

Star Talk

Learning objectives for each student

- 1 Name three stars in the current sky.
- 2 Name the planets found in the sky tonight, if any.
- 3 Name and describe at least one constellation.

Pre-visit activities

- 1 Ask students to list the reasons why the sky might change during the year. Have them think about the Earth and its orbit around the Sun. Does it make sense, given that we revolve around the Sun, that the sky would stay the same?
- 2 As a class or in small groups, have students list the problems that astronomers might have with light pollution, and what some of the causes of light pollution might be. Further, have them discuss how we can control light pollution.
- 3 Ask students to discuss what other factors might affect their ability to see the sky clearly.

Vocabulary

Some or all of the following words may be used in "Star Talk."

asteroid

gravity

star

horizon

atmosphere

rotation

orbit

supernova

black hole

hydrogen

latitude

Program summary

Planetarium visitors will listen to a live discussion about the current

night sky. Presentation style and content varies with the seasons and current hot topics in the night sky. They will be introduced to the current night sky and any planets that might be visible.

I Our understanding of the night sky has changed over time

A Ancient people often used the sky to navigate, and to tell when the season would change.

B Today light pollution limits how many stars that we can see at night.

C It can be difficult for those living in the city to find dark skies. Local astronomy clubs may advertise locations and times for such viewing.

II The Earth is our home in the Universe and the point from which we view the heavens. It is easy to understand why ancient people thought we were at the center.

A Stars, like our Sun, are large, hot, glowing balls of gas. Our star looks so big and bright because it is very close to us.

1 Today we understand that there are many other planets orbiting other stars. This is really exciting as it means that the probability for life out there may be greater than once thought.

B Planets have unique physical characteristics.

1 Venus has a thick atmosphere that traps heat close to the planet. The planet's day and night cycle is equal to 243 Earth days. What a long school day you would have!!

2 Mars has a very thin atmosphere, no evidence of life, yet, and temperatures that range from 72 degrees F to minus 189 degrees F. Its year is almost twice as long, but its day is almost the same as on Earth.

3 Jupiter is made up of mostly hydrogen and helium gases, with incredible temperature and pressure differences. Huge storms exist there with lightning bolts that could destroy a large city on Earth. Its "Red Spot" is a hurricane the size of three of our Earths!

4 Uranus is four times the diameter of the Earth and orbits the Sun at a distance of almost two billion miles. Little shows of its cloud structure.

5 Pluto is three and one half billion miles from the Sun. It would take a spacecraft more than a decade to reach Pluto.

6 Saturn has a ring system made of bits of rocks and ice that may have formed late in its history.

7 Earth is the only planet we know of that has life. It rotates at about one thousand miles per hour at the equator, revolves around the

Sun at 68,000 miles per our, and travels through the galaxy at 138 miles per second!

III Our Solar System is Part of a the Milky Way Galaxy, which consists of billions of stars forming a huge, rotating pinwheel.

Post-visit activities

- 1 "Star Talk" tells of the mythologies of constellations of the season. Have your students read about other star myths, or read to them about the Greeks and Romans--who named so many of our popular constellations. Be sure they understand that other, much older cultures also named stars and constellations, and that the Greeks and Romans often borrowed from these to make their own stories. Have them create their own modern myths or change an ancient myth to make it sound like it could take place today.
- 2 If students made modern constellations, what objects or people would be important enough to be included into a constellation and why? Have students survey other classes for ideas or hold a debate.