Eye on the Sky – January 2010

By Nancy Alima Ali

As you ring in the New Year consider making a resolution to commit random acts of observing throughout 2010. You don't need a fancy telescope to observe the stars, just your eyes and clear skies. Look up occasionally and get to know your universe.

Sirius Matters

The brightest star in the night sky is Sirius, shining at a magnitude of -1.47. Sirius is bright because it is very hot and relatively close to the Earth. Appropriately, in Hawaiian this star is called *ʻaʻā*, which means "fire". Sirius is important in Polynesian celestial navigation since it passes through the zenith in Hawaii.

To find Sirius, follow the three stars in Orion's belt in a line to the southeast. Sometimes called the Dog Star, Sirius marks the nose of Orion's hunting dog in the constellation Canis Major. To visualize the dog, look for two fainter stars that form a triangle with Sirius and mark the dog's ears, then follow a line of stars from Sirius that outline the dog's long back and tail. Two more nearby stars mark the dog's front and back legs.

The ancient Greeks noticed that Sirius rose just before dawn during the hottest part of the year, which led to the phrase "dog days of summer." The ancient Egyptians observed that the heliacal (pre-dawn) rising of Sirius marked the annual flooding of the Nile River. This was such an important event that they made Sirius the basis of their calendar.

Mars in Line

On January 29, Mars reaches opposition with Earth, making it a great time to observe the red planet. In astronomy, opposition refers to the moment when a planet farther from the sun than Earth appears opposite the sun in the sky. In this case, Mars, the Earth and the sun form a line in space, with the Earth at the center. At opposition, Mars is at its brightest and is visible throughout the night. At apparent magnitude -1.27, Mars appears nearly as bright as Sirius. On the night of January 29-30, look for the reddish-orange Mars near the full moon. The light from the full moon will dim Mars somewhat; so keep your eye on the planet over the next few nights. As the moon pulls away from Mars, there will be less moonlight to interfere with the planet's brightness.

So Close and Yet So Far Away

On January 2, the Earth reached perihelion, the closest point in its orbit around the sun. The Earth's orbit is not perfectly circular but is actually an ellipse, which means that its distance from the sun varies throughout the year. At perihelion, the Earth is

approximately 91.4 million miles from the sun, whereas at aphelion—the farthest point in the Earth's orbit—the Earth is 94.5 million miles from the sun. In 2010, the Earth's reaches aphelion on July 6. It may seem strange that the Earth is closest to the sun during winter and farthest away in summer, but keep in mind that the seasons are determined by the Earth's axis tilt, not it's distance from the sun.

GOT QUESTIONS OR COMMENTS?

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