



# Spirits from the Sky: Thunder on the Land

## A Pre-Visit Information Guide for Teachers

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

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 ***"Spirits from the Sky: Thunder on the Land."*** 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.

### SPIRITS FROM THE SKY

For thousands of years, cultures have looked to the sky and pondered their place in the Universe. They told countless stories about the sky and created myths to explain its mysteries. Throughout the world, each culture used the sky to help them throughout their lives. From the ancient Greeks and Romans, to the Mayan people of Central America, each culture created a rich tapestry of tales designed to help their people understand the cosmos. One group of Native American stargazers was located in the area of the United States that we know now as Nebraska. It is the tale of these people, the Pawnee, that is told in the planetarium show, "Spirits from the Sky: Thunder on the Land."

The Pawnee tribe is divided into four bands, each connected by a common belief that they are divinely intertwined with the "sky beings" that inhabit the sky. The Skidi Band of the Pawnee began to observe the appearance of planets, stars, constellations, and other celestial occurrences that were found to follow a predictable seasonal sequence. They would use this information to tell time, recognize directions, and develop a seasonal calendar based on the appearance of particular constellations, which would help them in their yearly hunting and planting seasons.

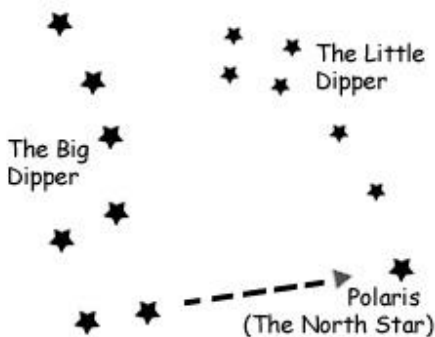
"Spirits from the Sky" was developed with the assistance of Pawnee Elders, giving your class a glimpse into a cultural tradition that was nearly lost. The story is told from the perspective of a Pawnee grandfather who is teaching his grandchildren the legends of their people.

## **SUGGESTED CONCEPTS TO REVIEW INCLUDE:**

CIRCUMPOLAR	MOON	POLARIS
CONJUNCTION (PLANETS)	ORBITS	SEASONS
CONSTELLATIONS	PAWNEE CULTURE	SOLAR ECLIPSE
CULTURE	PLANETS	STAR CLUSTERS

## **HELPFUL INFORMATION: FINDING THE NORTH STAR**

As you observe the night sky over time, you will notice that the stars in the North don't appear to move across the sky with the other stars. Instead, they move in circles around Polaris, the North Star. If you have trouble finding the North Star, use this diagram to help. In the Pawnee culture, the North Star is called the "Chief Star." It symbolizes strength and guidance to the Pawnee people.



**Find the Big Dipper. Locate the two stars at the front of the bowl. Draw an imaginary line through these stars. The star at the end of that line is Polaris, the North Star. It is found at the end of the handle of the Little Dipper, and is located directly above the Earth's North Pole.**

## **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. Make a Pawnee Constellation Starfinder. Follow the link listed below for the templates. Students should also compare the Pawnee constellations to the constellation figures they are already familiar with from their Greek and Roman names.

## **WEBSITES**

Space.com: See what the night sky looks like tonight  
<http://www.space.com>

For more links visit our website at:  
[www.providenceri.com/museum](http://www.providenceri.com/museum)