GREEN BANK STAR QUEST XX

JUNE 25 – JUNE 28, 2025

http://caacwv.com/

http://greenbankstarquest.org/

	GENERAL INFORMATION	
TIME	**EVENT**	**LOCATION**
9:30am-6:00pm	Registration/Welcome	Registration Desk
9:30am-5:30pm	Vendor Area Open	Visitor Center
9:30am-5:30pm	Starlight Cafe	Visitor Center
9:30am-5:30pm	Gift Shop	Visitor Center
10:00am-5:00pm	GBO Hourly Tours	Visitor Center
10:00am-2:00pm DAILY	Daily Solar Observing (Weather Permitting)	Visitor Center
	Reminder: Check at the registration desk for daily schedule updates / revisions	
	Don't forget to purchase Raffle Tickets! $1.00 each/$5.00 for 6	
	Check out our Star Quest T-Shirts STAR QUEST MEMORABILIA	
	MEAL TICKETS AVAILABLE	Starlight Cafe
8:00am-9:00am	BREAKFAST	GBO Cafeteria
	LUNCH On Your Own Consider Visiting the Starlight Cafe	
5:00pm-6:30pm	DINNER	GBO Cafeteria
Dusk till Dawn	Observing	Your Site
8:30pm-10:00pm	Field Session Weather Permitting	Field
11:00pm-3:00am Wednesday, Thursday and Friday	40' Dish Observation Sessions	40' Radio Dish

	WEDNESDAY- JUNE 25, 2025	
TIMES	**EVENT**	**Location**
9:30am-11:00am	**TBA – SEE WHITE BOARD**	
12:00pm-1:00pm	**Lunch Break**	
1:00pm-2:00pm	**Capturing Images of Solar System Objects (Planets, Moons, Comets, Asteroids, Etc.) Also Discuss Capturing Exoplanet Transit Data** **Brent Maynard**	**Faraday Computer Lab**
1:30pm-2:30pm	**Hulu-Hulu Hoops in Space** **John Dennis**	**Classroom**
1:30pm-3:00pm	**Cosmic Coordinates (Big Kids)** **Josh Revels**	**Star Lab Room**
2:30pm	**40' Radio Dish Orientation #1** **GBO Staffer** **20 person max. (sign-up sheet)**	**Meet at Registration Desk**
2:30pm	**High Tech Tour of the GBT Control Room** **(sign-up sheet)**	**Meet at Registration Desk**
2:45pm-3:45pm	**A (Brief) Tour of the Galactic Center** **Riley Dunnagan**	**Classroom**
2:45pm-4:15pm	**Apollo Flight Simulator** **Tim Hamilton**	**Faraday Computer Lab**
5:00pm-6:30pm	**Dinner Break**	
7:00pm-8:00pm	**SERENDIPITY AND THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE** **ELLIE WHITE**	**Auditorium**

The movie " 'Small Town Universe' paints an intimate and captivating portrait of life in Green Bank, WV, home of the world's most sensitive radio telescope." (IMBd). It will be shown in the Auditorium after keynote on any evening when the weather is not cooperative. Check the white board at Registration for daily updates.

	THURSDAY- JUNE 26, 2025	
TIMES	**EVENT**	**LOCATION**
8:30am-10:00am	TBA – SEE WHITE BOARD	
9:45am-10:45am	Meteorite Miscellany Dave Holden	Classroom
9:45am-10:45am	Digging Deeper into Electronic Telescopes Featuring the ZWO SeeStar 50. New Equatorial Mode, Image Processing Techniques, Alt-Az Challenges Brent Maynard	Faraday Computer Lab
10:00am-11:30am	Constellations (Little Kids) Cyndi Shaver	Basement
10:00am-11:30am	Properties of Stars and Planet Hunting (Big Kids) John Revels	Star Lab Room
11:00am-12:00pm	Rubin Observatory Stellar Safari Investigation Debbie McKay	Faraday Computer Lab
11:00am	40' Radio Dish Orientation #2 GBO Staffer 20 person max. (sign-up sheet)	Meet at Registration Desk
12:00pm–1:00pm	Lunch Break	
1:00pm-2:00pm	Doing Astrophysics with the SeeStar Telescope Tim Hamilton	Classroom
1:30pm-3:00pm	Stars (Little Kids) Cyndi Shaver	Star Lab Room
1:30pm-3:00pm	Stellarium Activities (Big Kids) Josh Revels	Faraday Computer Lab
2:15pm-3:15pm	Smart Telescope Revolution 2025 Update PLUS Low-Budget Spectroscopy Paul Lowell	Classroom
2:30pm	40' Radio Dish Orientation #3 GBO Staffer 20 person max. (sign-up sheet)	Meet at Registration Desk
2:30pm-5:00pm	Adult Model Rocketry Jeremy Bumgardner and Eddie Zelenick	Basement
3:15pm-4:15pm	Apollo Flight Simulator Tim Hamilton	Faraday Computer Lab
4:00pm	High Tech Tour of the GBT Control Room (sign-up sheet)	Meet at Registration Desk
5:00pm-6:30pm	Dinner Break	
7:00pm-8:00pm	PROBING THE CUTTING EDGE OF FUNDAMENTAL PHYSICS WITH RADIO PULSARS DR. EMMANUEL FONSECA	Auditorium

	FRIDAY- JUNE 27, 2025	
TIMES	**EVENT**	**LOCATION**
9:45am-10:45am	Light Pollution Reconsidered Tom Reinert	Classroom
10:00am-11:30am	Little Kids and Big Kids Digital Star Lab Josh Revels and Cyndi Shaver	Star Lab Room
10:00am-11:00am	Deepsky Astrophotography with DSLR/Mirrorless Cameras with a Variety of Lenses and Telescopes Brent Maynard	Faraday Computer Lab
11:00am-12:00pm	Nancy Grace Roman Space Telescope: Coming Soon to a Lagrange Point Near You Nate Tehrani	Classroom
11:00am	40' Radio Dish Orientation #4 GBO Staffer 20 person max. (sign-up sheet)	Meet at Registration Desk
12:00pm–1:00pm	Lunch Break	
1:00pm-2:00pm	Splash! The History of Mars's Water, Real and Imagined Ramin Lolachi	Classroom
1:30pm-3:00pm	Little Kids and Big Kids Rocket Building Josh Revels and Cyndi Shaver	Star Lab Room
2:15pm-3:15pm	Exploring the "Flavors" of Cryovolcanism Caitlin Ahrens	Classroom
2:30pm	40' Radio Dish Orientation #5 GBO Staffer 20 person max. (sign-up sheet)	Meet at Registration Desk
3:30pm-4:30pm	Siril Image Processing-How to Use Siril for Planetary, Comet, Exoplanet, and Deepsky Processing Brent Maynard	Faraday Computer Lab
3:30pm-4:30pm	The Mysteries of Lyra John Raymond	Classroom
4:00pm	High Tech Tour of the GBT Control Room (sign-up sheet)	Meet at Registration Desk
5:00pm-6:30pm	Dinner Break	
7:00pm-8:00pm	WHAT CAN OCCULTING GALAXIES TEACH US ABOUT THEMSELVES? DR. BENNE HOLWERDA	Auditorium

	SATURDAY- JUNE 28, 2025	
TIME	**EVENT**	**LOCATION**
9:45am-10:15am	GROUP PHOTO	Outside Visitor Center
10:30am (after photo)	Kids' Rocket Launch Adults Rocket Launch	Meet in Field
12:00pm–1:00pm	Lunch Break	
1:00pm-2:00pm	Open Discussion on Anything Related to Astrophotography and Image Processing Brent Maynard	Faraday Computer Lab
1:00pm-2:00pm	Cecilia Payne and Nancy Grace Roman John Taylor	Classroom
2:15pm-3:15pm	Ten Years Since Pluto: New Horizons Mission Recap: Where Are We Now, Where Are We Going? Mark "Indy" Kochte	Classroom
4:00pm	High Tech Tour of the GBT Control Room (sign-up sheet)	Meet at Registration Desk
5:00pm–6:30pm	Dinner Break	
7:15pm–8:30pm	WHAT HAPPENS IF WE FIND A SIGNAL FROM ALIENS? DR. SETH SHOSTAK	Auditorium
8:30pm–10:00pm	Raffle Drawing / Certificate Awards MUST BE PRESENT TO WIN	Auditorium

	SUNDAY- JUNE 29, 2025	
7:00-10:30am	Sunday Morning Breakfast	Drake Room Residence Hall

HOLD THE DATE FOR STAR QUEST XXI:

ELLIE WHITE – Keynote

WEDNESDAY – JUNE 25, 2025

7:00 pm – 8:00 pm

BIO

Ellie White is a graduate student and longtime science geek. She is currently working on a Master's degree in Physics at Marshall University, where she also teaches introductory astronomy and physics classes. Through the years she has worked on research projects in the fields of astronomical instrumentation and the Search for Extraterrestrial Intelligence (SETI) with the Green Bank Observatory, the National Radio Astronomy Observatory, the UC Berkeley SETI Research Center, and the SETI Institute, for which she received the 2021 SETI Forward Award. She is passionate about astronomy / STEAM outreach and the importance of making science accessible, and she is a founding member of the nonprofit, West Virginia Alliance for STEM and the Arts. In her free time, she likes spending time with her family, friends, and pets, enjoying the outdoors, baking obsessively, reading, and watching too many rom coms.

DR. EMMANUEL FONSECA– Keynote

THURSDAY- JUNE 26, 2025

7:00 pm – 8:00 pm

BIO

Emmanuel works as a radio astronomer to understand compact astrophysical objects and the extreme physical environments that surround them. His research interests currently center on radio pulsars and fast radio bursts (FRBs); while pulsars are known to be rotating neutron stars, the origins of FRBs are largely unknown but are indicative of environments like those produced by neutron stars. Despite their lingering mysteries, both radio pulsars and FRBs have been shown to serve as high-precision laboratories for "fundamental physics", space plasma, and cosmological science. Emmanuel is largely interested in the exploration of relativistic dynamics of pulsars in orbital systems, as well as the applications of FRBs for cosmology, but works with various teams for all sorts of studies that use both types of phenomena.

Since 2016, Emmanuel helped construct software and hardware infrastructures for the Canadian Hydrogen Intensity Mapping Experiment (CHIME) telescope and two of its instruments that observe pulsars and FRBs. He currently helps maintain both instruments for CHIME, as well as supervises and/or co-leads science projects using CHIME data. Emmanuel also uses other premier radio observatories, such as the 100-m Green Bank Telescope, the former 305-m Arecibo Observatory, and the Very Large Array, for collecting data related to pulsar and FRB astrophysics. Since 2011, Emmanuel is also a long-term member of the North American Nanohertz Observatory for Gravitational Waves (NANOGrav); he works with NANOGrav observing and timing groups to characterize millisecond pulsars for eventually detecting gravitational radiation at nanohertz frequencies, which are suspected to be generated by a population of supermassive black holes.

Prior to joining WVU in late 2021, Emmanuel worked as a postdoctoral researcher at McGill University in Montréal, Québec, Canada, from late 2016 till early 2021. He attended the University of British Columbia from late 2010 to late 2016, where he obtained his Ph. D in astronomy. Before moving to Canada, Emmanuel obtained dual baccalaureate degrees in physics and astronomy at the Pennsylvania State University, from late 2006 till spring 2010. He was born and raised through the public education system in Malden, Massachusetts, to where his parents immigrated from Bogota, Colombia.

Dr. Benne Holwerda– Keynote

FRIDAY – JUNE 27. 2025

7:00 pm – 8:00 pm

BIO

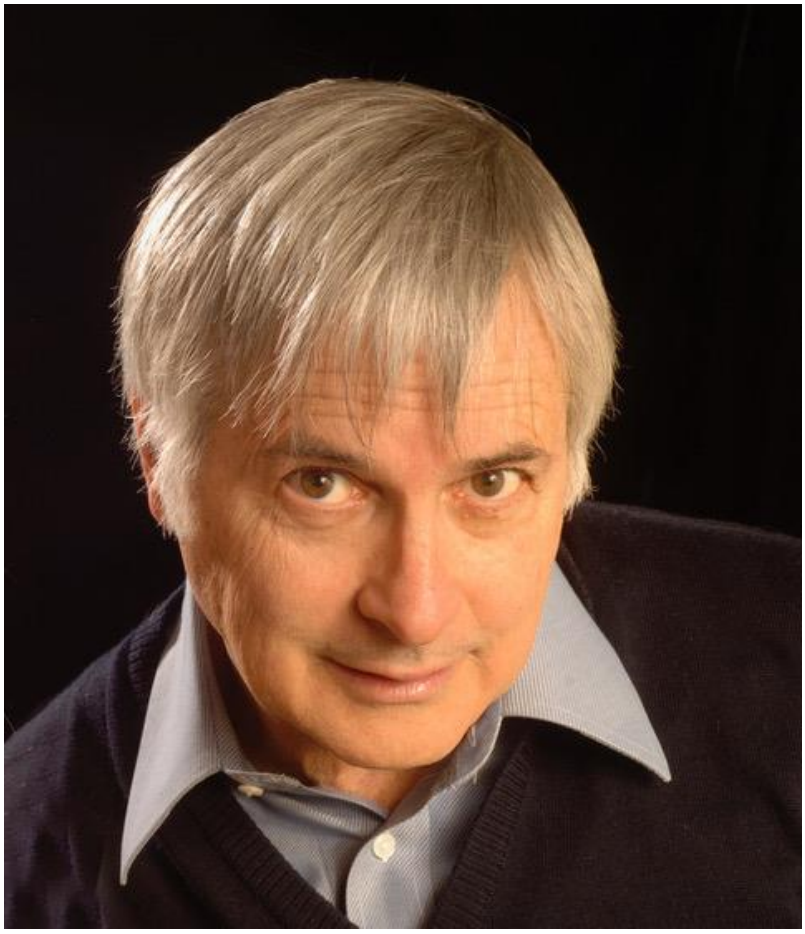
Benne Holwerda is an astronomy professor at the University of Louisville. He graduated from the University of Groningen in 2005 and worked at the Space Telescope Science Institute, the University of Cape Town, the European Space Agency, and the University of Leiden. He works on galaxy evolution with space telescopes and ground-based surveys. His interests include dust in galaxies, spiral galaxies, and galaxy morphology.

Dr. Seth Shostak – Keynote

SATURDAY – June 28, 2025

7:15 pm – 8:30 pm

BIO



Seth Shostak is Senior Astronomer and Institute Fellow at the SETI Institute. With degrees in physics and astronomy from Princeton University and Caltech, he has a long history of research in radio astronomy and in the Search for Extraterrestrial Intelligence, or SETI.

Seth has written more than 600 popular articles on science and technology, and hosts the weekly science radio show and podcast “Big Picture Science.” He has authored four books.

GUEST SPEAKERS:

CAITLIN AHRENS – Ph.D., Assistant Research Scientist, Center for Research and Exploration in Space Science & Technology, University of Maryland College Park/NASA Goddard Space Flight Center.

JEREMY BUMGARDNER - Jeremy Bumgardner has been a member of the Central Appalachian Astronomy Club since its inception. He currently serves as the Director of Observatory operations for the club's observatory. Jeremy studied astrophysics at Penn State University, and owns Insight Astronomy in Bridgeport, WV. Jeremy has been involved in amateur rocketry from a young age, and now builds high power rockets as a member of the National Association of Rocketry.

JOHN DENNIS – RN, BS in Biology and General Science, MEd.

RILEY DUNNAGAN – Administrative Assistant, Director's Office, Green Bank Observatory. Studied in the BS Physics Program with minors in Astronomy and Mathematics at Rose-Hulman Institute of Technology.

EMMANUEL FONSECA – Ph.D., Assistant Professor of Physics and Astronomy, West Virginia University; helped construct software and hardware infrastructures for the Canadian Hydrogen Intensity Mapping Experiment (CHIME) telescope; is a member of the North American Nanohertz Observatory for Gravitational Waves (NANOGrav); was a postdoctoral researcher at McGill University in Montreal, Quebec, Canada, after he obtained his Ph.D. in astronomy from the University of British Columbia; obtained dual baccalaureate degrees in physics and astronomy at the Pennsylvania State University.

TIM HAMILTON – Ph.D., Professor of Physics, Shawnee State University, Director of the Clark Planetarium.

DAVE HOLDEN – The Meteorite Man.

BENNE HOLWERDA – Ph.D., Associate Professor of Physics, University of Louisville, Louisville, Kentucky. He graduated from the University of Groningen in 2005 and worked at the Space Telescope Science Institute, the University of Cape Town, the European Space Agency, and the University of Leiden.

MARK “INDY” KOCHTE – Received a degree in Astronomy & Physics from The Ohio State University; has worked on various space exploration missions including the Hubble Space Telescope, FUSE (Far Ultraviolet Spectroscopic Explorer), MESSENGER, and CRISM (Compact Reconnaissance Imaging Spectrometer), and on the Mars Reconnaissance Orbiter. He is currently Mission Planner on both the New Horizons and the Parker Solar Probe missions, and is the instrument engineer for the Suprathermal Ion Spectrograph on the ESA mission Solar Orbiter. (He is also a long-time fan and attendee of Star Quest.)

RAMIN LOLACHI - Ph.D., Assistant Research Scientist, University of Maryland, Baltimore County/ NASA, Goddard Space Flight Center; Center for Research and Exploration in Space Science & Technology (CRESST) II.

PAUL LOWELL – Electrical Engineer; Amateur Radio, Astronomy, and High-Altitude Ballooning Hobbyist.

BRENT MAYNARD – MS, Adjunct Faculty CECS; Senior Director IT (Retired), Marshall University.

DEBBIE McKAY – AMBASSADOR FOR ACEAP (Astronomy in Chile Educator Ambassador Program) Mission Patagonia, and Cosmovisions.

JOHN RAYMOND - John Raymond is past president of the Richmond Astronomical Society. He has completed the Planetary Nebulae, Binocular Messier, Carbon Star, and Multiple Star observing programs of the Astronomical League.

TOM REINERT – Former president and board member, Dark Sky International.

JOSH REVELS – Education Outreach Specialist at NASA IV&V’s ERC, Solar System Ambassador, Citizen Science Trainer for the GLOBE Program and GLOBE at Night, Geoscience Educator at Fairmont State University, Instructor for both Earth and Space Science Passport Program and the WV Climate Change Professional Development Project, National Association of Rocketry and WV Rocketry Association member, Judge Advisor for the WV Robotics Alliance, and Executive Board Member for the West Virginia Science Teachers Association. Recipient of NASA’s 2013 Service Award for Leading the Solar Observing Station at the National Boy Scouts of America’s Jamboree and NASA’s Diversity, Equity, Inclusion, and Accessibility Agency Honor Medal for two years.

CYNDI SHAVER – Cyndi has been a member of Central Appalachian Astronomy Club since its beginning. Her father was responsible for instilling the love of astronomy in her, resulting in her and her sister becoming Co-Coordinator's for all the children's activities the club presents. She became a Solar System Ambassador in 2018 and has been providing astronomy education to children and adults alike since before she earned the title. Cyndi and her sister have also presented at the Space Exploration Educator's Conference (SEEC) at Houston's Johnson Space Center on several occasions. When she is not focused on astronomy, she is working as a Teacher for the Deaf and Hard of Hearing in Harrison County, just completing her 34th year of teaching both in person and virtually.

SETH SHOSTAK – Ph.D., Senior Astronomer Institute Fellow, SETI Institute; obtained degrees in Physics and Astronomy from Princeton University and California Institute of Technology.

JOHN TAYLOR – BS Degree in Education with a Comprehensive Field in Biological, General and Earth Sciences. Retired High School Teacher who taught 41 years, including a one-semester Astronomy class.

NATE TEHRANI – Guidance, Navigation & Control Engineer, NASA. Goddard Space Flight Center (MCSG Technologies).

ELLIE WHITE – NSF Graduate Fellow at Marshall University and founding member of the WV Alliance for STEM and the Arts (WV All STAR).

EDDIE ZELENICK – Director of Quality, Engineering, and Research & Development at BlueRidge Fiber Solutions, a #1 global independent provider of glass filament media. Eddie started in rocketry as a young child with water-propelled rockets and over the years has built level 1-5 rocket kits then went on to design and build high-powered rockets that require a certification and FAA clearance. Eddie has also been involved with astronomy and outreach for many years and enjoys meeting people from all over at star parties.

NOTES