



**THE DREAM CONTINUES**

**STAR QUEST XVIII**

**GREEN BANK STAR QUEST  
XVIII  
PROGRAM SCHEDULE**

**JUNE 21 – JUNE 25, 2023**

**<http://caacwv.com/>**

**<http://greenbankstarquest.org/>**

	GENERAL INFORMATION	
TIME	EVENT	LOCATION
9:30am-6:00pm	Registration/Welcome	Registration Desk
9:30am-6:00pm	Vendor Area Open	Visitor Center
11:00am-6:00pm	Starlight Cafe	Visitor Center
9:30am-6:00pm	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 HOODIES AVAILABLE STAR QUEST MEMORABILIA	
	MEAL TICKETS AVAILABLE	Starlight Cafe
8:30am-9:30am	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

	WEDNESDAY- JUNE 21, 2023	
TIMES	EVENT	Location
9:30am-11:00am	GBT Tour (sign-up sheet) (Three Groups of Seven)	Meet at Registration Desk
12:00pm-1:00pm	Lunch Break	
1:00pm-2:00pm	Wide-Field Imaging Techniques Using A Variety Of Camera Lenses Brent Maynard	Faraday Computer Lab
1:30pm-2:30pm	Star Trackers and Guiding: Ioptron SkyGuider Pro and Star Adventurer GTI with ZWO ASlair Plus and Mini Terry Mann	Classroom
1:30pm-3:00pm	Children's Activities Cup Constellations	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	Your Own (Near) Space Program- High Altitude Ballooning Paul Lowell	Classroom
2:45pm-4:15pm	Apollo Flight Simulation Tim Hamilton	Faraday Computer Lab
5:00pm-6:30pm	Dinner Break	
7:00pm-8:00pm	<b>PULSARS, GRAVITATIONAL WAVES, AND THE SECRETS OF THE INVISIBLE UNIVERSE DR. RYAN LYNCH KEYNOTE</b>	Auditorium
11:00pm-3:00am	40' Dish Observation Sessions	40' Radio Dish

	<b>THURSDAY- JUNE 22, 2023</b>	
<b>TIMES</b>	<b>EVENT</b>	<b>LOCATION</b>
<b>8:30am-10:00am</b>	<b>GBT Tour (sign-up sheet) (Three Groups of Seven)</b>	<b>Meet At Registration Desk</b>
<b>9:45am-10:45am</b>	<b>Meteorite Miscellany Dave Holden</b>	<b>Classroom</b>
<b>10:00am-11:00am</b>	<b>Processing Your Image Data-Will Cover Using Freeware Tools (Deepskystacker, GIMP, etc.) And Tools for Purchase/Lease (Astropixel, Photoshop/Lightroom) Brent Maynard</b>	<b>Faraday Computer Lab</b>
<b>10:00am-11:30am</b>	<b>Children's Activities Paper Airplanes</b>	<b>Star Lab Room</b>
<b>11:00am-12:00pm</b>	<b>In A World...A Hollywood View Of Planetary Exploration Caitlin Ahrens</b>	<b>Classroom</b>
<b>11:00am-12:00pm</b>	<b>Introduction to Radio Astronomy Sue Ann Heatherly, GBO</b>	<b>Faraday Computer Lab</b>
<b>11:00am</b>	<b>40' Radio Dish Orientation #2 GBO Staffer 20 person max. (sign-up sheet)</b>	<b>Meet at Registration Desk</b>
<b>12:00pm-1:00pm</b>	<b>Lunch Break</b>	
<b>1:30pm-3:00pm</b>	<b>Children's Activities Spray Paint The Planets</b>	<b>Star Lab Room/Outside Visitor Center</b>
<b>1:30pm-3:00pm</b>	<b>Adult Model Rocketry Josh Revels</b>	<b>Classroom</b>
<b>2:30pm</b>	<b>40' Radio Dish Orientation #3 GBO Staffer 20 person max. (sign-up sheet)</b>	<b>Meet at Registration Desk</b>
<b>3:15pm-4:15pm</b>	<b>Apollo Flight Simulation Tim Hamilton</b>	<b>Faraday Computer Lab</b>
<b>3:15pm-4:30pm</b>	<b>MERAL (Mid-East Regional Astronomical League) Don Knabb</b>	<b>Classroom</b>
<b>4:00pm</b>	<b>High Tech Tour of the GBT Control Room (sign-up sheet)</b>	<b>Meet at Registration Desk</b>
<b>5:00pm-6:30pm</b>	<b>Dinner Break</b>	
<b>7:00pm-8:00pm</b>	<b>DARKSKY INTERNATIONAL 2023-A PRESENTATION TO THE AMATEUR ASTRONOMY COMMUNITY THOMAS REINERT KEYNOTE</b>	<b>Auditorium</b>
<b>11:00pm-3:00am</b>	<b>40' Dish Observation Sessions</b>	<b>40' Radio Dish</b>

	<b>FRIDAY- JUNE 23, 2023</b>	
<b>TIMES</b>	<b>EVENT</b>	<b>LOCATION</b>
<b>9:45am-10:45am</b>	<b>Saturn John Taylor</b>	<b>Classroom</b>
<b>10:00am-11:30am</b>	<b>Children's Activities Planetary Exploration And Alka Seltzer Rockets</b>	<b>Star Lab Room</b>
<b>10:00am-11:00am</b>	<b>How To Get Started Imaging Galaxies: Equipment, Data Capture, And Processing Brent Maynard</b>	<b>Faraday Computer Lab</b>
<b>11:00am-12:00pm</b>	<b>Galaxies, Like Grains Of Sand-An Attempt To Understand The Scale Of The Universe Using Everyday Items Don Knabb</b>	<b>Classroom</b>
<b>11:00am</b>	<b>40' Radio Dish Orientation #4 GBO Staffer 20 person max. (sign-up sheet)</b>	<b>Meet at Registration Desk</b>
<b>12:00pm-1:00pm</b>	<b>Lunch Break</b>	
<b>1:00pm-2:00pm</b>	<b>Build Your Own Solar Rover Nathan Tehrani</b>	<b>Classroom</b>
<b>1:30pm-3:00pm</b>	<b>Children's Activities Rocket Building</b>	<b>Star Lab Room</b>
<b>2:15pm-3:15pm</b>	<b>Get Ready for the 2023 and 2024 Solar Eclipses Bob Anderson</b>	<b>Classroom</b>
<b>2:30pm</b>	<b>40' Radio Dish Orientation #5 GBO Staffer 20 person max. (sign-up sheet)</b>	<b>Meet at Registration Desk</b>
<b>3:30pm-4:30pm</b>	<b>Preparing For The 2024 Solar Eclipse: How To Image The Eclipse Without Missing The Event With Your Own Eyes Brent Maynard</b>	<b>Faraday Computer Lab</b>
<b>3:30pm-4:30pm</b>	<b>SETI: Searching For Intelligent Life In Space Jay Lockman</b>	<b>Classroom</b>
<b>4:00pm</b>	<b>High Tech Tour of the GBT Control Room (sign-up sheet)</b>	<b>Meet at Registration Desk</b>
<b>5:00pm-6:30pm</b>	<b>Dinner Break</b>	
<b>7:00pm-8:00pm</b>	<b>WEIRD SIDE OF THE MOON DR. CAITLIN AHRENS KEYNOTE</b>	<b>Auditorium</b>
<b>11:00pm-3:00am</b>	<b>40' Dish Observation Sessions</b>	<b>40' Radio Dish</b>

	SATURDAY- JUNE 24, 2023	
TIME	EVENT	LOCATION
9:45am-10:15am	GROUP PHOTO	Outside Visitor Center
10:30am (after photo)	Children's Rocket Launch Adult Rocket Launch	Meet in Field
11:00am-12:00pm	General Discussion on Astrophotography: Equipment, Tools, Software, Techniques, Tips, Etc. Brent Maynard	Faraday Computer Lab
12:00pm-1:00pm	Lunch Break	
1:00pm-2:00pm	Nightscape Planning Dave Green	Classroom
2:15pm-3:15pm	Unlocking the Universe: Gravitational- Wave and Multi-Messenger Astrophysics Maria Babiuc-Hamilton	Classroom
3:30pm-5:00pm	Astro Feud Star Harvey	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	DART : DOUBLE ASTEROID REDIRECTION TEST-THE FIRST PLANETARY DEFENSE TEST MISSION DR. RAMIN LOLACHI KEYNOTE	Auditorium
8:30pm-10:00pm	Raffle Drawing / Certificate Awards MUST BE PRESENT TO WIN	Auditorium

	<b>SUNDAY- JUNE 25, 2023</b>	
<b>7:00-10:30am</b>	<b>Sunday Morning Breakfast</b>	<b>Visitor Center Starlight Café</b>

**HOLD THE DATE FOR STAR QUEST XIX:**

## **DR. RYAN LYNCH – Keynote**

**WEDNESDAY- JUNE 21, 2023**

**7:00 pm – 8:00 pm**

**BIO**



Ryan Lynch is a staff scientist at the Green Bank Observatory with an interest in pulsars and fast radio bursts, which are some of the most extreme objects and environments known. Pulsars are the rotating remains of dead, massive stars that emit radio waves in light-house like beams, and they can be used as precise measurement tools for studying fundamental physics. Fast radio bursts are brief pulses of radio waves whose origin is a mystery, but which might be cousins of pulsars. Ryan earned his BS in Astronomy and Physics from Penn State, and his PhD in Astronomy from the University of Virginia. Before joining the staff at Green Bank Observatory, he was a postdoctoral research fellow at McGill University in Montreal, QC, and at West Virginia University.

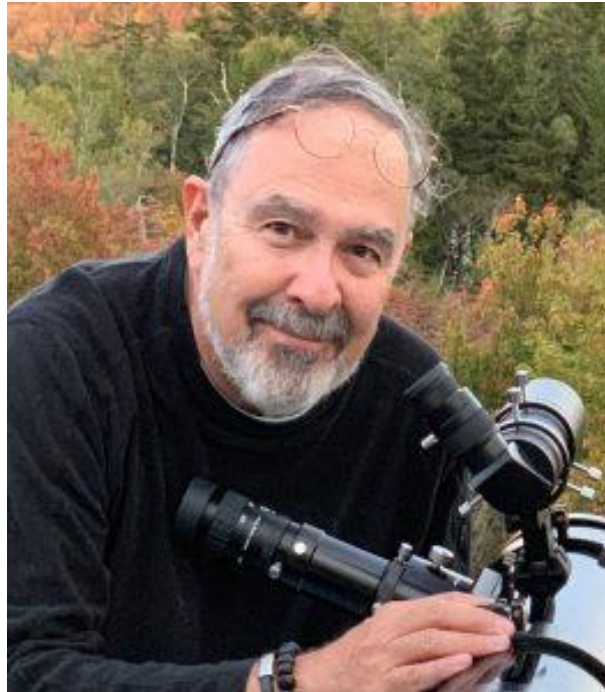


# **THOMAS REINERT – Keynote**

**THURSDAY - JUNE 22, 2023**

**7:00 pm – 8:00 pm**

**BIO**



Tom Reinert is a retired Washington, D.C. lawyer who spent most of his career representing airlines and railroads in labor and employment matters, including extensive experience translating scientific experts for lay decision-makers. He has assisted the International Dark-Sky Association on policy and legal issues for almost a decade, inspired by seeing the Andromeda Galaxy with his naked eyes from atop Kitt Peak. His prior environmental activism includes a decade fighting water pollution with a local riverkeeper organization, the South River Federation, on the Chesapeake Bay in Maryland. Currently residing in the City of Fairfax, Virginia, he is an active member of NOVAC. He and his wife Chris travel extensively in the Western United States seeking dark sky locations, and he is a member of the Tucson Astronomical Association. He is a graduate of Harvard College (where he never took an astronomy or physics course) and the Harvard Law School (where he never took an environmental law course).

Tom's presentation will be a report to the amateur astronomy community on the current status of IDA and the fight against growing light pollution, focusing on increasing awareness of light pollution, changes in the organization now known as DarkSky International, and how amateur astronomers can make a difference in reducing light pollution in the years ahead.

## **DR. CAITLIN AHRENS – Keynote**

**FRIDAY - JUNE 23, 2023**

**7:00 pm – 8:00 pm**

### **BIO**



Dr. Caitlin Ahrens has been a member of the Central Appalachian Astronomy Club since 2001. She received her B.S. in Physics/Astrophysics and Geology from West Virginia University in 2015, and a Ph.D. in Space and Planetary Science at the University of Arkansas in 2020. Caitlin is currently a NASA Postdoctoral Program Fellow at the Goddard Space Flight Center and member of the Lunar Reconnaissance Orbiter Diviner Science Team, mainly working on icy surfaces and permanently shadowed craters at the lunar poles. Caitlin also works on several planetary volcanism projects on the Moon, Mars, Ceres, Titan, and Pluto. In 2018, she received the Ten Outstanding Young Americans award (presented by the Jaycees) for her efforts in science communication and outreach.

## **DR. RAMIN LOLACHI – Keynote**

**SATURDAY- JUNE 24, 2023**

**7:15 pm – 8:30 pm**

**BIO**



Dr. Ramin Lolachi is a Postdoctoral Research Associate working for the University of Maryland, Baltimore County, based at the NASA Goddard Space Flight Center in Greenbelt, MD. His two main research foci are 1) light scattering at airless bodies like the Moon and asteroids and 2) measuring water vapor in the Martian atmosphere. He has been investigating how dust lofted above the surface of the Moon scatters sunlight to understand natural phenomena such as the mysterious Lunar Horizon Glow and the means of monitoring lunar dust, a known hazard, for the next generation of Moon explorers. He is a part of the Double Asteroid Redirection Test (DART) Investigation Team. DART is the world's first planetary defense mission and successfully reduced the orbital period of the asteroid moon, Dimorphos, about its parent asteroid Didymos by colliding into it. His involvement in the mission is to model and measure the amount of light scattered by the impact ejecta in order to fully characterize the transfer of momentum from the spacecraft to the asteroid (in other words how big a “shove” did we manage to give it). This allows us to fully understand how to use the kinetic impactor technique as a means of protecting Earth from a potential future impact.

## **GUEST SPEAKERS:**

Caitlin Ahrens – NASA Postdoctoral Program, Fellow at NASA Goddard Space Flight Center, LRO Diviner Science Team Member

Bob Anderson – Chief Telescope Engineer and Head of Telescope Operations (Retired), Green Bank Observatory

Maria Babiuc-Hamilton – Ph.D., Professor, Department of Physics, College of Science, Marshall University

Dave Green – Landscape Astrophotographer

Tim Hamilton – Ph.D., Professor of Physics, Shawnee State University, Coordinator of the Clark Planetarium

David Holden – The Meteorite Man

Don Knabb – Chair, Mid East Region of the Astronomical League; Treasurer, Chester County Astronomical Society

Mark “Indy” Kochte aka Star Harvey – Received a degree in Astronomy & Physics from The Ohio State University. Held positions with: Space Telescope Science Institute for Hubble; FUSE (Far Ultraviolet Spectroscopic Explorer); MESSENGER; CRISM (Compact Reconnaissance Imaging Spectrometer) on the Mars Reconnaissance Orbiter; New Horizons; Solar Orbiter Mission.

Jay Lockman – Astronomer at GBO: Undergraduate degree from Drexel University, Ph.D. from University of Massachusetts. Fellowship at Carnegie Institution of Washington, Director of the GBT for six years. Has published many articles in professional journals and edited several books. Involved in outreach regarding radio astronomy and related topics. Elected as a Fellow of the American Association for the Advancement of Science in 2013.

Ramin Lolachi – Planetary Scientist, University of Maryland, Baltimore County/ NASA, Goddard Space Flight Center; Center for Research and Exploration in Space Science & Technology (CRESTT) II.

Paul Lowell – High-Altitude Ballooning Hobbyist (using weather balloons to send cameras and experiments into the stratosphere)

Ryan Lynch – Staff Scientist, Green Bank Observatory, with interests in pulsars and fast radio bursts

Terry Mann – Past President of the Astronomical League, current Secretary of the

Astronomical League, Chair of the Great Lakes Region of the AL, Co-Host for Astronomical League Live online program and President of the IDA-Ohio Chapter, Astro-Imager, Aurora Chaser

Brent Maynard – Adjunct Professor Marshall University, Computer Science; Senior Director (Retired) Information Systems, Marshall University

Thomas Reinert – President, International Dark-Sky Association

Josh Revels – Education Outreach Specialist, Katherine Johnson NASA IV&V Education Resource Center

John Taylor – Central Appalachian Astronomy Club Vice-President, retired high school science teacher

Nate Tehrani – Guidance Navigation & Control Engineer, NASA Goddard Space Flight Center

## NOTES

