



Hoover-Price Planetarium

Program Synopsis

Astronomy for 5th-8th Grades

SOLAR SYSTEM

Our Sun:

- Closest star to earth it is 93 million miles away
- Light is so bright during the day that we cannot see other stars
- is an ongoing thermonuclear reaction

Nine planets comprise our solar system:

- Mercury – rotates slowly, one day on Mercury is equal to 59 Earth days. Mercury is covered with craters made by meteors crashing into it.
- Venus – called sister planet to Earth because they are close in size. Surface similar to Earth – mountains, valleys, plains, continents, but atmosphere is poisonous and very hot. This planet rotates in the opposite direction.
- Earth – looks mostly blue from space because $\frac{3}{4}$ of surface is water. White ice-capped north and south poles. Our planet is tilted on its axis and this is why we have seasons.
- Mars – is a rocky planet smaller and colder than Earth. Appears to be red because of a large amount of iron in the soil.
- Jupiter – one of four gas planets, covered with three thick layers of clouds. No solid surface on planet. Rotates so quickly it appears to have a flattened center and longer at the poles. It has white spots that have been identified as storms and a huge Red Spot that is a storm that has been raging more than 300 years.
- Saturn – is composed of gas and has no solid surface. Two wind systems, one from the east, the other from the west. It has a huge ring system composed of rock and ice particles.
- Uranus is composed of gas, it appears bluish green and has eleven rings and 27 moons. The inclination is 90 degrees to the path of its orbit.
- Neptune – a gas planet that appears blue because of methane gas in its atmosphere. It has several dark spots believed to be storms.
- Pluto – ninth planet is the smallest and coolest planet. It has an elliptical orbit that makes it the 8th planet for 20 years of its 248 yr. revolution. Surface gases are frozen into an unusual snow the consistency of very soft pudding. The surface appears red near the equator and bluer at the poles

The Stars:

- Ursa Major (Big Dipper) does not change its shape as the earth rotates
- At our latitude of 41° Ursa Major, Ursa Minor, Draco, and Cassiopeia are called circumpolar constellations because they revolve around the North Star.
- At the North Pole where all stars are circumpolar the stars appear to circle counterclockwise around Polaris, which is overhead at zenith.
- The band of faint starlight, which passes through the sky, is the rim of our galaxy, the Milky Way. Our Milky Way galaxy is a large group of stars; our Sun is but one of these stars. The Milky Way is but one of trillions of galaxies.
- Life of a star – nebula, white dwarf, super nova.

Asteroids & Comets

- Comets originate from material surrounding the Solar System, primarily the Oort Cloud. Mostly comprised of methane, ammonia, ice and stone.
- Asteroids – small solid objects that also orbit the sun. They are made of iron, nickel, stone or any combination of these. The largest known asteroid is Ceres and measures 500 miles in diameter. Most are smaller pieces that have smashed against each other and broken apart.