



# Strange and Distant Worlds

## A Pre-Visit Information Guide for Teachers

Meets the following RI GSE requirements: ESS2(5-6)-9, ESS2(7-8)-8 ESS3(7-8)-9, ESS3(9-11)-5

This may be the first visit to the Planetarium for many of your students. We have found that both cognitive and affective learning can be increased when teachers use structured activities before and/or after the visit to create a context for the experience and link with the classroom instruction. In this guide we have provided some interesting facts about the Cormack Planetarium and include background information about the astronomy content that will be presented in "**Strange and Distant Worlds.**" We encourage teachers to conduct pre-visit and post-visit classroom discussion and activities with their classes to make the most of their field trip experience.

### ABOUT THE CORMACK PLANETARIUM:

- 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.

### STRANGE AND DISTANT WORLDS

Are we alone in the Universe? In their search for the answer, astronomers have made astonishing discoveries of strange and distant planets orbiting far-flung stars. These "exoplanets", short for extrasolar planets, are as varied as they are plentiful. From raging hot supergiant gas planets, to small rocky planets, covered in fluorescent minerals, the variety and number of planets that are being found around distant stars is growing at an amazing rate.

But what about Earth-like planets? Finding these planets is not an easy task. Far too small and distant to see with the unaided eye, we must rely on technology to find them for us. With advancements in telescope technology, such as the Kepler Space Telescope, we are now able to detect these distant worlds. And while we may never know in our lifetime whether these distant Earth-like worlds actually support life, there may someday exist the technology to not only detect possible life there, but perhaps also to communicate.

Join us for a journey to these strange and distant worlds, as you uncover the infinite variety of stars, planets and more which exist at every corner of the Universe.

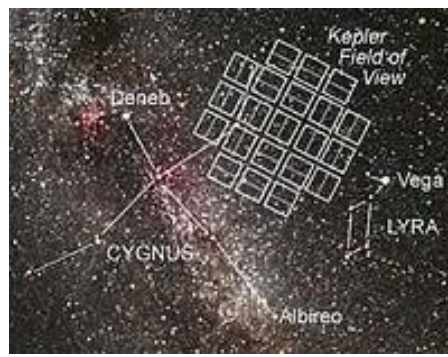
### SUGGESTED CONCEPTS TO REVIEW INCLUDE:

ASTRONOMY	EXOPLANETS	PLANETS
BINARY STAR SYSTEM	FUSION	SPECTRUM
CONSTELLATIONS	HABITABLE ZONE	STAR CLUSTER
ELEMENTS	NEUTRON STAR	TELESCOPE

## HELPFUL INFORMATION: KEPLER SPACE TELESCOPE

The Kepler Mission, NASA Discovery mission #10, is specifically designed to survey a portion of our region of the Milky Way galaxy to discover dozens of Earth-size planets in or near the habitable zone and determine how many of the billions of stars in our galaxy have such planets.

Results from this mission will allow us to place our solar system within the continuum of planetary systems in the Galaxy. The Kepler Space Telescope is currently observing a portion of the sky within the constellation Cygnus in order to find these Earth-size planets.



## 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. Have the students observe the sky over the course of several nights to notice what is visible to them. Do they see any star clusters? How about binary stars? Have the students pick a star and imagine a planet exists around it. Each student should draw a picture of their new "planet" and describe what it is like.

## WEBSITES

Kepler Mission Page:

<http://kepler.nasa.gov/>

Print out a Sky Wheel:

<https://sites.google.com/a/berkeley.edu/uncleal-urls/uncle-als-starwheels>

For more links visit our website at:

[www.providenceri.com/museum](http://www.providenceri.com/museum)