



Connecting with the Cosmos — Day or Night!

Introductions

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- And you?



Our Three Goals Today



1. To increase your knowledge about galaxies, so you can connect your audiences with the cosmos in a variety of settings
2. To introduce you to NASA-created curriculum support materials about galaxies that were pilot-tested at Death Valley National Park
3. To walk you through hands-on STEM activities you can immediately use in your programming



What have you
heard about galaxies?

What is a galaxy?



- A whole bunch of stars, along with gas and dust, bound together by gravity
- The stars within the galaxy progress through a 'life-cycle' and are all different sizes, ages, and compositions
- We like to make an analogy to a city with stars instead of people

Galaxies come in many shapes and sizes!



M106



NGC 1316



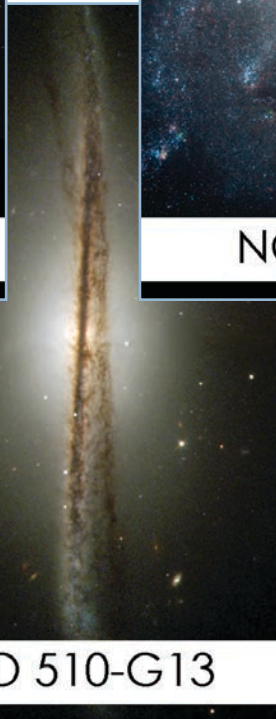
NGC 4449



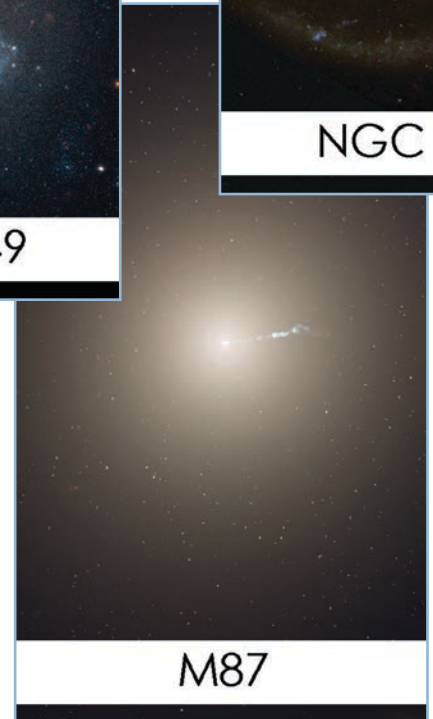
NGC 4622



ESO 325-G004



ESO 510-G13



M87

Scientific categorization of galaxies

Spiral Galaxies



Whirlpool Galaxy
Credit: NASA



Andromeda Galaxy
Image courtesy and copyright: Rob Gendler
<http://www.robgendlerastropics.com/>

Elliptical Galaxies



M87
Credit: NASA

Irregular Galaxies

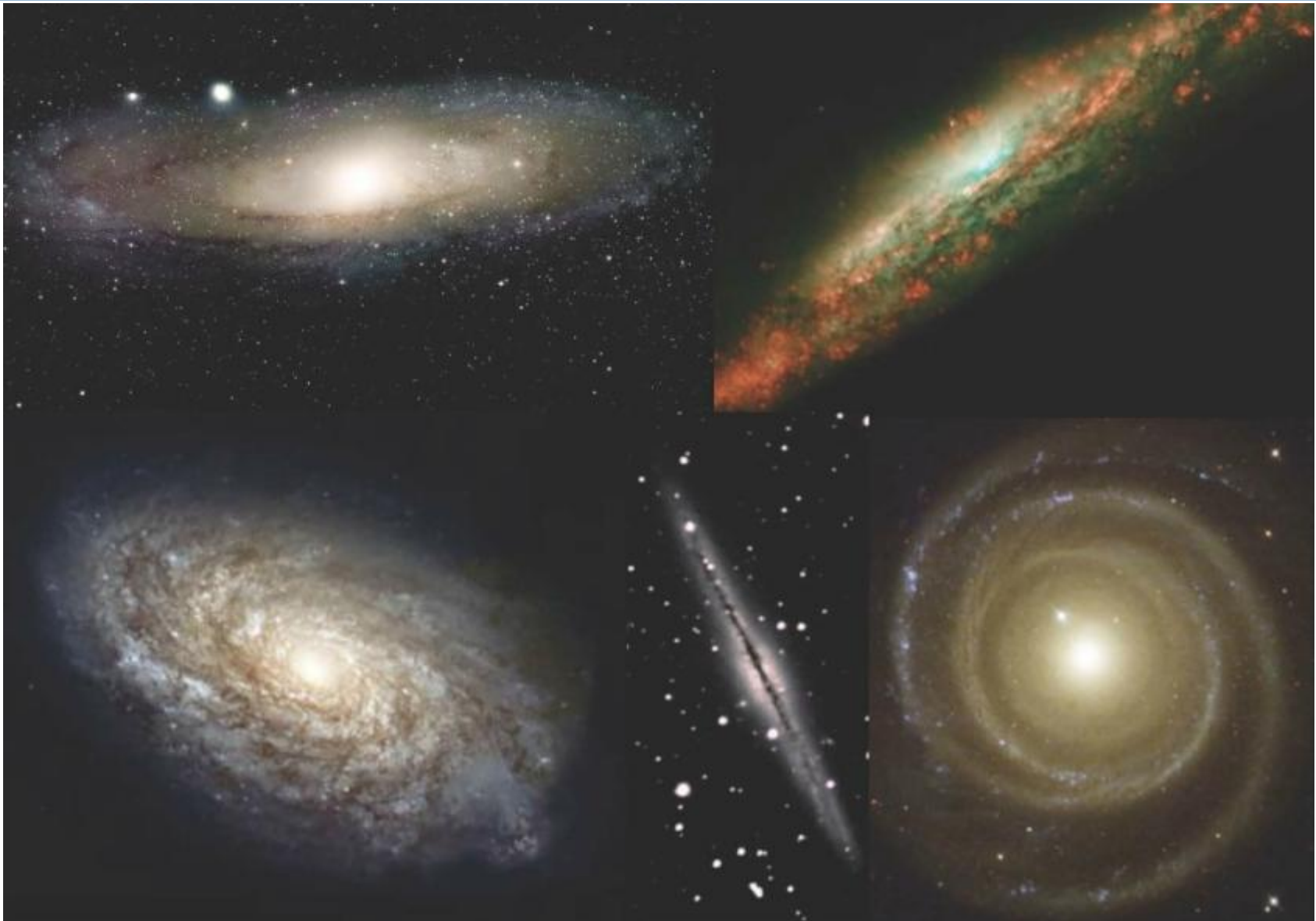


Large Magellanic Cloud
Image courtesy and copyright: Rob Gendler
<http://www.robgendlerastropics.com/>



Small Magellanic Cloud
Image courtesy and copyright: Stéphane Guisard
<http://www.astrosurf.com/sguisard/>

Perspective adds challenges



There are a lot of galaxies out there...



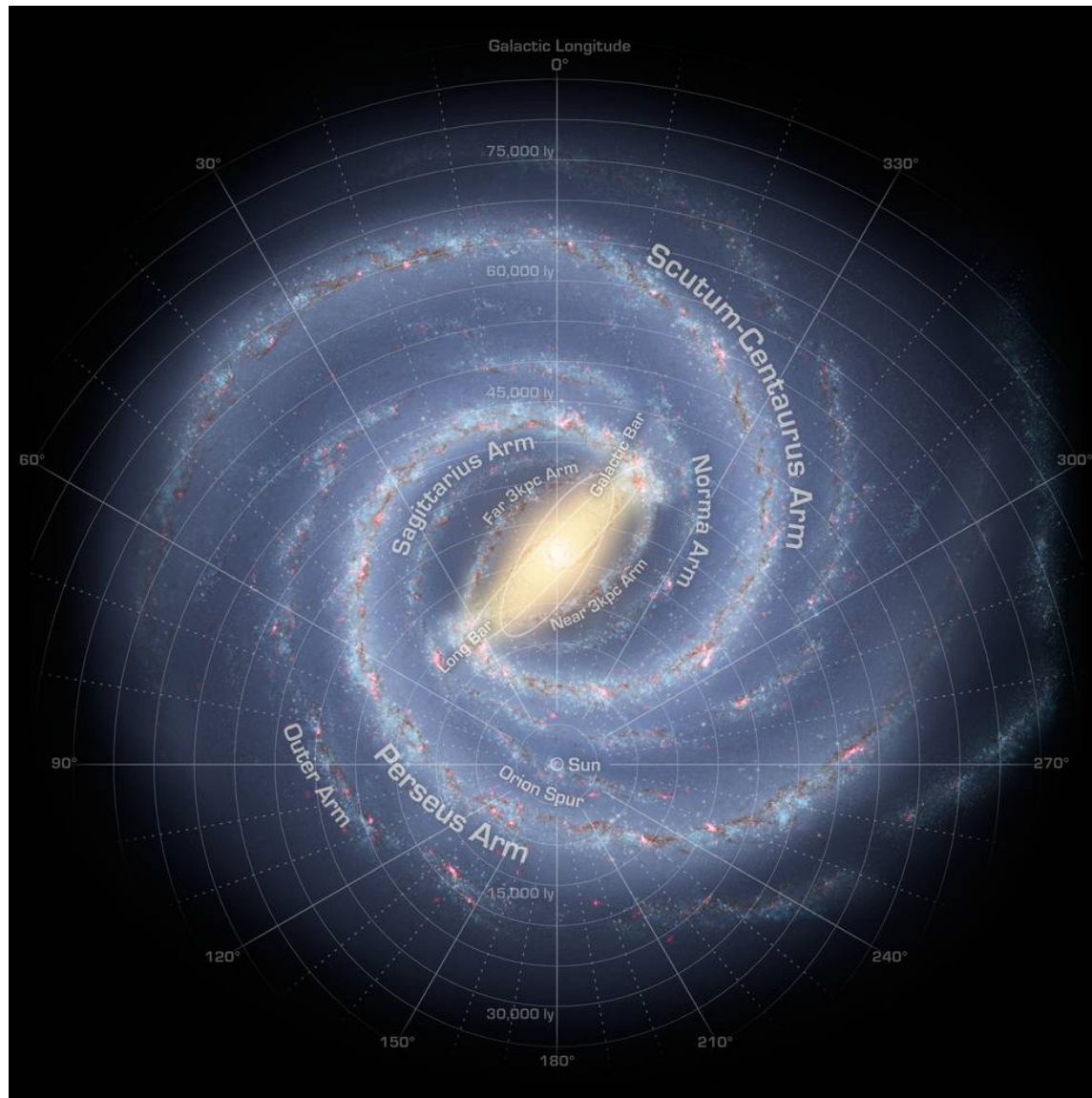
...but only one of them is our home.



...but only one of them is our home.



Data tells us what it might look like



We think about galaxies at night...



Credit: NPS/Weston Kessler

...but we live inside one 24/7!

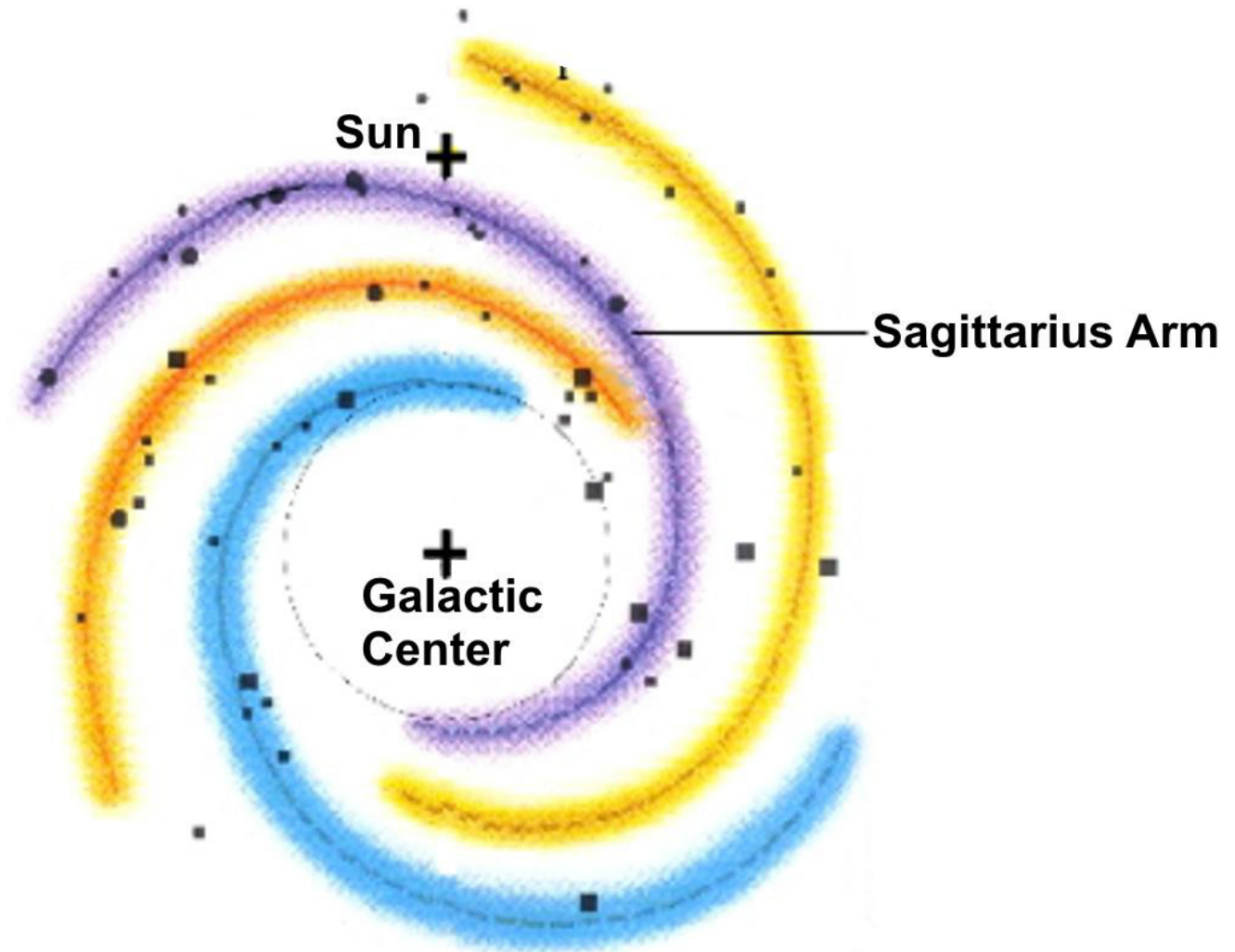


Credit: ESO/A. Fitzsimmons



How about some
galaxy activities
for anytime?

Let's build a model of the Milky Way!



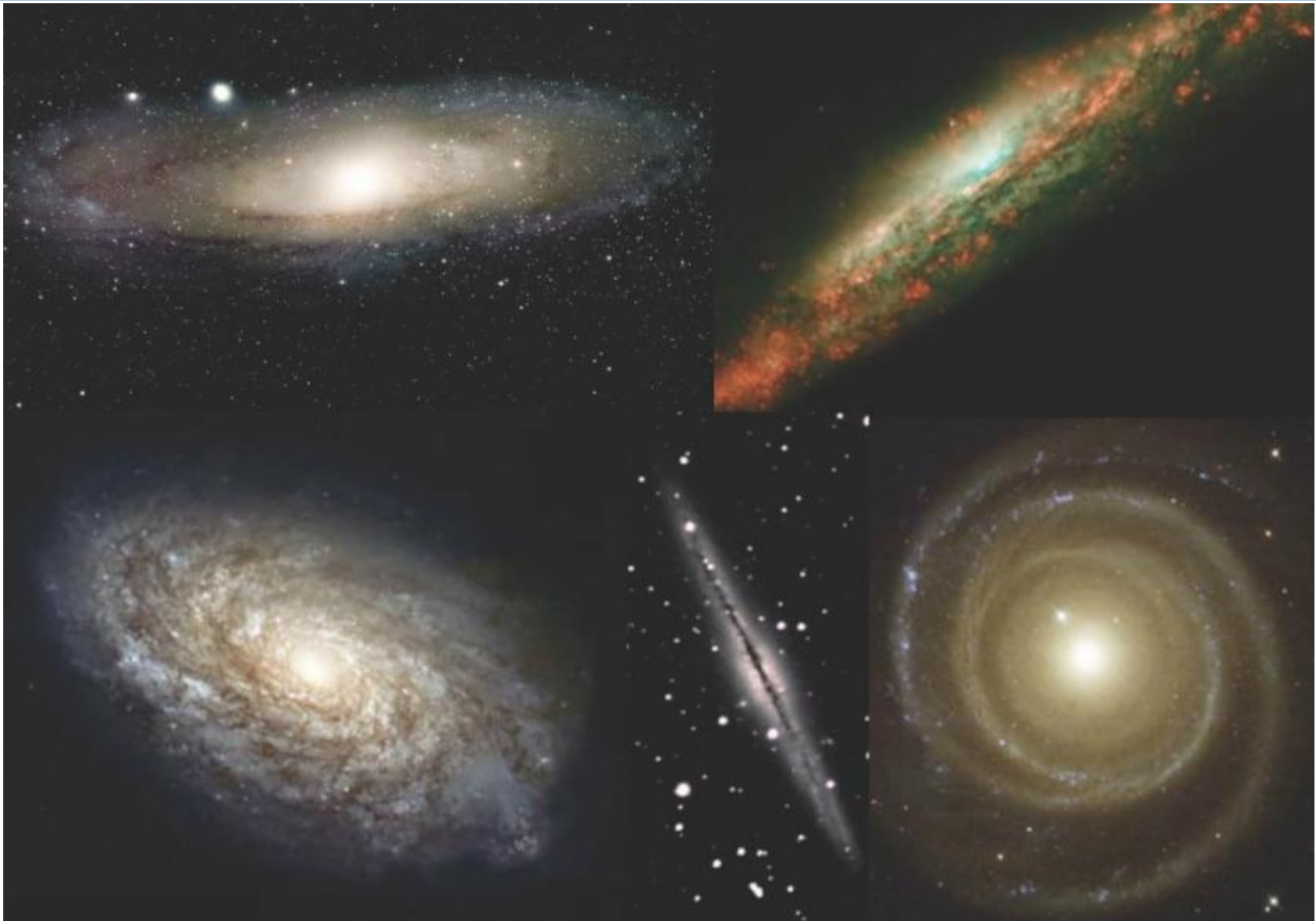
Let's build a model of the Milky Way!



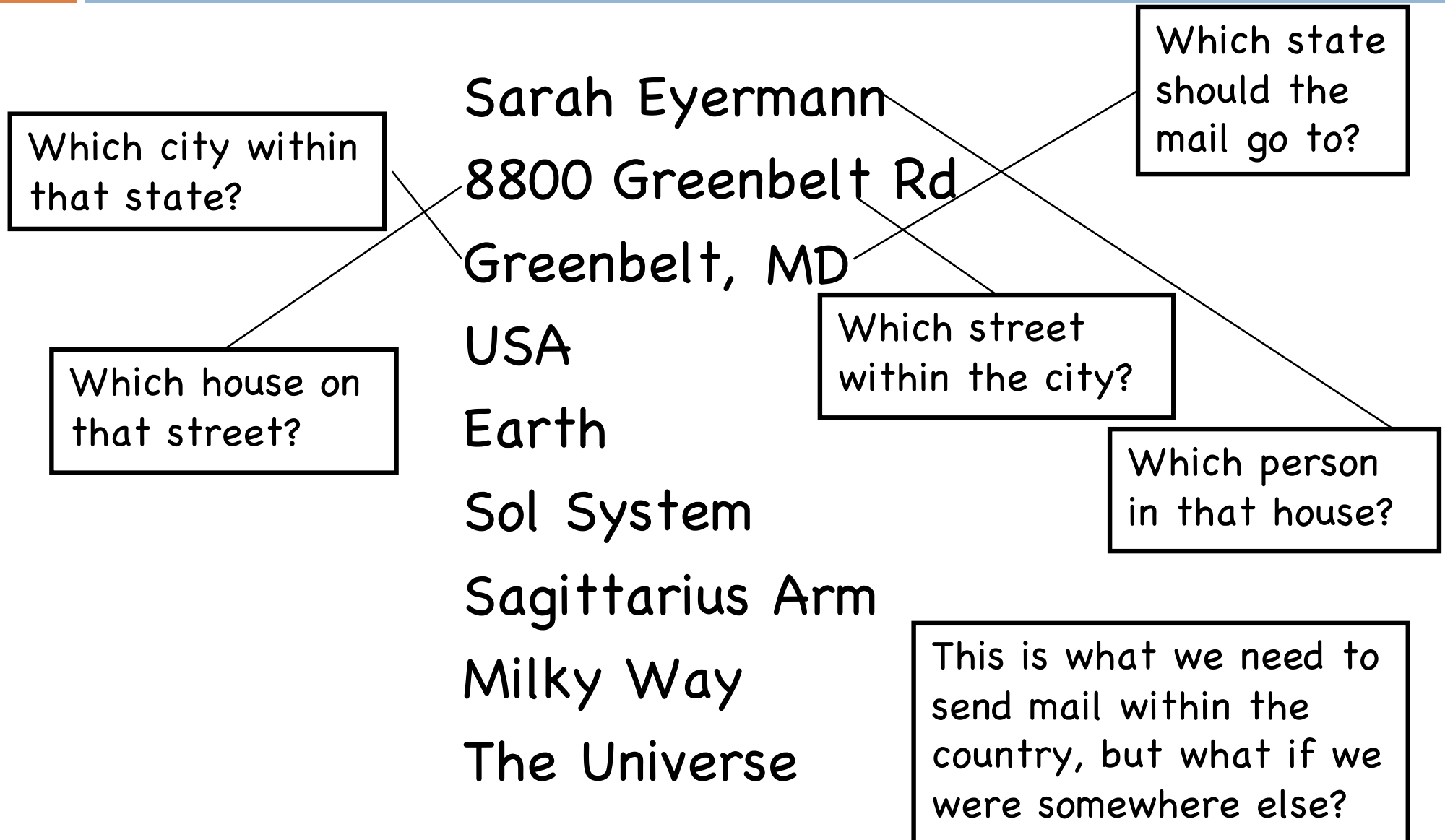
Let's build a model of the Milky Way!



Can you make your model look like these?



Let's write your address in the universe!





Need activities to
engage audiences in
space topics?

Afterschool Universe

Astronomy program for middle-school-aged children in out-of-school-time

Sessions cover what's in the universe, how it fits together, and how astronomers study it

Program materials, including activity videos and detailed activity instructions, are available through the Afterschool Universe website



NASA Family Science Night

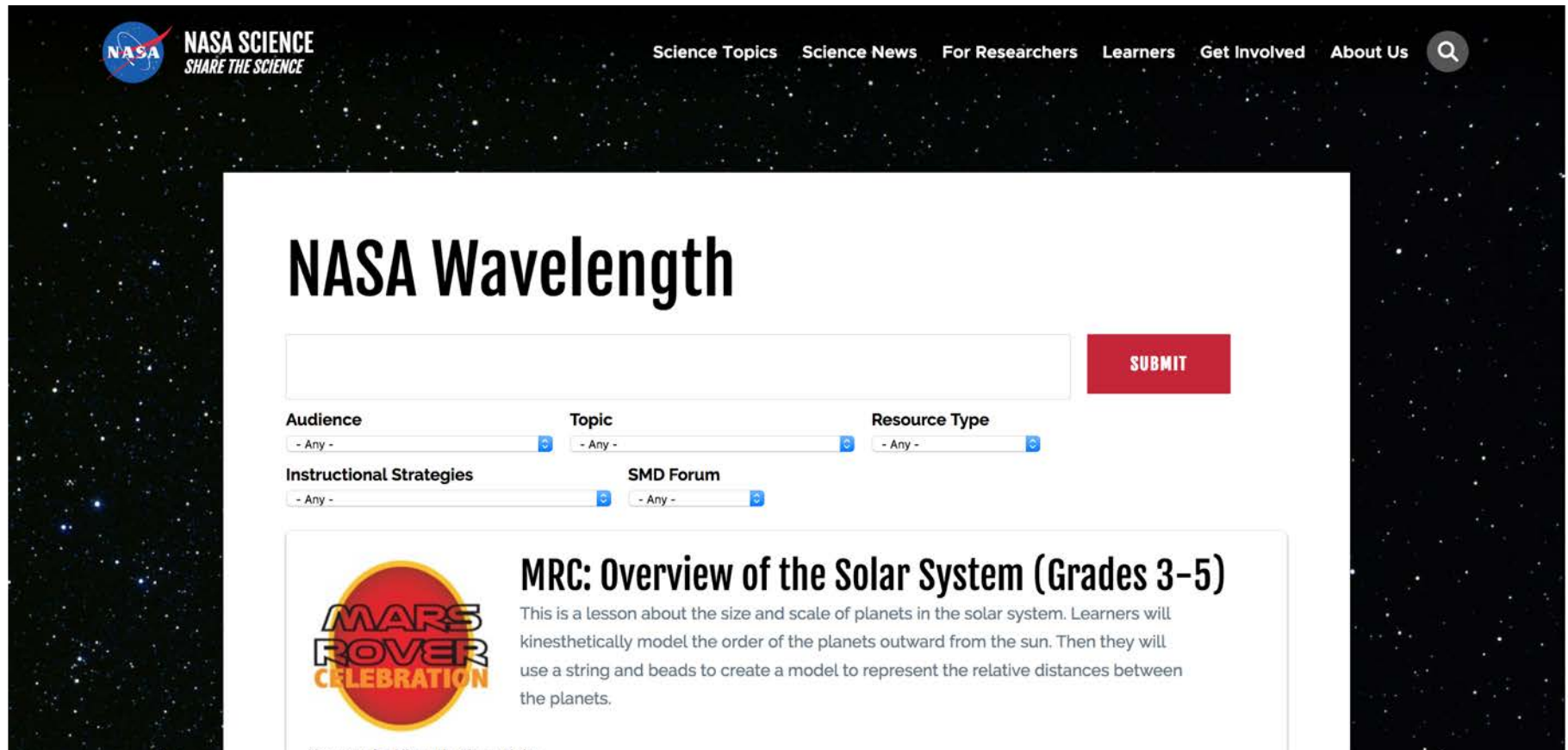
Designed for middle-school students and their families to engage in STEM activities together in an enjoyable, unintimidating environment

Session topics drawn from across NASA with connections to everyday life to make content relatable and relevant

Activities engage participants *as a family* to boost confidence and collaboration skills



NASA Wavelength



The screenshot displays the NASA Wavelength website interface. At the top left is the NASA logo with the text "NASA SCIENCE SHARE THE SCIENCE". To the right is a navigation menu with links for "Science Topics", "Science News", "For Researchers", "Learners", "Get Involved", and "About Us", along with a search icon. The main heading "NASA Wavelength" is prominently displayed. Below it is a search bar with a red "SUBMIT" button. Underneath the search bar are five filter categories, each with a dropdown menu set to "- Any -": "Audience", "Topic", "Resource Type", "Instructional Strategies", and "SMD Forum". A resource card is shown below the filters, featuring a "MARS ROVER CELEBRATION" logo and the title "MRC: Overview of the Solar System (Grades 3-5)". The card's description reads: "This is a lesson about the size and scale of planets in the solar system. Learners will kinesthetically model the order of the planets outward from the sun. Then they will use a string and beads to create a model to represent the relative distances between the planets."

<https://nasawavelength.org/>

Discussion

- How would you use these activities in your setting?
- How could the theme of galaxies fit into interpretation at your site?
- What support do you need?
How can we help each other?



Wrap-up

- Want the slides? Scan the QR code or visit:
<https://imagine.gsfc.nasa.gov/educators/presentations/>



- Contact us for more information about resources and opportunities for pilot-testing

