# SCIENCE

Monday 2.27.17

**Lets make sure we finished our lab from last week.**

The revolution of the Earth around the Sun is counterclockwise, just like the rotation.

How long does it take for Earth for make one revolution around the Sun?

Explain: How is the **revolution** of Earth different from the **rotation** of Earth?

Note: as we discussed the other day, Earth is tilted at 23.5 degrees relative to the plane of its orbit.

As we saw at the planetarium,

There is a star in the night sky called Polaris, or the **North Star.** It is positioned almost directly over Earth's North pole. Earth's North Pole points toward the north star - during all seasons, day, and night.  That's why the North Star has been a navigation aid to seafarers and explorers in the Northern Hemisphere for centuries.

In our Earth/Sun system, we need a North Star. You will have to visualize the North Star through this wall and way, way off in the distance. The North Pole of our model Earth will always point its axis at the North Star as it revolves around our model sun.

We can use this small model star to remind us of approximately where the North Star is in the sky.

Lets demonstrate Earth's orbit again...keeping in mind the North Star this time

In your notebook, define the following terms we have been talking about (in your own words):

- North Star
- Orbit
- Revolution
- Rotation
- Axis

In a moment, you'll get your 3x5 card back from the other day.

Think about what you have learned from the past couple of days and revise your quick write in green pen. Don't cross out or scratch out your original writing!

We'll look at a few in a moment.

Now, lets glue your 3x5 cards into your notebok.

# SCIENCE

## Tuesday 2.28.17

Today we have a short period!

Today you will be working on your Investigation 1-2 I-Check.

# SCIENCE

## Wednesday 3.1.17

# Asteroids, comets, and other bodies in space

## Now that we know all about planets....

# What is an asteroid?

a small rocky body orbiting the sun. Large numbers of these, ranging in size from nearly 600 miles (1,000 km) across (Ceres) to dust particles, are found (as the*asteroid belt* ) especially between the orbits of Mars and Jupiter, though some have more eccentric orbits, and a few pass close to the earth or enter the atmosphere as meteors.

## What is a Comet?

a celestial object consisting of a nucleus of ice and dust and, when near the sun, a “tail” of gas and dust particles pointing away from the sun.

## What is a Meteor?

A meteor is the flash of light that we see in the night sky when a small chunk of interplanetary debris burns up as it passes through our atmosphere. "Meteor" refers to the flash of light caused by the debris, not the debris itself. The debris is called a meteoroid.

And how are they different?

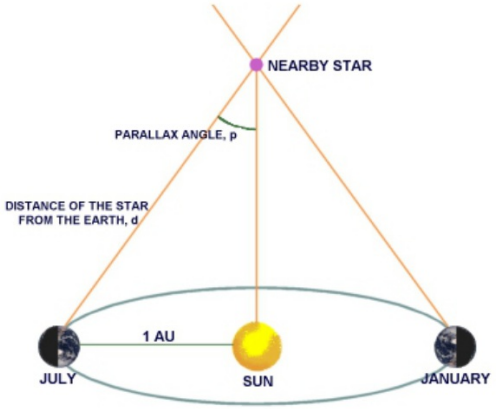
# SCIENCE

## Thursday 3.2.17


Characteristics
of Stars

# Measuring Distances to Stars

- Parallax
  - used to measure distances to nearby stars
  - the apparent change in position of an object when you look at it from different places
  - less the star appears to move, the farther away it is



# Classifying Stars

- all stars are huge spheres of glowing gas
- made up mostly of hydrogen
- make energy by nuclear fusion (makes the stars shine brightly)
- classified by three characteristics:
    - size
    - temperature
    - brightness

# Sizes of Stars

- Supergiant
  - example: Betelgeuse
- Giant
- Medium-sized
  - example: Sun
- White Dwarf
  - size of Earth
- Neutron
  - 20 kilometers in diameter

# Color & Temperature Chart

| Star Color | Surface Temperature | Examples |
|---|---|---|
| Blue | 11,000°-50,000°C | Regulus |
| Blue-white | 7,500°-11,000°C | Rigel, Deneb, Sirius |
| White | 6,000°-7,500°C | Canopus, Procyon, |
| Yellow | 5,000°-6,000°C | Sun, Alpha Centauri |
| Orange-Red | 3,500°-5,000°C | Aldebaran, Arcturus |
| Red | 2,000°-3,500°C | Betelgeuse, Proxima Centauri |

# Brightness

- brightness depends upon its size and temperature
- how bright a star looks from Earth depends on how far the star is from Earth & how bright the star actually is
- two ways to describe the brightness of a star:
  - apparent magnitude
    - is the brightness of a star as seen from Earth
    - the closer the star, the brighter it appears
  - absolute magnitude
    - the brightness of a star would have if it were at a standard distance from Earth
    - scientist study globular clusters to find absolute magnitude


Time to
Review

the brightness of a star as seen from the Earth

A. blue giant
B. red dwarfs
C. apparent magnitude
D. absolute magnitude

the sun is this type of star

A. main sequence star
B. black dwarf
C. white dwarf
D. neutron star

Astronomers classify stars according to

A. size
B. temperature
C. brightness
D. all of these

Which of the following DOES NOT determine a star's magnitude?

A. distance from the Earth
B. position in the sky
C. size
D. temperature

# SCIENCE

Friday 3.3.17

**Its been 6 weeks since you have had a random notebook check, which means that your notebooks will be due soon!**

**Take this class period to update your notebook, make sure any information missing due to absences is made up, and that your table of contents is up to date! I will be calling you up one by one to check!**