Planning a Night Sky Viewing at Your Library

Presenters: Brooks Mitchell (STAR Net) and Keliann LaConte (STAR Net)

The webinar will begin at 2:00 p.m. (MT) and will be recorded.

While you’re waiting:

1) Find the toolbar – it will either be on the bottom or top of your Zoom window
2) Introduce yourself in the chat box
3) Click audio “Join by Computer” – you won’t have microphone access
- Find the toolbar – it will either be on the bottom or top of your Zoom window. From here, you can pull up features like “Poll”, “Chat”, and “Q&A”

- Default is “Active Speaker” … whoever is talking will be displayed primarily. Recommended speaker view.

- Layout when screensharing:

- Help: https://goo.gl/eF1Jgv
Today’s Agenda

1. Introduction and Reminders
2. Hands-on Activity: Big Dipper Star Clock
3. What is a Night Sky Viewing?
4. Hands-on Activity: Planet Party
5. Hands-on Activity: Sky Heroes
7. Hands-on Activity: Constellation Detectives
8. Q&A
STAR Net Team Member

Introduction

• Keliann LaConte
• Brooks Mitchell
• Stephanie Vierow-Fields
• Claire Ratcliffe
• Greg Mosshammer
NASA@ My Library and STAR Net are partnering with the Collaborative Summer Library Program to support 16,000 libraries.

Please join us!!
Join STAR Net!
www.starnetlibraries.org

Professional development resources, including webinars, newsletters, blogs, forums, videos, and much more!
FREE STAR Net Resources
(take a picture of this slide!)

180+ Activities Specifically for #STEMINLIB
http://clearinghouse.starnetlibraries.org/

Upcoming and Archived Professional Development
Webinars
https://www.starnetlibraries.org/resources/webinars/

Monthly Newsletter
https://www.starnetlibraries.org/resources/newsletters/

Upcoming STEM Events
https://www.starnetlibraries.org/upcoming-events/

STAR Net Blog (for library staff and written
by library staff!)
https://www.starnetlibraries.org/blog/

Partnership Resources
https://www.starnetlibraries.org/stem-in-libraries/collaboration/partnership-opportunities/

Community Dialogue Resources
http://www.starnetlibraries.org/resources/community-dialogues/
For example: DIY Sun Cookies

Like an activity and think other library staff should know how great it is? Didn’t like an activity or have modifications to make it better? Make sure to leave a review!
Join STAR Net’s “Summer of Space” Page

STAR Net Partners with the Collaborative Summer Library Program (CSLP) for the 2019 Summer Learning Program

In the summer of 2019, 16,000 libraries across the country will celebrate space exploration in their summer reading programs. The slogan “A Universe of Stories” was chosen by library professionals to help inspire children of all ages to dream big, believe in themselves, and create their own story. CSLP and STAR Net are partnering to share STEM resources with these libraries.

This summer learning program will coincide with NASA’s 60 years of achievement and its celebration of the 50th Anniversary of the Apollo Moon Landing.

Register Your Library and Get Notified of Valuable Resources!

If you’re interested in getting important resource notifications and other news for 2019’s Summer Learning Program, register your library’s participation to receive this important event newsletter.

Registration Benefits:
- A monthly newsletter curated with valuable resources and opportunities
- Automatic entry for chance to win 1 of 2 FREE Orion StarBlast Telescopes (open to U.S. public libraries only)
- Library representation on STAR Net’s “Summer of Space” Map (below)

Register Your Library Today!
Poll Question

• What US President started NASA?
Big Dipper Star Clock

- Find the time by using the stars! …or find the stars by using the time!

- Face north; position the current month at the top of the clock

- During Daylight Savings, add one hour
Poll Question

• Who has hosted a Night Sky Viewing?
Poll Question

• Who has attended a Night Sky Viewing?
Poll Question

• Who has looked through a telescope before?
A Message From Solar System Ambassadors and the Night Sky Network
Navigating NSN/SSA Resources

https://nightsky.jpl.nasa.gov/

https://solarsystem1.jpl.nasa.gov/ssa/home.cf
Jupiter with four of its moons: Io, Europa, Ganymede and Callisto

Credit: NASA
https://nasa.tumblr.com/post/160203154374/whats-up-for-may
Night Sky Viewing Events

Credit: Halfblu
Planet Party

Visitors view planets, the Moon, and stars in the sky with the naked eye and binoculars or telescopes. Planning resources and tips for partnering with a local astronomical society are provided.

Content Area
Astronomy and Space
Physics
Engineering

Age Group
Family
Tweens (9-12)
Adults

Time to Complete Activity
20-40 minutes

Time needed to prep Activity
20-40 minutes

Cost associated with Activity
Materials
$5-$10

Report a broken link
Categorized Incorrectly? Let us know!
Throw a Star Party!

Tips for Offering a Nighttime Viewing Session with Telescopes

1. Pick a date at which one or more bright objects will be high in the evening sky. Select a time when planets will be visible in the early evening sky using sources such as StarDate, the Planet Finder applet, or other planetarium program. Try to avoid dates when the Moon is full or nearly full (see below), as its light will wash out other nighttime objects. The Moon itself is best viewed when it is a crescent or in first quarter. A brief tour of the month’s constellations, deep-sky objects, planets, and events is available through Tonight’s Sky. (Note: Venus and Jupiter are almost always bright when visible, Mars is often bright, and Saturn and Mercury are always a bit faint. Uranus and Neptune are too faint to see without telescopes or binoculars.)

2. Identify a start and end time for your program on your intended date. Best viewing times will begin about an hour after sunset. Find sunset times and Moon phases for your area through http://www.sunrisunset.com/ or similar sources.

3. Optional: Contact your local astronomy club or other amateur astronomers. To contact your local astronomy club, type in your zip code at Astronomical League or search at Sky and Telescope. Let them know which planets or other objects you would most like for the children to see.

4. Provide a viewing area, preferably away from bright lights and traffic. Try to avoid nearby obstructions, such as trees or buildings, which will block certain sections of the sky. Will the objects you intend to view be visible from that location in early evening?

5. Plan for access to restrooms, and if possible, to drinks. Have water available for amateur astronomers and visitors.

6. Have a back-up plan in place before the announcement for inclement weather: Will the event be cancelled, postponed, or moved inside with different activities? If the event is cancelled or postponed, at what time or point will the decision be made to do so, and how will the audience hear about it?

7. If appropriate, plan to have the viewing area sprayed for mosquitoes or treated for fire ants in advance of the observing session.

8. If possible, ask for nearby bright overhead lights and sprinkler systems to be turned off during the period of the observing session.
Activity Guide: Discussion Prompts

• What color was it?
• How many objects were there? How were they arranged?
• How have the planets moved through the night sky?
Sky Heroes

- Great pre-Night Sky Viewing Activity
- Easy and fun to facilitate
- Strong story-time tie-in
  - What constellation books have you used in the past?
Sky Heroes Extensions

• Combine with the “Star Power” activity to project constellations!

• Patrons create their own fictional hero and story, then create constellations

• Let patrons experiment with a night sky simulator or augmented reality tool, such as Sky Walker or Google Sky
What do you see in the Moon?
Trace out the Moon’s surface features to show what shapes you see in the Moon.

Write your own story about these features here:

Well, team, I see how everything came together to form the Moon we know and love. It’s beautiful!

I learned a lot about the Moon through our journey back in time, but now I have more questions! Our jobs as scientists are never done. What are your questions about the Moon?
An Earth-based Tour Of The Moon

A quick look at the Moon in the night sky (even without binoculars) shows light areas and dark, somewhat circular areas. These different features record our Moon’s history. Can you find them? Use the map to help guide your viewing.

The binoculars symbol (ocular magnifier) means that the feature is too small to see with just your eyes and you will need binoculars (a tripod will help) or a telescope.

Sea of Rains (Mare Imbrium) — Imbrium Basin, one of the largest impact basins on the Moon, formed when a huge impactor hit the lunar surface a little more than 3.8 billion years ago. Floods of lava filled the basin floor 500 million years later. This cooled to form a dark, fine-grained igneous rock — basalt — creating the dark, smooth surface of the mare.

Apennine Mountains — The lunar surface is punctuated by mountain ranges — the uplifted rims of impact basins. Apollo 15 astronauts worked in the shadow of Mount Hadley, one of the peaks of the Apennine Mountains that form the rim of Imbrium Basin. Mount Hadley is almost 3 miles (4.6 kilometers) high!

Sea of Serenity (Mare Serenitatis) — Apollo 17 astronauts sampled some of the oldest rocks on the Moon from the basin walls surrounding the Sea of Serenity. These ancient rocks formed in the Moon’s magma ocean 4.5 billion years ago. They were exposed at the lunar surface when a huge impactor struck the Moon 3.9 billion years ago, forming Serenitatis Basin.

Sea of Tranquility (Mare Tranquillitatis) — This 500-mile-wide (800-kilometer) basalt lava plain is the site of the Apollo 11 landing in 1969. It fills an ancient basin, created when a huge impactor struck the Moon more than 3.8 billion years ago.

Lunar Highlands — The brighter, light-colored regions on the Moon are the lunar highlands. These areas, formed from the magma ocean, make up the oldest crust of the Moon. Because they are so old, they have been hit by impactors many more times than the dark, smooth basalt plains, making the highlands very rough.

Copernicus Crater — A small, bright circle south of Imbrium Basin, with rays spreading up to 500 miles (800 kilometers) in all directions, marks Copernicus Crater. Its sharp rays and crisp rim indicate Copernicus is geologically young. Rocks suspected to have been formed by the impact are 800 million years old.

Tycho Crater — A bright star of material stands out on the light-colored lunar highlands of the Moon’s southern hemisphere. This is Tycho Crater, which is 53 miles (85 kilometers) wide, and has ejecta rays stretching over 1200 miles (2000 kilometers) north to the Apollo 17 landing site. The age of material collected near this site suggests the crater formed about 110 million years ago.

How many features can you identify on a clear night?
Constellation Detectives

• Short, sweet, and cheap!
• Good activity for:
  • Younger Patrons
  • Stations
  • Take-home