

HEAVENLY NEWS

"Star Clusters"

By Gene Grahek, Lead Docent, Community Observatory

What are star clusters? They are groups of stars held together by a mutual gravitational attraction and are some of the most striking objects viewed in the night sky. They range from objects so large they can be viewed with the naked eye, to objects so small they can only be viewed by the Hubble Space Telescope. Star clusters consist of basically two types: open clusters and globular clusters.

Open clusters tend to be relatively young and are viewed as a loose cluster of stars. They originate from large cosmic gas and dust clouds (star-forming regions), in the spiral arms of the galaxy. Star formation continues to take place at this time so new star clusters can be observed. The number of stars can range from less than 50 to several thousand. Our Milky Way Galaxy holds about 1,100 known open clusters but this is thought to be only a small number of the total population located in the galaxy. Although held together by their mutual gravity when young, open clusters continue to move apart from each other due to the gravitational influence of more distant stars. It is thought that most stars viewed in the sky were once part of these clusters.

Probably the most well known open cluster in the Milky Way Galaxy is the Pleiades. Also known as the Seven Sisters, it can easily be viewed with the naked eye. It contains about 500 mostly faint stars and has been observed since prehistoric times. Greek mythology named the Seven Sisters after the seven daughters of Atlas. The Japanese name is Subaru which is now used by the car maker. Although the Pleiades are not viewable at the observatory now, we can see star-forming regions in the Pillars of Creation (M16). This object was made famous by the picture taken with the Hubble Space Telescope. It is currently viewed at the observatory with the help of our camera mounted telescope.

Globular clusters are very old stars thought to be born during our galaxy's formation. They consist of several thousand to several millions stars, tending to be uniform and spherical in appearance. The Milky Way has about 200 globular clusters located in a halo around the center of our galaxy. The Great Globular Cluster in Hercules (M13) is now viewable at the observatory and is considered to be the showpiece globular cluster in the Northern Hemisphere.

Open and globular clusters can be found throughout the universe. They continue to be studied as they are hoped to be clues to the origin of the universe. The Hubble Space Telescope has been studying clusters and has recently identified 11,000 globular clusters in the Virgo cluster of galaxies. The telescope is currently in the process of being repaired and one of its main missions will be to determine the age of globular clusters.

Star clusters are great objects to view in the evening sky. Unlike some objects that require your imagination to envision, they are what they claim to be. When you look through the telescope you will see an explosion of stars sparkling like diamonds. Fall and winter are excellent times to view star clusters. Just be sure to dress warmly!

To learn more about astronomy, join us at the Community Observatory, located behind the El Dorado Center, Folsom Lake College. Admission is free and open to the public (weather permitting) Friday, Saturday and Sunday evenings from 7:30 PM – 9:30PM. You can find driving directions and more information about the observatory at www.communityobservatory.com