



MUSEUM OF
NATURAL HISTORY
AND PLANETARIUM
Roger Williams Park

Cosmic Origins Spectrograph Full-Dome

A Pre-Visit Information Guide for Teachers

NGSS: HS-PS4-1-5, HS-ESS1-1-3

ABOUT THE CORMACK PLANETARIUM

- The ASH Warped Media fulldome projector system surrounds audiences with 360-degree digital visuals on the dome.
- In a planetarium, objects in the universe are projected, as they exist at any time in space.
- These celestial objects are projected onto a dome-shaped ceiling so it appears that one is looking up into the night sky.
- Our Star Projector is capable of displaying images of over 7,000 stars...many more than anyone can see without the aid of a telescope. Planets, comets, satellites and the Milky Way and Andromeda Galaxy can also be projected.

COSMIC ORIGINS SPECTROGRAPH

You actually know more about it than you may think! The electromagnetic (EM) spectrum is just a name that scientists give a bunch of types of radiation when they want to talk about them as a group. Radiation is energy that travels and spreads out as it goes-- visible light, that comes from a lamp in your house, and radio waves, that come from a radio station, are two types of electromagnetic radiation. Other examples of EM radiation are microwaves, infrared and ultraviolet light, X-rays and gamma-rays. Hotter, more energetic objects and events create higher energy radiation than cool objects. Only extremely hot objects or particles moving at very high velocities can create high-energy radiation like X-rays and gamma-rays.

SUGGESTED CONCEPTS TO REVIEW INCLUDE

Radio	Visible	Universe
Microwaves	Ultraviolet	Gamma Rays
Infrared	X-Rays	Matter

ACTIVITIES

Teachers are encouraged to conduct pre-visit and post-visit classroom discussions and activities with their classes to make the most of their experience.

Build your own spectroscope, <https://solar-center.stanford.edu/activities/cots.html>

Wavelength and Energy, <https://www.nasa.gov/stem-content/wavelength-and-energy/>