

ASTRONOMY WITH THE NATIONAL ASTRONOMY CONSORTIUM

TALKING POINTS

1. What are potential barriers to entering STEM careers?
2. How can programmes like NAC help students to overcome these barriers?
3. What are the advantages to mentorships?
4. Why is resilience an important quality for STEM careers?

TAKE ON THESE CHALLENGES!

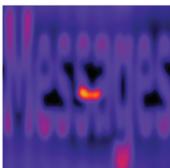
Ever wondered how far out the orbit of Jupiter would be if the Sun was the size of soccer ball? What if it was a ping pong ball? What if Earth was the size of the football? Use this simple app to do the maths and set the scale of your own model solar system: https://www.exploratorium.edu/ronh/solar_system/. Can you make one that would fit in your room? It's harder than you think when you see how huge the space is between the planets.

The universe is filled with light that our eyes cannot see: X-ray light, ultraviolet light, infrared and radio light, colours that are beyond both ends of the rainbow. Use this app to combine images captured in the visible and invisible to make your own multiwavelength pictures! <https://public.nrao.edu/color/>

NAC students at NRAO did research with data collected by radio observatories. The most powerful telescopes combine the data from many smaller dishes to simulate a single much larger dish. Use this app to build your own array of radio telescopes <https://public.nrao.edu/interferometry-explained/>

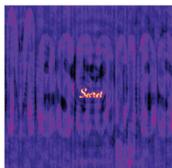
Experiment with the number and arrangement of dishes to discover the advantages of each and reveal unique details!

Previous Observed Sky



27 Small Y
10

Observed Sky



27 Large Y
10

NRAO's facilities are funded by the National Science Foundation, you might want to browse their Multimedia Gallery to fuel your curiosity:

https://www.nsf.gov/news/mmg/index.jsp?mmg_subjects=2&rt_page=y

ACTIVITIES YOU CAN DO AT HOME OR IN THE CLASSROOM

Astronomy is the study of space, including stars, planets and galaxies. Could it be the field for you?

Use the internet to research the following questions. If any of them uncover information that interests you, don't be afraid to research further and see where it leads you.

1. What is a celestial body?
2. What techniques do astronomers use to uncover information on the origin of the universe?
3. What is a Galactic Habitable Zone, and why might astronomers be interested in it?
4. What do we know – and what don't we know – about black holes?
5. The Sun is a star. What stage is it at in its life cycle? What will happen to it next, and when do astronomers think this change will occur?
6. The Earth orbits around the Sun. What does the Sun orbit around? How long does it take to complete an orbit?
7. What are supernovas, and how can astronomers study them?
8. Look up the electromagnetic spectrum. Why do astronomers often use telescopes that detect radio waves or microwaves, rather than visible light, to learn more about the universe?
9. Why might astronomers get upset if you call them astrologers?