

Mars Activities for “A Universe of Stories”

Presenters: Brooks Mitchell (STAR Net) and Claire Ratcliffe (STAR Net)

The webinar will begin at 2:00 pm (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 (please select “Share with All” *not* “Share with Panelists”)
- 3) Click audio “Join by Computer” – you won’t have microphone access

Tip for viewing: You can resize and move the location of the video and slide screens by clicking and dragging them

STAR Net Team Member Introduction

- Brooks Mitchell
- Greg Mosshammer
- Claire Ratcliffe

Today's Agenda

1. Clearinghouse Overview
2. Poll Question
3. Mission Update: Mars InSight
4. Hands-on Activity: *Recipe for a Planet*
5. Hands-on Activity: *My Trip to Mars*
6. Hands-on Activity: *Search for Life*
7. Poll Question
8. Hands-on Activity: *Mars Engineering*
9. Q&A

Poll Question

Would you rather go to:

- a. Mars
- b. Moon
- c. Pluto
- d. Alpha Centauri
- e. Alderaan

STEM ACTIVITY Clearinghouse



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"

STARnet

Science Technology Activities &
Resources For Libraries

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STEM IN LIBRARIES

SEARCH STEM ACTIVITIES

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](#).



LEARN MORE ABOUT CSLP



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!

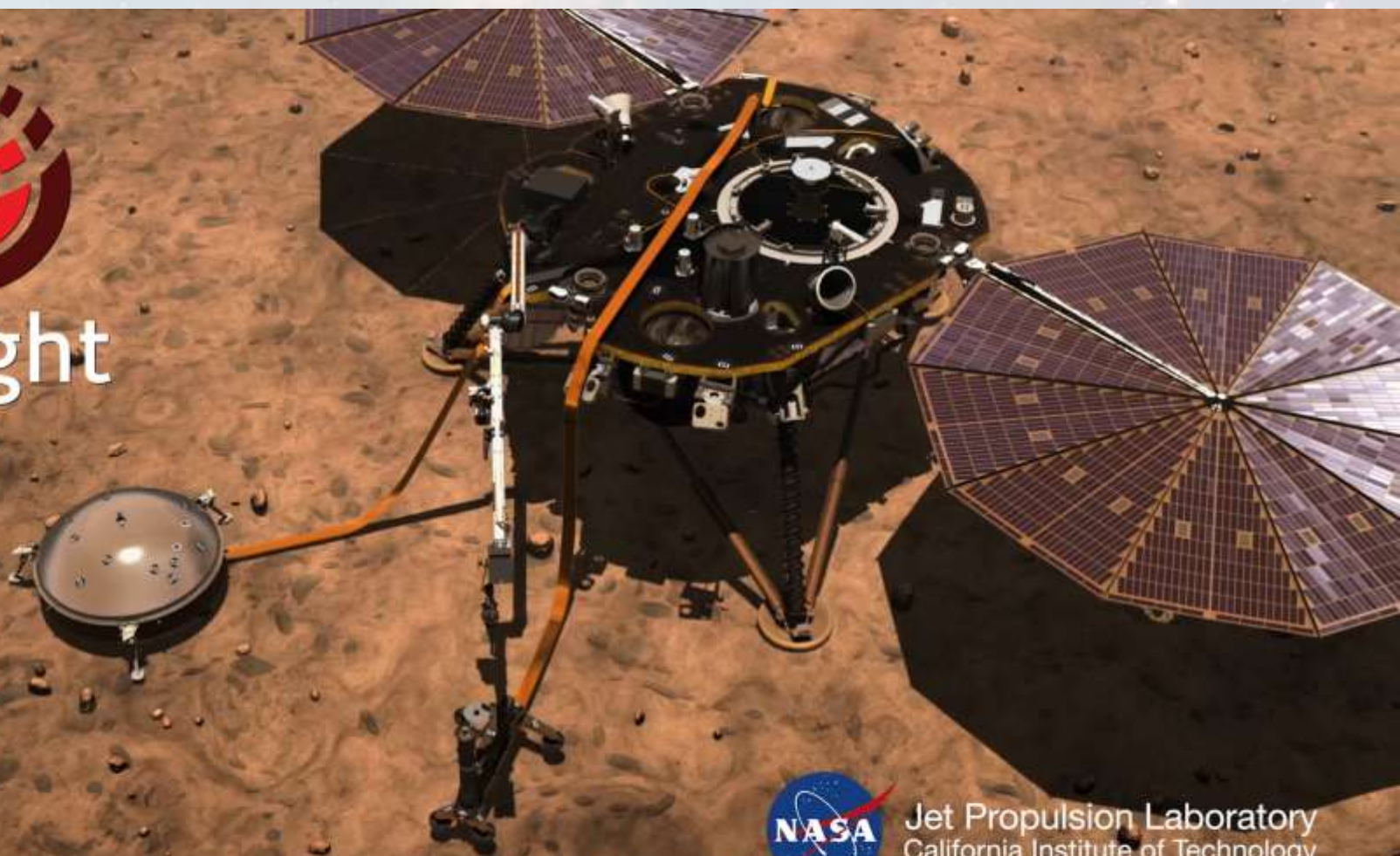
STEM for All Video Showcase

- *STAR Net* recently entered a video in the STEM For All Video Showcase - <https://stemforall2019.videohall.com/>
- *STAR Net's* 3-minute video focuses on how the organization has prepared libraries for the 2019 Collaborative Summer Library Program summer learning theme, "A Universe of Stories."
- Online showcase and voting takes place from 5/13 – 5/20
- Read more on our blog - <https://bit.ly/2V6tj9p>
- See a sneak peak of the video here - <https://bit.ly/2UQ4dXx>

InSight: Mission Background



InSight



Jet Propulsion Laboratory
California Institute of Technology

InSight Update

- Launched May 5, 2018
- Landed November 26, 2018
 - First data arrived back to Earth ~16 minutes later
- Instruments rolled out in the following weeks

Did anyone do programming for the InSight launch or landing?

How's the Weather on Mars?

Latest Weather at Elysium Planitia

InSight is taking daily weather measurements (temperature, wind, pressure) on the surface of Mars at Elysium Planitia, a flat, smooth plain near Mars' equator.

Sol 151
April 30

High: 0° F | C
Low: -143° F | C

Sol 145
Apr. 24

High: -3° F
Low: -145° F

Sol 146
Apr. 25

High: 0° F
Low: -145° F

Sol 147
Apr. 26

High: -8° F
Low: -145° F

Sol 148
Apr. 27

High: -1° F
Low: -146° F

Sol 149
Apr. 28

High: -3° F
Low: -146° F

Sol 150
Apr. 29

High: -5° F
Low: -145° F

Sol 151
Apr. 30

High: 0° F
Low: -143° F



InSight Update

- On April 6, 2019, InSight recorded its first clear seismic event on the surface on Mars



Hands-On Activity: Recipe for a Planet

Materials:

- Rice Krispies treats
- Red icing
- Regular size chocolate chips
- Red sprinkles in a baggie
- Plastic knife
- Plate
- Wet wipes!

Hands-On Activity: My Trip to Mars

A game that steps through a human mission to Mars!

Materials:

2-4 dice

Print-outs of “Poster Scenarios”

6 poster boards for mission stages



Step One Launch



The weather is too
stormy! Try again on
another day.

Roll again.

2 Launch Com Officer



Ground Control reports
that the communication
system is not working.

Roll again.

3 Launch

Flight
Activities
Officer



All systems check out
and you're ready to go.

Your launch is
successful!

Go to Step Two: Travel.

Hands-On Activity: Search for Life

Patrons discuss how life is defined and look for signs of life in three different “soil” samples

Materials

3 clear plastic cups

1 cup sand

3 tsp sugar

1 tsp dry yeast

1 tablet of crushed Alka-Seltzer

Hot water



Discussion

How would you
define a living
thing?



Hands-On Activity: Search for Life

- Participants work in groups
- Observe the cups before and after hot water is added
- To describe their observations, consider providing younger patrons with possible words; older participants may use their own words

1. Compare the three cups of material before adding the hot water. Observe without touching or tasting any of the samples (smelling is okay, as is touching the outside of the cup). Circle the words you would use to describe each cup and draw each in the cup-shaped space below. Do any show any signs of life?

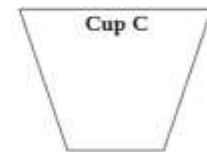
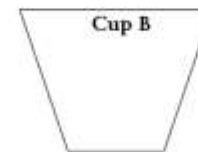
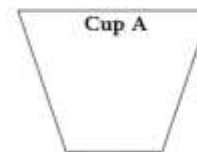
Cup A

growing	slushy	foamy	warm	cold	moving
shrinking	bubbly	smelly	(add your own description)		

Cup B

growing	slushy	foamy	warm	cold	moving
shrinking	bubbly	smelly	(add your own description)		

growing	slushy	foamy	warm	cold	moving
shrinking	bubbly	smelly	(add your own description)		



Poll Question

- We know that summer is a busy time for library staff! How likely is it that you could attend STAR Net webinars during the summer?

Not happening

Unlikely, but there's a chance

I could attend
summertime
webinars

More likely to attend
during the summer

I couldn't attend, but would view
it later

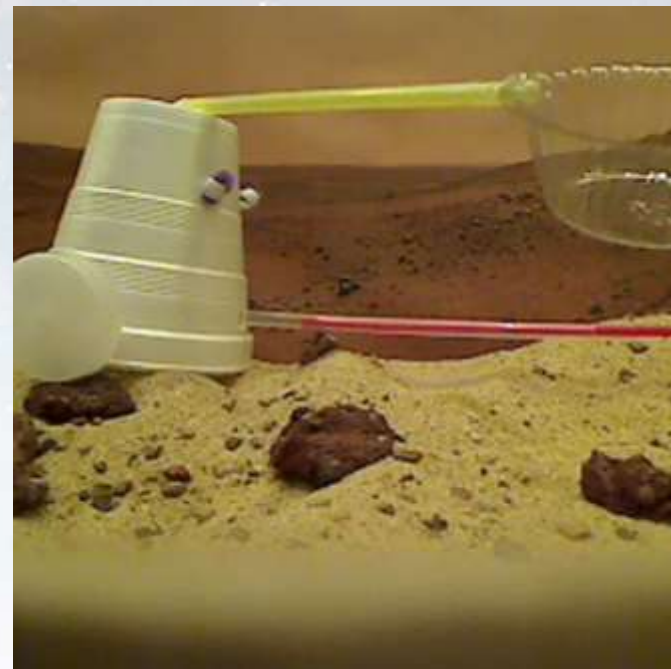
Engineering Design Process ...in SPACE!





Mars Engineering

- Each team's mission: design and build a rover out of the materials available that can pick up, move, and set a rock down into a (fake) scientific instrument on the rover body



Mars Engineering Materials

Mandatory: variety of tape, scissors, markers, glue, foil, 3 small rocks

Miscellaneous Craft and Everyday Items: Straws, pencil top erasers, beads of various sizes, foil cupcake holders, screens, wooden miniatures, aluminum foil, plastic wrap (of all colors), old CDs, pipe cleaners, toothpicks, wire, wire cutters, Legos, construction paper (variety of colors, black), tinsel, ribbon, fabric, gauze, wood dowels/skewers, rubber bands, shiny streamers, etc.


For Rover Wheels: Wooden spools, large buttons, bottle caps, plastic cups (sturdy), empty (clean) Play-Doh® containers, old CDs, etc.

For Rover Body: Pint-sized milk containers, coffee cans, soup cans (tape any sharp edges), paper or Styrofoam cups, or other objects for the spacecraft body, empty DVD cases, black plastic or biodegradable seedling (plant) trays, empty egg cartons, cereal boxes, 2-liter soda bottles, different-sized Styrofoam blocks, other empty plastic or cardboard containers/boxes, etc.

Other Mars Activities

- **Dunking the Planets**
 - Participants place scale models of the planets, represented by fruit and other foods, in water to determine their density
- **Mars Match Game**
 - Patrons view images of Earth and Mars to compare features, just like a scientist (planetary geologist) would. After matching pairs of Earth features with Mars analogues, they discuss why they matched the pairs together.
- **Build a Space Colony**
 - Participants design technology to provide air to breathe, plentiful food, shielding from ultraviolet light, power, and more for space explorers.
- **Strange New Planet**
 - In this simulation of space exploration, participants plan and carry out five missions to a “planet” and communicate their discoveries to their family or a friend.

Questions?

A photograph of an astronaut in a white spacesuit standing on the lunar surface. To the left, an American flag is planted in the ground. The surface is covered in lunar dust and rocks, with footprints visible in the foreground. The background is the dark, featureless sky of space.

Universe of Stories Summer 2019

NASA@ My Library and *STAR Net* are partnering with the Collaborative Summer Library Program to support 16,000 libraries.

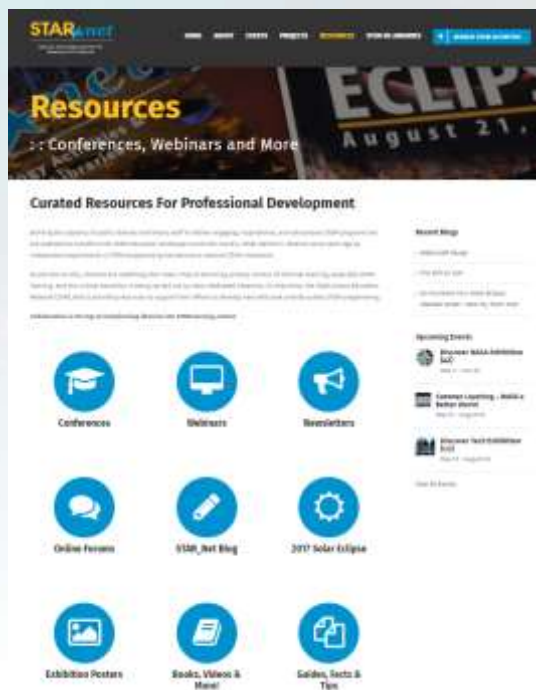
Please join us!!

Learn more about how to register:

www.starnetlibraries.org/summer-of-space

Join STAR Net!

www.starnetlibraries.org



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development resources,
including webinars,
newsletters, blogs,
forums, videos, and
much more!