

## Eye on the Sky – December 2009

By Nancy Alima Ali

### Once in a Blue Moon

This December is bookended by two full moons, the first occurring on Tuesday, December 1, and the second on Thursday, December 31. The second full moon in a calendar month is commonly known as a “blue moon”. This name may have originated from the rare occasions when atmospheric conditions made the full moon appear bluish. In the early 20<sup>th</sup> century, the *Maine Farmers’ Almanac* defined a blue moon as the third full moon in an astronomical season that had four full moons in total. However, a 1943 *Sky and Telescope* article mistakenly interpreted the *Farmers’ Almanac* information, resulting in our current redefinition of “blue moon”. In any case, two full moons in a calendar month occur infrequently—about once every 2.5 years.

### Constellation Spotlight: Orion

If you are just beginning to familiarize yourself with the sky, the constellation Orion is a great place to start. Easily identifiable by the three stars in a line that make up his belt, the Greek hunter appears above the eastern horizon after sunset and can be seen travelling westward throughout the night.

Look also for the bright red star Betelgeuse that represents Orion’s right shoulder. Betelgeuse is a red supergiant star, so large that our solar system from the sun out to nearly Jupiter would fit inside its diameter. The word “Betelgeuse” is another etymological mistake, this time a result of a translation error. The original Arabic name for the star “yad-al-jawza’a” meant “hand of Orion”. A Spanish translator left out one dot in the first letter, changing the name to “bad-al-jawza’a” meaning “armpit of Orion”. This was further transformed into “bait-al-jawza” (house of Orion), which in Latin became Betelgeuse.

At Orion’s left foot is the bluish star Rigel (in Arabic “al-rigl”, meaning “the foot”). Rigel is a very hot star that shines about 40,000 times stronger than our own sun. Although we see Rigel as one star, it is actually part of a multiple star system made up of three separate stars.

In Greek mythology, Orion was a hunter who was stung by the scorpion (the constellation Scorpius) after insulting the goddess Diana. For obvious reasons, Orion wants to stay as far away from the scorpion as possible, which explains why you will never see him in the sky at the same time as Scorpius. The ancient Egyptians saw their god Osiris in the same group of stars. In Hawaii, this constellation is known as “Ka Hei-hei o na Keiki”, which refers to a children’s string game similar to Cat’s Cradle. The ancient Maya focused on Orion’s lower half—the

triangle of stars made up of Rigel, Alnitak (the easternmost star in Orion's belt) and Saiph (Orion's right foot star). These three stars represent the stones of the hearth out of which the Maya believed the existing universe was created. The smoke from the hearth can be seen in the sky as the Great Orion Nebula. Science and mythology coincide here as the gas clouds of Great Orion Nebula are forming young stars and infant solar systems—quite literally a place of creation.

### **In Other News**

Winter officially begins with the solstice on Monday, December 21, at 7:47 a.m.

The Geminids are the last meteor shower of 2009. Although meteors from this shower may be visible from December 7-17, the peak will be the night of December 13-14. Fortunately, the moon will be a waning crescent that night, which means there will be little natural light interference.

At long last, the planet Mars reappears in the evening sky, rising above the eastern horizon by 11:00 p.m. early in the month. By the end of December, Mars will be visible by 9:00 p.m.

### **GOT QUESTIONS OR COMMENTS?**

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