



ASTRAL PROJECTIONS

June 2012
Volume 23 Issue 6

Meeting Schedule

June 8th ASTRA Meeting "TBA"

"How to read Sky Charts" by
Bob Sal

Date: Friday, 6/8/2012

Time: 7:00 PM - 10:00 PM

Location: Robert J. Novins
Planetarium, College Drive,
Ocean County College, Toms
River, NJ 08754

July 13th ASTRA Presentation "Solar Astronomy"

Presentation "Solar
Astronomy" by Bill Edelen

Date: Friday, 7/13/2012

Time: 7:00 PM - 10:00 PM

Location: Robert J. Novins
Planetarium, College Drive,
Ocean County College, Toms
River, NJ 08754

A look inside:

Venus Transit. Page 1

What's up this month? Page 4

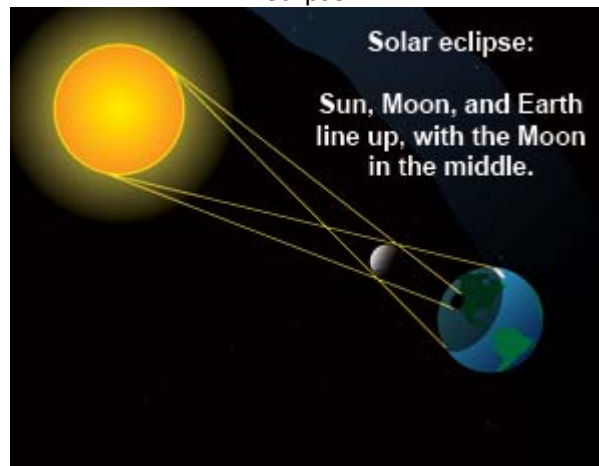
Loaner Telescopes. Page 5

June Sky Chart. Page 6

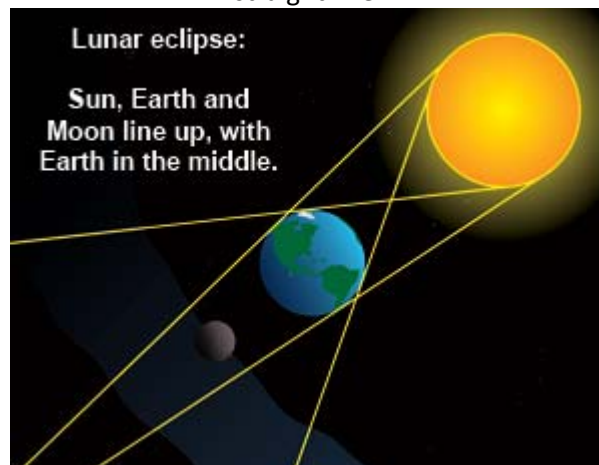
Astronomers love eclipses. And this has been a great year for them!

An eclipse happens when one object in space gets right in front of another object in space. Seeing that happen is awesome! And it is a chance to learn more about one or both of the objects.

Depending on what gets in front of what, we have different names for the eclipse.



When the Moon passes between us and the Sun, we call it a solar eclipse. It is the Sun that is being "eclipsed" (meaning hidden or blocked from sight). To form an eclipse, the two objects and the observer must be located along a straight line.



When Earth passes right between the Sun and the Moon, we get a lunar eclipse.

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Astronomical Items for Sale, or Help Wanted Advertisements:

If you have an item to Sell, or need help with an astronomical problem (a question, or Telescope setup) contact the President President@astra-nj.org or the ASTRA Hotline 609-971-3331 to announce it at a meeting and send the advertisement to the newsletter (See Newsletter below).

Newsletter: E-mail material (Meeting reports, Observing reports) to Newsletter@astra-nj.org

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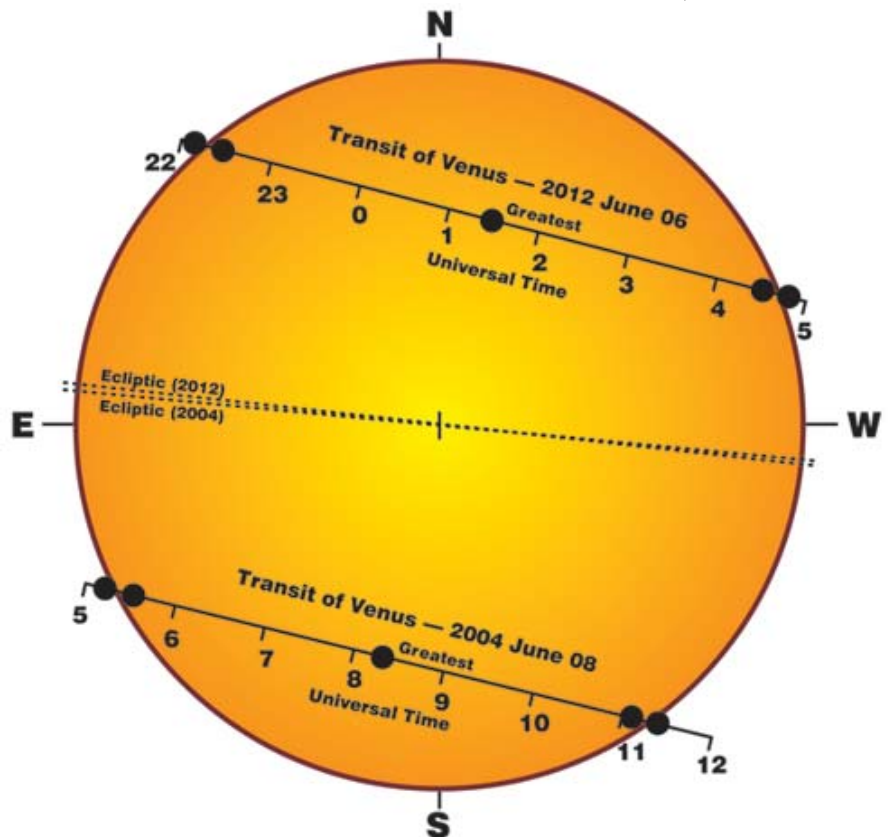
Check us out on Facebook, search groups for (ASTRA Astronomy) and look for our logo.



These are the most notable eclipses we see on Earth. During a solar eclipse, daylight gets dimmer for a few minutes, then returns to normal. During a lunar eclipse, the Moon may look like an orange ball. We can still see it because it reflects some sunlight that has grazed Earth's atmosphere, becoming reddened and scattered by the atmosphere as if at sunset.

There is one other very rare eclipse that we can also see happening before our very SHIELDED eyes. That one is called a "Venus transit." Venus orbits closer to the Sun than Earth does. Sometimes Venus passes between Earth and the Sun. when things are lined up just right, we can see Venus as a small black dot moving across the face of the Sun.

How often can we see a Venus transit?
The next Venus transit occurs June 5 and 6, 2012.



The last Venus transit was in June 2004. But after 2012, the next one will not occur until 2117! You will have wait until way past your 100th birthday to see the next one. Want to know why?

At first, you might think the "schedule" of Venus transits sounds pretty random. But there is a pattern:

Two transits 8 years apart,
Then 105.5 years with no transits,
Then two transits 8 years apart,
Then 121.5 years with no transits,
for a total cycle of 243 years.

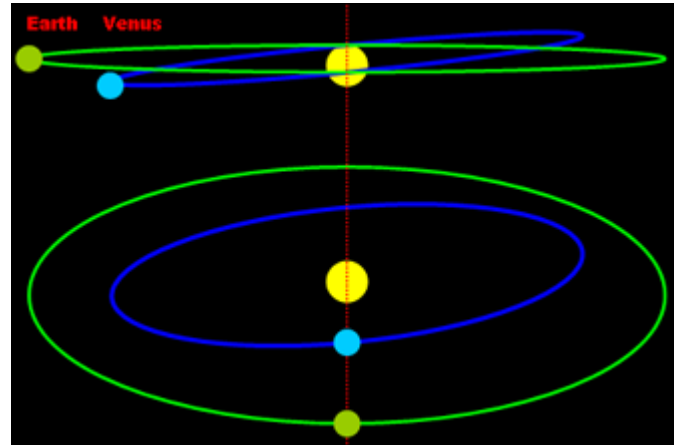
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So why don't we see a Venus transit more often?

Since Venus orbits closer to the sun than Earth does, it has a shorter distance to go to make one "lap." For every 8 laps Earth makes, Venus makes about—but not exactly—13 laps. That means Venus passes us up five times about every 8 years, or once about every 1.6 years.

But we don't see Venus lined up in front of the sun every 1.6 years because Venus's orbit is tilted a bit from Earth's orbit. So when we would expect to see Venus passing us up, it is either above or below the Sun, so we don't see it. We see it only if at just that time in its orbit, it happens to be crossing Earth's orbit.

Also, neither orbit is exactly circular, which throws off the rhythm of the dance just a bit more.



We have been very lucky to see two Venus transits only 8 years apart! To see even one Venus transit in a lifetime is lucky timing!

Since the invention of the telescope, Venus transits have occurred in:

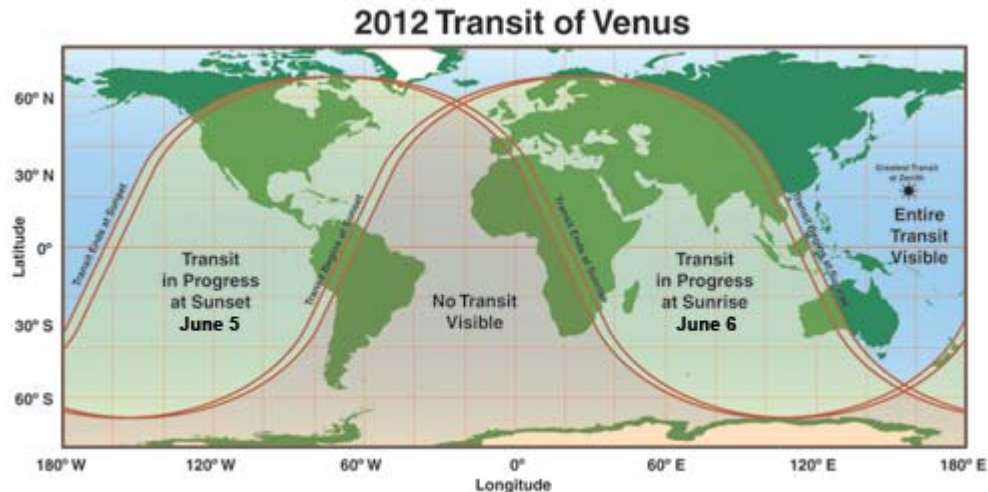
1631 (not witnessed) & 1639

1761 & 1769

1874 & 1882

2004 & 2012

Check this map to see when the Venus transit of June 5 and 6, 2012, will occur at your location.



Meanwhile, get hold of some solar viewing glasses.

The Transit of Venus

This will be the last chance in your lifetime to witness this event.

The transit starts within a few minutes of 22:10 Universal Time (6:10 p.m. EDT) on June 5th and ends within a few minutes of 4:45 UT June 6th but our viewing of it will end at sunset. For best viewing of this event you want a clear view of the western horizon so you can watch the sun set. And REMEMBER!!! You'll need special SOLAR GLASSES!!! Not sunglasses to view this event, also if you use a telescope/binoculars you will need a SOLAR FILTER!!! attached to the front of them to prevent eye damage. Viewing the Sun without the proper solar filters can cause immediate and irreversible eye damage BE SAFE!!!

Whats up this month?

ASTRA Public Outreach & Star Parties Schedule for June 2012

Cub Scout Pack - Camp Citta "Outreach Event"

Their theme is "Space exploration" and 200-300 scouts will be in attendance.

Date: Saturday, 6/2/2012

Time: 8:00 PM - 10:30 PM

Location: Joseph A. Citta Scout Camp, 229 Brookville Road, Barnegat, NJ 08005

The Transit of Venus "Star Party"

Date: Tuesday, 6/5/2012

Time: 5:00 PM - 10:00 PM

Location: Jakes Branch County Park, Double Trouble Rd, Beachwood, NJ 08722

Earthwatch/Drexel at the Lighthouse Encampment "Outreach Event"

We begin the night sharing dinner with the Drexel Grad students and Earthwatch participants. They teach us about turtles we teach them about the Universe.

Date: Friday, 6/15/2012

Time: 6:00 PM - 11:00 PM

Location: The Lighthouse Center, 7th Steet & Navajo Dr, Waretown, NJ 08758

Summer Star Watch "Star Party"

Members of the Astronomical Society of the Toms River Area (ASTRA) will setup their telescopes on campus to share views of the planets and stars. Objects; Saturn, Mars, will be out, along with the constellations Virgo, Hercules and other celestial objects of the summer season. Free Event Ocean County College Campus.

Date: Saturday, 6/23/2012

Time: 8:00 PM - 10:30 PM

Location: Robert J. Novins Planetarium, Colege Drive, Ocean County College, Toms River, NJ 08754

Earthwatch/Drexel at the Lighthouse Encampment "Outreach Event"

We begin the night sharing dinner with the Drexel Grad students, turtles and Earthwatch participants. They teach us about turtles we teach them about the Universe.

Date: Friday, 6/29/2012

Time: 6:00 PM - 11:00 PM

Location: The Lighthouse Center, 7th Steet & Navajo Dr, Waretown, NJ 08758

Call the ASTRA Hotline 609-971-3331 or check the online message board on the date of the star party for up to date information on these events.

ASTRA Library of Books & DVD's

The following books and DVD's are available to borrow for one month at a time. Request for these items must be made prior to our regular meeting and returned the following meeting. Please e-mail your request for these items to John Endreson webmaster@astra-nj.org or call the ASTRA Hotline 609-971-3331

BOOKS

1) **The National Air and Space Museum**

Second Edition by C.D.B. Bryan

2) **Milestones of Aviation** Smithsonian

Institution National Air and Space Museum

3) **New Atlas of the Moon** by Serge

Brunier (Author), Thierry Legault (Photographer).

4) **Encyclopedia of space** by National

Geographic

5) **The Real Mars** by Michael Hanion

DVD's

1) **Parts 1&2 Understanding the Universe What's New in Astronomy**

2003 Taught by: Professor Alex Filippenko. Each part has 8 lectures, 45 minutes per lecture.

2) **Parts 1 to 5 Understanding the Universe An Introduction to Astronomy**

Taught by: Professor Alex Filippenko each part has 8 lectures, 45 minutes per lecture.

3) **COSMOS**

In his "ship of the imagination," Carl Sagan guides us to the farthest reaches of space and takes us back into the history of scientific inquiry in the course of 13 fascinating hours.

For a complete list of books and DVD's, visit our website or Call the ASTRA Hotline at 609-971-3331.

Club Telescopes



A.S.T.R.A. owns four small telescopes

6-inch Dobsonian

8-inch Dobsonian

80mm Celestron Refractor

120mm EQ AstroView Refractor.

These telescopes are available for club members to borrow and use for a month or two at a time.

Wanted!

No longer used telescopes, Telescope parts, and accessories.

Call the ASTRA Hotline at 609-971-3331
We will come and pick-up your used equipment.

ASTRA-WEAR: For Embroidered and/or Printed items With the ASTRA Logo



You can see some samples at ASTRA meetings. To order by mail: Shelter Cove Embroidery Co. 1333 Bay Ave Toms River, NJ 08753 call 732-506-7700 or E-mail astra-wear@estitches.com

What's Out Tonight?

June 2012 Sky Chart

FREE

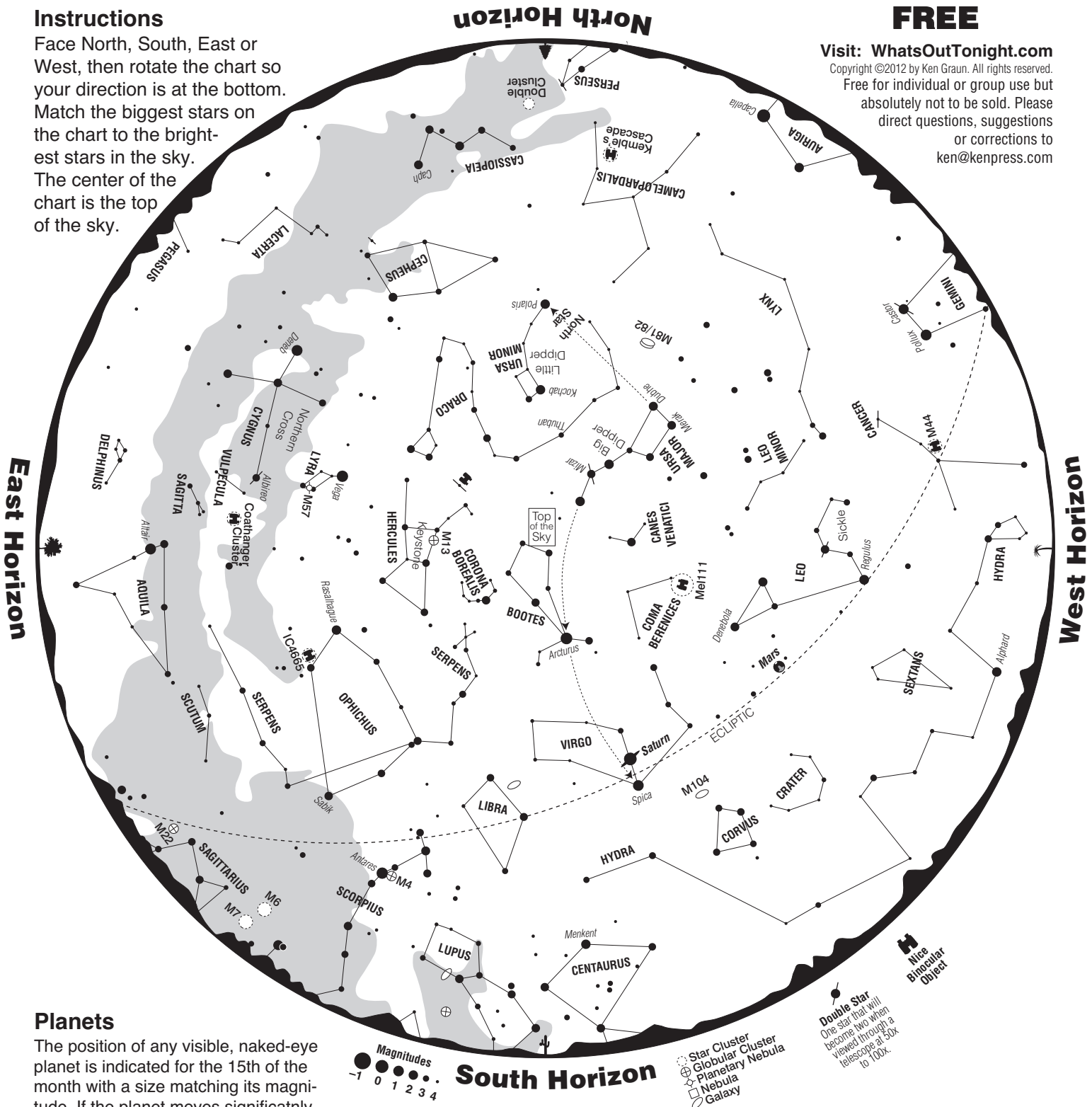
Visit: WhatsOutTonight.com

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Instructions

Face North, South, East or West, then rotate the chart so your direction is at the bottom. Match the biggest stars on the chart to the brightest stars in the sky. The center of the chart is the top of the sky.



Planets

The position of any visible, naked-eye planet is indicated for the 15th of the month with a size matching its magnitude. If the planet moves significantly during a month, other positions will be noted with dates. The **ECLIPTIC** is the path of the Sun through the sky but the planets and Moon move along it, too. It passes through the constellations of the zodiac.

June 2012 Planet Notes

Venus, at magnitude -4.1 , rises in the east 1 hour before the Sun.
Mars, at magnitude $+0.7$, sets around 1 am in the constellation Leo.
Jupiter, at magnitude -2.0 , rises early in the morning about 1.5 hours before the Sun. **Saturn**, at magnitude $+0.6$, sets around 3 am and is in the constellation Virgo.

Distances planets are from the Earth this month:
Venus: 29,000,000 miles, **Mars:** 122,000,000 miles
Jupiter: 550,000,000 miles, **Saturn:** 858,000,000 miles.