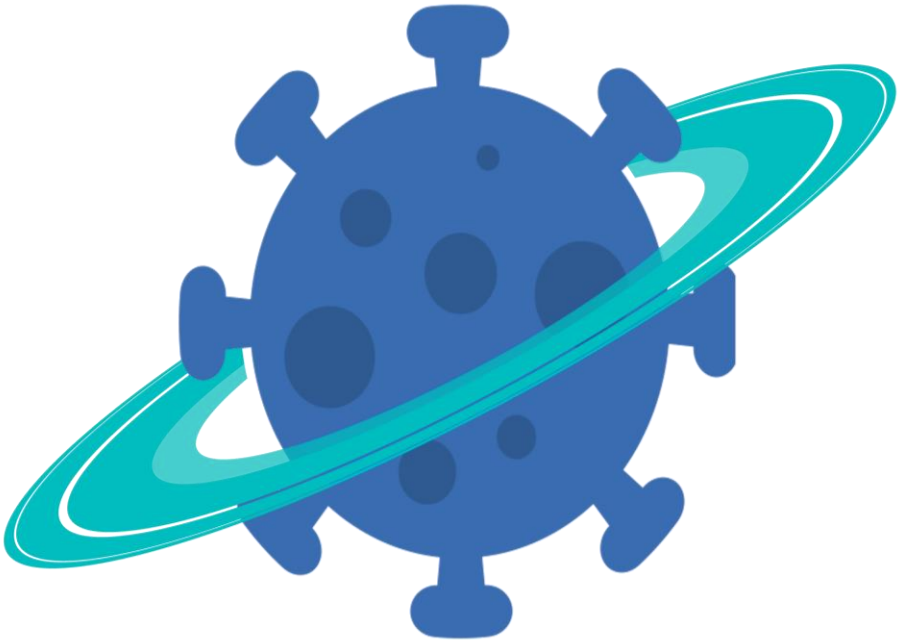

GREEN BANK STAR QUEST XVII
PROGRAM SCHEDULE

JUNE 29 – JULY 3, 2022

http://caacwv.com/

http://greenbankstarquest.org/

	GENERAL INFORMATION	
TIME	**EVENT**	**LOCATION**
9:00am-7:00pm	**Registration/Welcome**	**Registration Desk**
9:00am-6:00pm	**Vendor Area Open**	**Visitor Center**
11:00am-6:00pm	**Starlight Cafe**	**Visitor Center**
10:00am-6:00pm	**Gift Shop**	**Visitor Center**
9:00am-6:00pm	**GBO Hourly Tours / Gift Shop**	**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 29, 2022	
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	**Focal Length and Aperture, What to Use to Image the Planets All the Way to the Milky Way Brent Maynard**	**Faraday Computer Lab**
2:15pm-3:15pm	**Analyzing Moon Rocks With Astromaterials 3D Josh Revels**	**Faraday Computer Lab**
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**
3:30pm-5:00 pm	**Apollo Simulation Mission Tim Hamilton**	**Faraday Computer Lab**
5:00pm-6:30pm	**Dinner Break**	
7:00pm-8:00pm	**THE DARK SIDE OF THE UNIVERSE: DARK MATTER AND DARK ENERGY IN THE GALAXY AND COSMOS DR. SHANE LARSON KEYNOTE**	**Auditorium**
11:00pm-3:00am	**40’ Dish Observation Sessions**	**40’ Radio Dish**

	THURSDAY- JUNE 30, 2022	
TIMES	**EVENT**	**LOCATION**
8:30am-10:00am	GBT Tour (sign-up sheet) (Three Groups of Seven)	Meet At Registration Desk
9:30am-10:30am	Automating the Image Capture Process with the AsiAIR Brent Maynard	Faraday Computer Lab
9:30am-10:30am	Meteorites Dave Holden	Classroom
10:45am-11:45am	Introduction to Variable Stars Steve Boerner	Faraday Computer Lab
11:00am-12:00pm	Introduction to Radio Astronomy Sue Ann Heatherly, GBO	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**	
1:30pm-3:00pm	Children's Activities Bubbles, Bubbles Everywhere	Star Lab Room
1:15pm-2:15pm	Apollo Simulation Mission Tim Hamilton	Faraday Computer Lab
2:30pm-3:30pm	Solar Cycle 25 and the Aurora Terry Mann	Classroom
2:30pm	40' Radio Dish Orientation #3 GBO Staffer 20 person max. (sign-up sheet)	Meet at Registration Desk
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	**BANG, BOOM, POP, FIZZ: SPACE VOLCANOES!** **DR. CAITLIN AHRENS** **KEYNOTE**	**Auditorium**
11:00pm-3:00am	40' Dish Observation Sessions	40' Radio Dish

	FRIDAY- JULY 1, 2022	
TIMES	**EVENT**	**LOCATION**
9:30am-10:30am	Nancy Grace Roman Space Telescope: Mapping the Universe and Its Future Nathan Tehrani	Classroom
10:00am-11:30am	Children's Activities The Moon and It's Craters	Star Lab Room
10:00am-11:00am	Image Processing Workflow Featuring AstroPixelProcessor and Photoshop Brent Maynard	Faraday Computer Lab
10:45am-11:45am	Binocular Observing Steve Boerner	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	Finding Your Way In Space: Spacecraft Guidance and Control Nathan Tehrani	Classroom
1:00pm-3:00pm	Children's Activities Rocket Building	Star Lab Room
2:15pm-3:15pm	Observe the Nearest Star-Our Sun! Bob Anderson	Classroom
2:30pm	40' Radio Dish Orientation #5 GBO Staffer 20 person max. (sign-up sheet)	Meet at Registration Desk
3:30pm-4:30pm	Focal Length and Aperture, What to Use to Image Planets All the Way to the Milky Way Brent Maynard	Faraday Computer Lab
3:30pm-4:30pm	All Systems Go!: Planning a NASA Mission Dr. Caitlin Ahrens	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'S NEW WITH NEW HORIZONS MARK "INDY" KOCHTE KEYNOTE**	**Auditorium**
11:00pm-3:00am	40' Dish Observation Sessions	40' Radio Dish

	SATURDAY- JULY 2, 2022	
TIME	**EVENT**	**LOCATION**
9:30am-10:00am	GROUP PHOTO	Outside Visitor Center
10:30am (after photo)	Children's Activities Rocket Launch	Meet in Field
11:00am-12:00pm	Preparing For A Night Of Image Capture: Gear, Polar Alignment, Camera Settings, Power, Etc… Brent Maynard	Faraday Computer Lab
12:00pm–1:00pm	Lunch Break	
1:00pm-2:00pm	Discoveries In Radio Astronomy: Serendipity or Sweat? Jay Lockman	Classroom
1:00pm-2:00pm	Analyzing Moon Rocks With Astromaterials 3D Josh Revels	Faraday Computer Lab
1:00pm-2:30pm	Children's Activities Solar System Spray Paint (Open to All Ages)	Star Lab Room/Outside Visitor Center
2:15pm-3:15pm	Challenges and Opportunities In Gravitational Wave Astrophysics Maria Babiuc-Hamilton	Classroom
3:30pm–5:00pm	Astro Feud (Sign ups-First Come, First Serve) Star Harvey (With 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	RETURNING A PIECE OF THE ANCIENT SOLAR SYSTEM: NASA's OSIRIS-REx MISSION DR. JASON P. DWORKIN KEYNOTE	Auditorium
8:30pm–10:00pm	Raffle Drawing / Certificate Awards MUST BE PRESENT TO WIN	Auditorium

	SUNDAY- JULY 3, 2022	
7:00-10:30am	Sunday Morning Breakfast	Visitor Center Starlight Café

HOLD THE DATE FOR STAR QUEST XVIII:

DR. SHANE Larson– Keynote

WEDNESDAY- JUNE 29, 2022

7:00 pm – 8:00 pm

BIO

Shane Larson is a research professor of physics at Northwestern University, where he is the Associate Director of CIERA (Center for Interdisciplinary Exploration and Research in Astrophysics). He works in the field of gravitational wave astrophysics, specializing in studies of compact stars, binaries, and the galaxy. He works in gravitational wave astronomy with both the ground-based LIGO project, and future space-based observatory LISA. He was formerly a tenured associate professor of physics at Utah State University. He is an award winning teacher, and a Fellow of the American Physical Society. He is an avid amateur astronomer, observing with two homebuilt Dobsonians, a 12.5" named EQUINOX and a 22" named COSMOS MARINER. He contributes regularly to a public science blog at writescience.wordpress.com, and tweets with the handle @sciencejedi .

DR. CAITLIN AHRENS – Keynote

THURSDAY- JUNE 30, 2022

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.

MARK “INDY” KOCHTE– Featured Speaker

FRIDAY- JULY 1, 2022

7:00 pm – 8:00 pm

BIO

Mark ‘Indy’ Kochte had always been interested in space and astronomy since he was a pre-teen. To that end, he pursued a degree in Astronomy & Physics from the Ohio State University, and in 1988 joined the Space Telescope Science Institute prior to launch of the Hubble Space Telescope, where he was instrumental in performing the data processing and archiving for Hubble. After 17 years he move to the FUSE (Far Ultraviolet Spectroscopic Explorer) mission, where he learned to tackle the unique challenges of planning and scheduling of the ailing ultraviolet-viewing space telescope. In 2006 he joined the MESSENGER mission as a Payload & Mission Operations Specialist, sequencing critical instrument and spacecraft commanding until the spacecraft’s sudden and inevitable impact-on-Mercury fate on April 30th, 2015. Concurrently, late summer 2014, he joined the ranks of the New Horizons mission as a Mission Analyst to perform similar critical sequencing of the spacecraft as on MESSENGER. In 2016 Indy took a year-long science sabbatical from mission operations to work with the CRISM (Compact Reconnaissance Imaging Spectrometer) science team, an instrument on the Mars Reconnaissance Orbiter, to identify ancient deltas and alluvial fans on Mars and identify potential landing sites for the Mars lander, InSight. In 2017 he once again returned to mission operations as the New Horizons team began prepping for the ultimate exploration of our solar system: the flyby of Kuiper Belt Object MU69 (Arrokoth) and the many adventures that lay beyond. In 2022 he also joined the Solar Orbiter mission as a command sequence lead for the SIS (Suprathermal Ion Spectrograph) instrument. More on that in the future.

Throughout his tenure in space mission operations, Indy has published a half a dozen papers on spacecraft design and mission operations, as well as co-authored a dozen additional papers on spacecraft design, mission operations, and science analysis results of early exoplanet research.

Not being an all-work/no-play kinda guy, in his spare time, when not staring at the stars, Indy can be found exploring the world we live on. In addition to having authored the rock climbing guidebook “Climb Maryland!” (and currently is finishing up a second edition), he is often out scaling cliffs from Maryland to Thailand, mapping cave systems in West Virginia, mountain climbing in the Rocky Mountains or Cascades, diving for fossilized Megalodon shark teeth (or to just look at the pretty fish) in the Atlantic or Caribbean, working on various time-lapse and astrolapse photography projects, or generally capturing moments in time by photographing the world around us. No moss gathers under his feet!

DR. JASON P. DWORKIN – Keynote

SATURDAY- JULY 2, 2022

7:00 pm – 8:00 pm

BIO

Dr. Jason Dworkin is the Senior Scientist for Astrobiology in the Solar System Exploration Division at NASA Goddard Space Flight Center (GSFC) in Greenbelt, MD, and the Project Scientist for NASA's OSIRIS-REx mission. OSIRIS-REx is currently returning to Earth to deliver a sample of the ancient near-Earth asteroid Bennu for world-wide scientific analysis. His research objective is to assess the organic species available for the origin and early evolution of life with a focus is on understanding the extraterrestrial input and origin of molecules relevant for life. This objective has been to study increasingly documented and constrained systems, from plausibly early Earth chemistry, chemistry of astrophysically relevant laboratory ices, organic and chiral analysis of meteorites, to analysis of sample returned material and how to protect that material from contamination. This research employs modern analytical methods in the GSFC Astrobiology Analytical Laboratory to examine authentic samples of the early solar system as well as laboratory models of ancient environments.

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

Steve Boerner – Retired Chemistry Teacher; Astronomical Society Awards for Master Observer (Advanced), Master Binocular Observer, Master Imager Program Coordinator, Astronomy Before the Telescope Certification, Radio Astronomy Observing Program, Spectroscopy Observing Program, Citizen Science Observing Program Committee, Lead Author Foundations of Imaging Observing Program, AAVSO member and mentor.

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

David Holden – The Meteorite Man

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.

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

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

Nate Tehrani – Attitude Control Software Engineer, NASA Goddard

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