

Eye on the Sky: September 2009

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AUTUMNAL EQUINOX

For one day this month, equality will reign. On September 22, every place on Earth will receive equal amounts of day and night. Unless you are sitting on the equator, this only happens on two days of the year—the September and March equinoxes. In fact, the word “equinox” comes from the Latin words meaning “equal night”, short for “daylight equals nighttime”. Many cultures around the world have celebrated the equinox as a marker of the change of seasons.

To understand what the equinox really is, imagine drawing a line from the North Pole to the South Pole. This is the Earth’s axis, around which the Earth rotates once every 24 hours, causing day and night. But the Earth’s axis is not straight up and down in space. It is actually tilted 23.5° towards the star Polaris. As the Earth orbits the sun the position of Earth’s axis changes relative to the sun. When the Earth’s axis is leaning towards the sun, it is summer in the northern hemisphere; a time of longer hours of daylight and more direct rays from the sun. When the Earth’s axis is leaning away from the sun, it is winter in the northern hemisphere; a time of shorter hours of daylight and less direct rays from the sun. The opposite is true of the southern hemisphere.

At the equinoxes, the Earth’s axis is leaning neither towards nor away from the sun. This means that both the northern and the southern hemispheres are receiving the same amount of sunlight, resulting in 12 hours of daylight and 12 hours of darkness. Although many people think the equinoxes and solstices take place all day long on the 21st of the month, keep in mind that the Earth is constantly moving in its orbit around the sun. This means that the true equinox is only one moment in time. In 2009, the autumnal equinox in Hawaii takes place on September 22 at 11:18 a.m.

CONSTELLATION SPOTLIGHT

This month’s spotlight actually includes three different constellations that make up the summer triangle: Cygnus, Lyra and Aquila. Despite its name, the Summer Triangle continues to be visible high in the evening sky throughout September. Look for three bright stars that make up the triangle. The star Altair in the constellation Aquila gives us the southernmost point in the triangle. The star Deneb can be found in the constellation Cygnus. The third star, Vega, is part of Lyra.

The Summer Triangle is a good celestial object to look for because it can be seen even in the midst of bright lights of Honolulu. In fact, sometimes it can be even easier to identify the triangle shape when the fainter stars are washed out. But if you are lucky enough to be stargazing in a very dark place, perhaps you will see the Milky Way flowing through the center of the triangle.

PLANETARY HIGHLIGHTS

Jupiter

Jupiter continues to dominate the night, visible in the southeast after sunset then moving towards to southwest as the night progresses. Look for the near-full moon close to Jupiter on the nights of September 1 and 2.

Venus

Insomniacs and early risers can take a gander at Venus, the brightest object in the sky after the moon and the sun. Venus blazes in the sky before dawn, rising in the northeast just before 4:00 a.m. and visible until sunrise. In the early morning of September 20, look for Venus in close conjunction with the bright star Regulus, which is part of the constellation Leo the Lion.

Mars

Mars rises at 1:00 a.m. in mid-September about 3 hours ahead of Venus. It shines slightly brighter than 1st magnitude and can be found in the constellation Gemini.

GOT QUESTIONS OR COMMENTS?

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