

Eye on the Sky - July 2009

SPECIAL CELESTIAL EVENTS

Zenith Passage of the Sun

Kaneohe & Honolulu: July 15, 12:37 p.m.

North Shore: July 13, 12:38:pm

Many people believe that the sun is directly overhead every day at noon, but this is not the case. In fact, for most of the world the sun is never directly overhead. Only places located between the Tropic of Cancer and the Tropic of Capricorn experience the sun at the zenith (top of the sky) on one or two days a year. Since Hawaii is within the tropics, we are fortunate to have two days a year when the sun passes through the zenith. More recently nicknamed "Lahaina Noon," the original Hawaiian term for this event is "kau ka la i ka lolo," which roughly translates to "sun hovers over the brain". At the moment of the zenith passage, upright objects cast no shadow. The first Hawaiian zenith passage of the sun in 2009 took place in May, so July's zenith passage is your last chance to watch your shadow disappear until 2010.

Total Solar Eclipse

July 21-22

The longest total solar eclipse of the century will take place this month, but in Hawaii we will only be able to see the partial phase of the eclipse. If you look at the sun with a safe viewing filter from 5:00 p.m. to 6:15 p.m. on July 21, it will appear as though something has taken a bite out of the sun. Solar eclipses occur when the new moon moves across the face of the sun, blocking the sun's light from reaching the Earth.

NAKED-EYE PLANETS

Mercury

As July progresses, Mercury moves so close to the sun (as seen from Earth) that it gets lost in the sun's glare and is not visible. Mercury will reappear in the western sky after sunset in August.

Venus

Venus rises in the East at 3 a.m. at the beginning of July (3:13 a.m. by the end of July). At magnitude -4, Venus is the brightest object in the sky after the sun and

moon. On the night of July 18-19, look for a triangle made up of Venus, the waning crescent moon and the star Aldebaran in the constellation Taurus the bull.

Mars

At the beginning of July, look for Mars about 4 degrees above Venus in the pre-dawn eastern sky. Over the course of July, Mars begins to pull away from Venus. At magnitude 1.1, Mars is much fainter than Venus but you might notice its reddish tint, which is caused by the iron oxide in Mars' surface.

Jupiter

For those of us who don't like getting up early in the morning, Jupiter provides a wonderful object to view in the evening sky. Rising just after 10:00 p.m. early in the month (7:58 p.m. on July 31), Jupiter is visible for most of the night. On the night of July 9-10, look for Jupiter in conjunction with the waning gibbous moon.

Saturn

Saturn can be found after sunset in the western sky throughout the month. Saturn sets about 4 minutes earlier each night, starting at 11:17 p.m. on July 1 and setting by 9:27 p.m. on July 31. To find Saturn, look for the constellation Leo the lion. The lion's mane is represented by a group of stars that look like a backwards question mark. Saturn can be found above and to the left of the lion's mane.

MOON PHASES

Full: July 6, 11:21 p.m.

Last Quarter: July 14, 11:53 p.m.

New: July 21, 4:35 p.m.

First Quarter: July 28, 12:00 p.m.

NOTE:

All times given are Hawaii Standard Time.

Information provided in this report was compiled and/or derived from a variety of sources. Among them are the "Sky Events Calendar" by Fred Espenak and Sumit Dutta (NASA's GSFC), Guy Ottewell's "Astronomical Calendar 2009", "Starry Night Pro" software, and Bishop Museum's "Calendar of 2009 Sky Events for the Hawaiian Islands."

GOT QUESTIONS OR COMMENTS?

Please email nancyali@hawaii.edu or call 808-236-9169. For a full schedule of Hokulani Imaginarium shows at Windward Community College, visit <http://aerospace.wcc.hawaii.edu/imaginarium.html>.