.R.A.S. 34 (May 1874) 347-353.
- Capello, J. On an Apparatus Designed for the Photographic Record of the Transit of Venus. M.N.R.A.S. 34 (May 1874) 354-356 (translation of letter to De la Rue.

http://vt-2004.solarphysics.kva.se/movies/
Swedish 1-m Solar Telescope on La Palma; images and movies include black drop effect and the "elusive aureole outlining the disk of Venus. It is caused by sunlight being refracted towards us in the atmosphere of the planet."



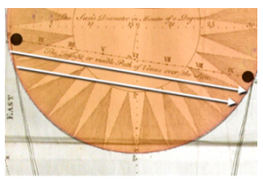
http://www.youtube.com/watch?v=8LkHm8jS1qg
Video of 1882 Transit of Venus re-animated from David Peck Todd's glass negatives; by Anthony Misch and William Sheehan.



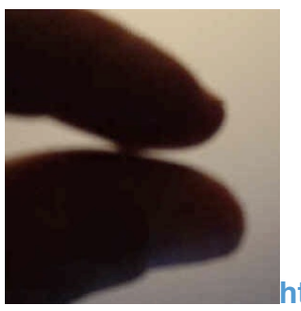
http://vestige.lmsal.com/TRACE/transits/venus_2004/
From the perspective of the TRACE spacecraft, including movies with time codes.

http://www.youtube.com/watch?v=bBxq4IxzJFE
Explaining the Transit of Venus on a children's television show called 'Totally Wild', with emphasis on James Cook's effort.

http://www.wnit.org/outdoorelements/1000/1003/1003.html
Planetarium director Ruth Craft uses a photometer and orrery to simulate the Kepler spacecraft monitoring a star with transiting planets. In the demonstration, computer software generates a light curve that is projected on the domed ceiling, where visitors can discern the presence and characteristics of companion planets. See *How the Kepler Telescope Works* (Segment #3 of Episode #1003); from WNIT Outdoor Elements.



http://www.youtube.com/watch?v=LaihjCw76vc
Using Parallax Angle of Venus to Measure Distance to Sun. Video shows how two observers at different locations on earth see two distinct chords across the sun. The angular distance divided by two is the parallax angle of Venus, which can mathematically yield the distance from earth to the sun.



http://www.youtube.com/watch?v=gm_kZd_wGkE&feature=player_embedded
Black Drop Effect Simulated With Pinched Fingers. Simulate the black drop effect that is sometimes seen during a transit of Venus by nearly pinching your fingers together. Note the ligament that seems to form just between them just before they seem to touch.

http://www.youtube.com/watch?v=qS1O6C2dQ40
A crowd gathered before sunrise on June 8, 2004, to witness the rare Transit of Venus in Mishawaka, Indiana, USA. Though clouds threatened to obscure the spectacle, the sun emerged in time for the audience to observe through telescopes, rear projection screens, and solar viewers. An audible time signal in the background allowed individuals to time the instant when the black dot of Venus just touched the inside edge of the sun, as global expeditions had done in past centuries. The last transit of Venus in our lifetimes occurs June 5-6, 2012.

http://youtu.be/wp9hslrab70
IAU Talk: Transit of Venus Observations and Relics in South Africa. Willie Koorts talk at the 2006 IAU meeting in Prague, present via video in absentia, covers the full Transit of Venus history in South Africa from 1761 thru 2004.

http://www.youtube.com/watch?v=9e8kVXKOCTE
Video: Discover how scientists used the last Venus transit and a geometric technique called parallax to verify the distance between sun and Earth. Find out what scientists hope to learn the next time Venus makes a shadow on the face of the sun. *Launchpad: Transits* courtesy of NASA eClips.

http://forum-network.org/lecture/transit-venus-passing-sun
Video: *Transit of Venus: Passing the Sun*, a 2004 lecture by Jay Pasachoff, gives historical background of transit of Venus and details how limb darkening and the telescope's point spread function contribute to the black drop effect.

http://uk.video.yahoo.com/watch/4464208/11964898
Video: *English Bites-Transit of Venus* gives historical background of the transit of Venus with emphasis on James Cook's expedition, then breaks down the reporter's word choice in a lesson in English vocabulary; from the Learn English website of the Australia Network.


http://video.wpbt2.org/video/2215560518
Venus in Transit, 5-minute version from StarGazers for April 9-15, 2012; from PBS station WPBT. Script(s) at http://www.stargazersonline.org/episodes/1215.html.

http://discoveredsun.tumblr.com/post/22633500403/ieee-spectrum-magazines-podcast-interview-with
Podcast interview with Mark Anderson, author of The Day the World Discovered the Sun, explains the the value of the transit of Venus expeditions for navigational gain.

Phone App

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UPDATE (March 2012): The Transit of Venus phone app is now available for *free* download:

- IOS version
- Android version

In centuries past, explorers traveled around the globe to time a transit of Venus to determine the size of the solar system. We invite you to inspire international collaboration during the 2012 transit of Venus by enabling a digital re-creation of those global expeditions. A web-based phone application would allow citizens around the world to witness this rare phenomenon and to contribute their observation to a collective experiment. This will literally be the last such opportunity in your lifetime.

To appeal to a large audience and to have extended utility, the phone app would serve users before, during, and after the transit. Prior to the transit, participants could practice timing the contacts using personas and local circumstances of past explorers. Additionally, users could see predicted times of contact for their respective locations.

During the transit, the phone app would connect to a live webcast of the transit of Venus. Registered users could depress a phone button at the moment of internal contact (when Venus appears within the sun, just touching the sun's edge), and the app would record the exact time and user's location, which would be sent to the global database.

After the transit, users can access their data on a map, edit their entry, and upload descriptions, text, images, or movies. Other users can comment on entries.

Please join this effort spearheaded by the non-profit Astronomers Without Borders.

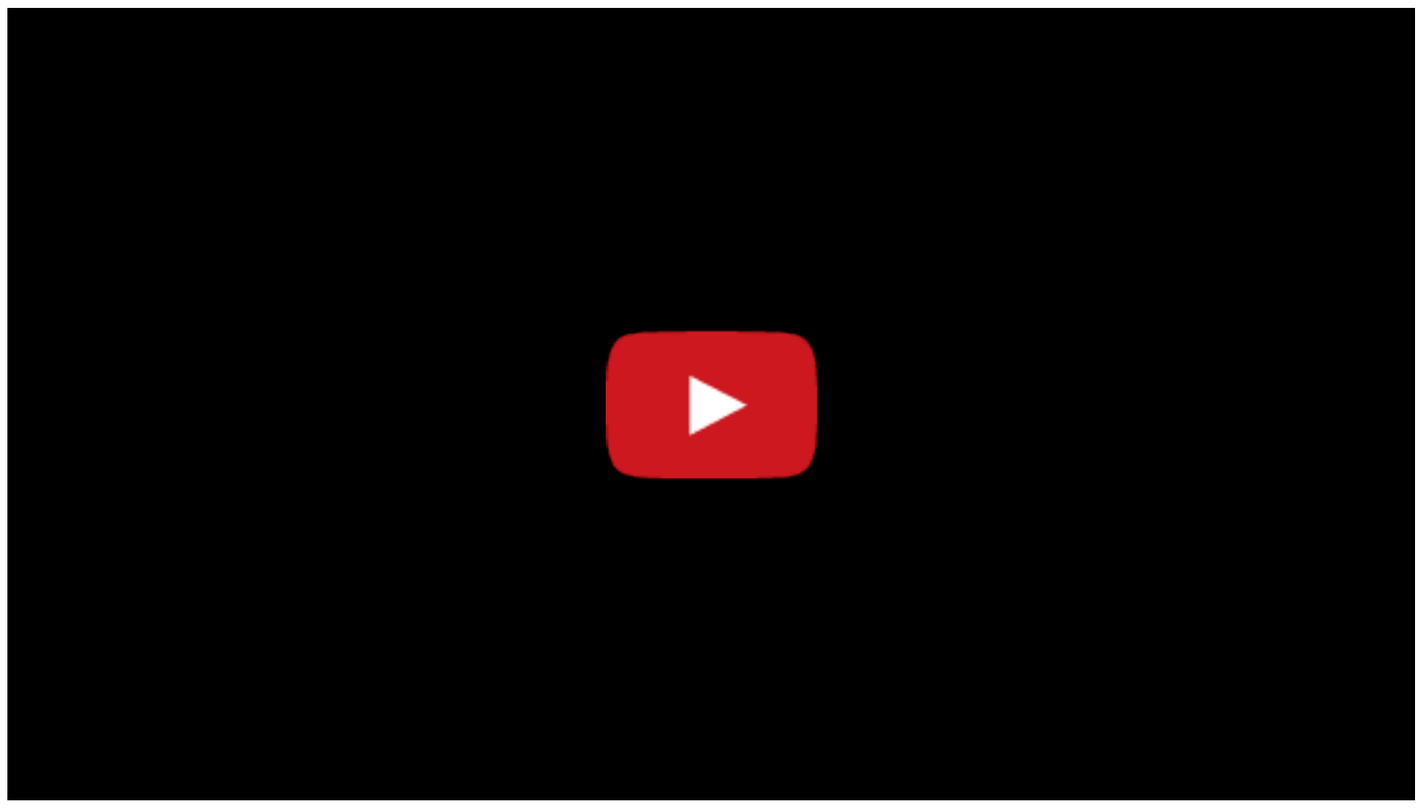
UPDATE (March, 2012): The Transit of Venus phone app is now available for free download:

IOS version

Android version

Video: The Transit of Venus

Chuck



The Transit of Venus is a 4-minute video in high-resolution soon to be a free download in full-dome video for digital theaters. The mini-show summarizes the history and significance of the transit of Venus while preparing viewers for the June 5-6, 2012, spectacle. The story segues from Jeremiah Horrocks' first sighting, to expeditions seeking to measure the size of the solar system, to the Kepler spacecraft detecting planets as they transit distant stars.

With animation and video effects by Patrick McPike, Multimedia Artist and Technical Director at the Adler Planetarium, the dome master is readily compatible with full-dome digital theaters. The original song *Morning Star* by the band Transit of Venus from New Zealand is also available for **free download**. Narrated by Douglas Osthimer. Written and directed by Chuck Bueter.

- **Dome master (coming mid-March)**
- **High-resolution flat screen video**
- **YouTube video** with narration
- **Song: *Morning Star*** by Transit of Venus
- **Text** for *The Transit of Venus* video

Read more: Video: The Transit of Venus

Simulation of Kepler Detecting Planets

JANUARY_SHORT 22 | 20:39 **Chuck**

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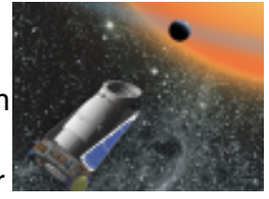

Planetary transits are not only historically significant, they are a key tool for future exploration. The NASA Kepler mission is looking at more than 100,000 distant stars for periodic dips in brightness that would reveal the presence of habitable planets encircling their parent stars. Planetarium director Ruth Craft demonstrates how the spacecraft senses the dimming, generates a light curve, and guides astronomers toward candidate star systems. The Kepler team provides excellent online resources for educators at **http://kepler.nasa.gov/education/**. See **Transit Tracks**, for example, a detailed investigation that parallels this video produced by WNIT public television's Outdoor Elements, with host Evie Kirkwood.

From WNIT Outdoor Elements, **Episode #1003**, Segment #3

Read more: Simulation of Kepler Detecting Planets

Podcast: Celestial Alignment of 2012

http://365daysofastronomy.org/2009/12/05/december-5th-the-celestial-alignment-of-2012/

"Celestial Alignment of 2012" is featured on the 365 Days of Astronomy podcast for December 5, 2009; by Chuck Bueter.

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