



KOPERNIK OBSERVATORY & SCIENCE CENTER

698 UNDERWOOD ROAD, VESTAL, NEW YORK 13850
PHONE (607) 748-3685 * FAX (607) 748-3222 * WWW.KOPERNIK.ORG

Public Program
Schedule
Summer 2016

Summer Hours for Friday Night Programs: Doors open at 8 p.m., programs start at 8:30 p.m.
Adults: \$5, Seniors/Students: \$3, Family: \$16 maximum; Kopernik Members: free

June 3: Summer Stars – Kopernik Staff

See the latest Hubble Space Telescope images and learn how to locate the International Space Station (ISS) as it flies over Broome County! Learn about the summer constellations and their deep-sky objects. Receive a free star map and learn how to use it. If clear, see classic deep-sky objects such as the Ring Nebula, Great Cluster in Hercules, Mars and Saturn.

June 10: Takin' Out the Trash – Debra Smith, Broome County Division of Solid Waste

Once or twice each week, most of us drag our garbage to the curb and set out our recycling bins. But have you ever wondered where it all goes? Even if you know your garbage goes to a landfill, have you ever been to one? Does the thought conjure up images of mounds of trash? Join Materials Recovery Manager Debra Smith for a virtual tour of the Broome County landfill, providing a well-rounded overview of daily operations, onsite programs, and future endeavors of our county's solid waste program. If clear see, the Moon, Jupiter, Mars, Saturn, double stars and other objects.

June 17: Community Shared Solar Power – Adam Flint, Binghamton Regional Sustainability Coalition

Solar energy now can be an option for everyone through Community Shared Solar (CSS). Until recently, only one in five New Yorkers could go solar, due to a lack of property, credit, or suitable site. Southern Tier Solar Works, a program of the Binghamton Regional Sustainability Coalition, is pioneering CSS in the Southern Tier, which allows anyone to change their electricity supply to a solar array in their load zone. At this presentation, you can learn about how to go solar on site or via CSS, and enroll in the option that suits you. If clear, see a nearly full moon, Saturn, and double stars.

June 24: Commercial Drones – Heroes or Villains? – Vincent Socci, LHP Engineering Solutions

The mere mention of Unmanned Aerial Vehicles (aka drones) conjures up a range of emotions: from fear (of privacy violations), to excitement (about innovative technology), to relief (at enabling safer work environments). At this presentation, learn how drones, like most technology, can be used for beneficial applications or evil purposes. Attendees will have the opportunity to fly drones in a controlled environment and take some videos of their flights.

July 1: The Great Telescope Dust-off – Kopernik Staff

Is there a telescope collecting dust in a corner of your basement, garage, or attic? Dig it out and bring it up to Kopernik! Kopernik experts will assess its condition and show you how to set it up and use it. There is always a lot to see in the sky. Let Kopernik help you **Look Up and Dream Big!** If clear, see classic deep-sky objects such as the Ring Nebula, Great Cluster in Hercules, and Saturn.

July 8: The Revolution in Astronomical Imaging – George Normandin, Kopernik Astronomical Society

Over the past 25 years, astrophotography has changed greatly and Kopernik's telescopes have collected thousands of images, many of them on Kopernik's website. Mr. Normandin will talk about the history of astrophotography, starting with film and moving on to digital imaging, including DSLR cameras, web cams, and high resolution CCD cameras with filters wheels that create stunning composite color images. Throughout his talk, you will see numerous images taken at the Kopernik Observatory, some of which have been used in textbooks, magazine articles, and post-graduate research.

July 15: Future Technology – Keith Werkman, Ph.D., Lockheed-Martin

What does the future hold for us? This presentation will focus on how present and future technology might affect our lives. Dr. Werkman will discuss artificial intelligence, robotics, nanotechnology, and more! Discover what advances are feasible over the next 100 years given the laws of physics. If clear, see a crescent moon, Mars, Saturn and Neptune.

July 22: Ham Radio – The Perfect Hobby for Just About Everyone – Drew Deskur, KAIM, Kopernik Director

Even with the Internet, cellphones, and wireless everywhere, the number of Ham Radio operators continues to grow. By 2020 it is expected that there will be over 750,000 licensed Amateur Radio (aka Ham Radio) operators in the U.S. Ham Radio has something to offer everyone, from the person who likes to build equipment, to the person interested in public service, to the person who wants to talk to people around the world. Come learn about a hobby that engages people from 5 years old to 105. During the talk, Drew plans to get on the air and talk to another Ham thousands of miles away.



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July 29: Rock Hounding: Hands-on Geology – Roy Williams, Kopernik Educator

Learn about different types of rocks and how they are formed. Find out how rocks change from one form to another through the rock cycle. See a variety of samples from Kopernik's collection of rocks, fossils and meteorites. Bring your own rock samples to be identified. If clear, see a variety of deep-sky objects, Mars, and Saturn.

August 5: Planet Marathon – Roy Williams, Kopernik Educator

In early August, all seven planets will be visible in the sky on the same night! Arrive early at 7:30 p.m. to observe Mercury, Venus, and Jupiter before they set. At 8 p.m., Roy will take you on a 3D tour of the solar system and demonstrate a scaled solar system model. After the program, as twilight ends, see Mars and Saturn. Later, see Neptune and then Uranus just after 11 p.m. These two planets aren't easily visible without a telescope.

August 6 (Saturday): Planet Marathon – Roy Williams, Kopernik Educator – CLEAR ONLY

If clear, the August 5 program will repeat on Saturday, August 6. Check website or call after 5 p.m. for sky conditions.

August 12: Outer Worlds: Jupiter, Saturn and Pluto – Keith Werkman, Ph.D., Lockheed-Martin

Learn about NASA's latest robotic spacecraft missions exploring Jupiter, Saturn, and Pluto. Dr. Werkman will present updates on the multi-year Cassini Mission to Saturn, as well as NASA's New Frontier missions: the New Horizons Mission (flew by Pluto last year), JUNO Mission to Jupiter (arriving July 4, 2016) and OSIRIS-REx Mission to the Near-Earth asteroid Bennu (to launch in September 2016)! See the latest images from current missions. If clear skies prevail, view all the planets in one night (see August 5 Planet Marathon for details). Some early Perseid meteors may be visible.

August 13 (Saturday): Perseid Meteor Shower – CLEAR ONLY 9 p.m.

The Perseid Meteor Shower is one of the best meteor showers to observe, producing up to 60 meteors per hour! Produced by the Swift-Tuttle comet, these meteors appear to radiate from the constellation Perseus. Grab a lawn chair or blanket and head up to Kopernik's dark skies for great viewing, especially after midnight. Visit www.kopernik.org or call (607) 748-3685 after 5 p.m. to confirm that Kopernik will be open for viewing. **Planet Marathon (starts 6:30 p.m.)**

August 19 & 26: (8 p.m.): Basic Astronomy – Kopernik Staff

Bring the whole family to Kopernik for this beginner's guide to star gazing. Learn how to read a star map, how to find a comet, and how to use a Dobsonian telescope. Tour Kopernik's telescopes and if clear, use them to view the moon, Saturn, double stars and star clusters. Arrive early at 7 p.m. to see the conjunction of Venus and Jupiter (see below).

August 27 (Saturday) & August 28 (Sunday): Conjunction of Venus and Jupiter – CLEAR ONLY 6:30 p.m.

In late August, Venus and Jupiter will appear near each other in the sky (only 0.08 degrees apart). This spectacular pairing is called a conjunction. If clear, you will be able to see both planets at the same time through Kopernik's telescopes. Visit www.kopernik.org or call 607-748-3685 after 5 p.m. to confirm that Kopernik will be open for viewing.



Coming this Fall

October 7-8: AstroFest 2016

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