



# ASTRAL PROJECTIONS

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**MAY MEETING:** Ryan Knipple talked about Astronomy on-line. The websites he mentioned were:

<http://events.slooh.com/>  
<https://www.zooniverse.org/>  
<http://captainknipz.weebly.com/>

**JUNE MEETING:** Mars – Megan Vicidomini will talk about Mars (Meeting start at 7:00; Presentation at 7:30).

## Announcements

**JUNIOR ASTRA:** Does anyone have any thoughts on a junior section of ASTRA? Members had mentioned this and we will discuss at the next meeting.

**BEACH HAVEN SCHOOL:** We have sent a letter of support for the Beach Haven Schools Grant Application. If they receive the grant of \$10,000, they have asked us to help them on setting up and using the telescope that they buy, and possibly to support any star parties.

**NEWS LETTER EDITOR:** We are looking for a News Letter editor to publish the ASTRA newsletter once a month. Please contact the executive board if you are interested.

## What's up This Month?

**EVENING OBSERVING EVENT JAKE'S BRANCH COUNTY PARK:** Come join us. Observe the universe through our telescopes. Date: Saturday, 6/7/2014. Time: 9:00 PM - 11:00 PM. Location: Jakes Branch County Park, 1054 Sunset Rd, Beachwood, NJ 08722:

**SUMMER STAR WATCH:** 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. We will explore the constellations and other celestial objects of the winter season. Free Event Ocean County College Campus. Date: Saturday, 6/7/2014. Time: 8:00 PM - 11:00 PM. Location: Robert J. Novins Planetarium, 2001 College Drive, Ocean County College, Toms River, NJ 08754

Check the online message board on the date of the star party for up to date information on these events.



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# The Hottest Planet in the Solar System

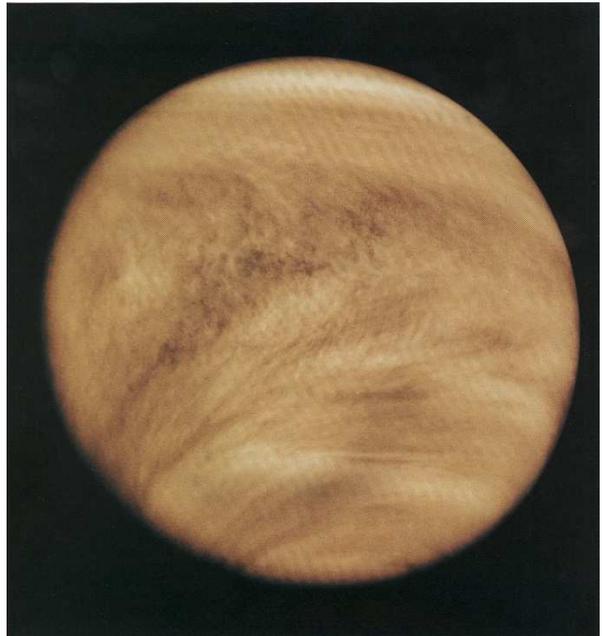
By Dr. Ethan Siegel

When you think about the four rocky planets in our Solar System—Mercury, Venus, Earth and Mars—you probably think about them in that exact order: sorted by their distance from the Sun. It wouldn't surprise you all that much to learn that the surface of Mercury reaches daytime temperatures of up to 800 °F (430 °C), while the surface of Mars never gets hotter than 70 °F (20 °C) during summer at the equator. On both of these worlds, however, temperatures plummet rapidly during the night; Mercury reaches lows of -280 °F (-173 °C) while Mars, despite having a day comparable to Earth's in length, will have a summer's night at the equator freeze to temperatures of -100 °F (-73 °C).

Those temperature extremes from day-to-night don't happen so severely here on Earth, thanks to our atmosphere that's some 140 times thicker than that of Mars. Our average surface temperature is 57 °F (14 °C), and day-to-night temperature swings are only tens of degrees. But if our world were completely airless, like Mercury, we'd have day-to-night temperature swings that were hundreds of degrees. Additionally, our average surface temperature would be significantly colder, at around 0 °F (-18 °C), as our atmosphere functions like a blanket: trapping a portion of the heat radiated by our planet and making the entire atmosphere more uniform in temperature.

But it's the second planet from the Sun -- Venus -- that puts the rest of the rocky planets' atmospheres to shame. With an atmosphere 93 times as thick as Earth's, made up almost entirely of carbon dioxide, Venus is the ultimate planetary greenhouse, letting sunlight in but hanging onto that heat with incredible effectiveness. Despite being nearly twice as far away from the Sun as Mercury, and hence only receiving 29% the sunlight-per-unit-area, the surface of Venus is a toasty 864 °F (462 °C), with no difference between day-and-night temperatures! Even though Venus takes hundreds of Earth days to rotate, its winds circumnavigate the entire planet every four days (with speeds of 220 mph / 360 kph), making day-and-night temperature differences irrelevant.

Catch the hottest planet in our Solar System all spring-and-summer long in the pre-dawn skies, as it waxes towards its full phase, moving away from the Earth and towards the opposite side of the Sun, which it will finally slip behind in November. A little atmospheric greenhouse effect seems to be exactly what we need here on Earth, but as much as Venus? No thanks!



*Image credit: NASA's Pioneer Venus Orbiter image of Venus's upper-atmosphere clouds as seen in the ultraviolet, 1979.*

*Check out these "10 Need-to-Know Things About Venus":*

<http://solarsystem.nasa.gov/planets/profile.cfm?Object=Venus>.

*Kids can learn more about the crazy weather on Venus and other places in the Solar System at NASA's Space Place:*

<http://spaceplace.nasa.gov/planet-weather>.



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**CELESTIAL EVENTS FOR JUNE**

Mercury is visible in the evening sky and is getting dimmer and closer to the Sun by the end of the month. Venus is visible low in the ENE in the dawn sky getting closer to the Sun. Mars is in Virgo in the evening sky. Jupiter is in Gemini – low in the western evening sky. Saturn is visible in Libra in the evening. Highlights for the month:

- 1 Jupiter 6° N of Moon
- 5 First Quarter Moon
- 8 Mars 1.6° N of Moon  
Spica 1.8° S of Moon
- 10 Saturn 0.6° N of Moon
- 13 Full Moon
- 19 Last Quarter Moon
- 21 Summer Solstice
- 24 Venus 1.3° N of Moon
- 27 New Moon
- 29 Jupiter 5° N of Moon

Credit: Observer's handbook



**CLUB TELESCOPES:** A.S.T.R.A. owns seven small telescopes:

- 6-inch Dobsonian (in need of repairs)
- 8-inch Dobsonian
- 80mm Celestron Refractor
- 120mm EQ AstroView Refractor.
- Lunt 35mm H-Alpha solar scope
- 8-inch Celestron NexStar 8i SE
- 60mm Meade EQ refractor

These telescopes are available for club members to borrow and use for a month or two at a time. Contact John Endreson at [Telescope\\_Loan@astra-nj.org](mailto:Telescope_Loan@astra-nj.org) to borrow a telescope.

**ASTRA-WEAR – 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](mailto:astra-wear@estitches.com). Order form is on the ASTRA website.

**ASTRA LIBRARY OF BOOKS AND DVDS:** Many books and DVDs are available for loan from the ASTRA Library for a one month period. A list of these items is available on the ASTRA website. Request for these items must be made prior to our regular meeting and returned by the following meeting. Please e-mail your request for these items to our Librarian Barbara Novick at [Library-Loan@astra-nj.org](mailto:Library-Loan@astra-nj.org) or call her at 732-840-3111.

**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](mailto:President@astra-nj.org) to announce it at a meeting and send the advertisement to the newsletter (See Newsletter below).

**ASTRONOMICAL LEAGUE MEMBER SOCIETY**

Astronomical League National Headquarters, 9201 Ward Parkway; Suite 100, Kansas City, MO 64114, 1-816-333-7759 or [www.astroleague.org](http://www.astroleague.org)

The REFLECTOR is published in March, June, September and December. If you do not receive your copy of the REFLECTOR magazine, contact Astronomical League Coordinator (Alcor) Ro Spedalieri ([Treasurer@astra-nj.org](mailto:Treasurer@astra-nj.org))

**EXECUTIVE BOARD**

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**NEWSLETTER:** E-mail material (meeting reports, observing reports, or other items of interest) to [Newsletter@astra-nj.org](mailto:Newsletter@astra-nj.org).

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



# ASTRA

## REMAINING SCHEDULE FOR 2014

Jake's Branch and other star parties not included  
(Comments and Suggestions are Welcome)

- May 3*      *Saturday – Astronomy Day – Exhibits and Public Star Party at Jake's Branch Park*
- May 9\**      *Astronomy on-line – Ryan Knipple*
- May 10*      *Saturday – Astronomy Day – Exhibits and Public Star Party at OCC*
- Jun 7*      *Saturday – Summer Star Watch – Public star party at OCC. (Moon 2 days after 1<sup>st</sup> Qtr)*
- Jun 13\**      *Mars – Megan Vicidomini (Start at 7:30)*
- Jul 11\**      *Open*
- Aug 8*      *No Meeting*
- Aug 9*      *Saturday – Perseid Picnic*
- Sep 6*      *Saturday – Fall Star Watch – Public star party at OCC. (Moon 4 days after 1<sup>st</sup> Qtr)*
- Sep 12\**      *Chemistry in the Universe – Matthew McCue*
- Oct 10\**      *Planetarium Show*
- Nov 14\**      *Solar Update – Bill Edelen*
- Nov 29*      *Saturday – Winter Star Watch – Public star party at OCC. (Moon 1<sup>st</sup> Qtr)*
- Dec 12\**      *Awards, Open Meeting, Elections*

\* Regular Meeting