

Print Name \_\_\_\_\_ *Teacher Edition* \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

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## CA1 4.15: Lessons in a Planetarium Activity

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### **Concept Development**

**Purpose:** To present a list of demonstrations and observations you can do in your small planetarium or you can ask for in a large planetarium. Of course, you can observe all of these things in the real sky as well!

The list shows many kinds of specific observations of things you should see when you are in a planetarium if you are not seeing a “canned” show.

You can also use Stellarium to virtually observe everything in this list. Just use the program’s “Find” function to locate the constellations and other objects quickly.

### **Observations (No Deep Sky objects included)**

Constellations, Stars and Asterisms

Circumpolar (visible all year)

Ursa Major (Big Dipper)

Ursa Minor (Little Dipper)

Polaris

Dubhe, Merak, Mizar, Alcor

Cassiopeia

Fall

Cygnus, Lyra, Aquila

Pegasus, Hercules

Sagittarius, Scorpius

Deneb, Vega, Altair, Antares

Winter

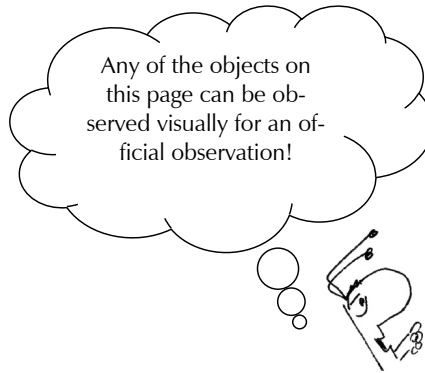
Orion, Gemini, Taurus, Perseus

Betelgeuse, Rigel, Capella, Castor, Pollux, Procyon, Sirius, Aldebaran

Spring

Leo, Libra, Bootes, Hercules, Corona Borealis, Gemini

Regulus, Arcturus, Spica, Denebola



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“Landmarks in the sky”

- Summer Triangle
- Pointer Stars on the Big Dipper
- Arc to Arcturus
- Spike to Spica
- Winter Football

#### **Planetarium Demonstrations**

Coordinate Systems

- Zenith and Nadir and meridian
- Altitude and Azimuth angles
- Right Ascension and Declination
- Ecliptic Coordinates
- Galactic coordinates

The Effects of Latitude

- Position of the North Star
- Motion of stars through the heavens
- Definition of the arctic circle/polar days and nights

The Annual Motion of the Sun

- Definition of the zodiac
- Daily vs. annual motion
- The analemma

The Shifting Position of the Sun at Sunrise and Sunset

The Moon’s Phases

Eclipses

- Solar and Lunar
- Partial and Total

Inferior/Superior Planets

- Maximum Elongation
- Inferior/Superior Conjunction

Retrograde Motion of Superior Planets

- The Retrograde Loop

The Phases of Venus

Meteor Showers

- Determining a radiant

Precession

*The lesson planning guide gives a description of how to demonstrate each of the things listed here.*