

## HEAVENLY NEWS

### “Venus, the Evening Star”

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If you are wondering about the bright “Evening Star” you’ve seen recently in the western sky shortly after sunset...it’s actually our sister planet, Venus. Named after the Roman goddess of Love, Venus is the second planet in our solar system and it orbits the Sun every 224.7 Earth days. It is the brightest natural object in the sky, except for the Sun and the Moon which is why, depending upon the time of year; it is also referred to as the “Morning Star” or the “Evening Star” as it reaches its maximum brightness shortly before sunrise or shortly after sunset. It is always dazzling. At its brightest, Venus can cast shadows on Earth and if you know where to look, it is even bright enough to be seen in full daylight.

Its remarkable brightness results from several favorable factors: its proximity to the Sun, its closeness to the terrestrial observer (you!) and the high value of its “albedo” (that is, how much light is reflected by a planet). Nearly 70% of the light received by Venus from the Sun is reflected back into space. For comparison, Earth’s albedo is about 30%; and our Moon reflects only about 11% of the light that hits its surface.

Because of its similar size and mass Venus has been referred to as Earth’s sister planet, however, Venus has quite a different climate. It is the hottest planet in the solar system, much hotter than the Earth, due to its thick clouds and proximity to the Sun (only Mercury is closer). Humans could not survive there, and no life of any sort has ever been found. Despite years of intensive study, there are still many things about Venus' unusual atmosphere that astronomers don't understand. More than 20 spacecraft have visited Venus, including Venera 9, which landed on the surface in 1975, and Magellan, which used radar to peer through the clouds and make a map of the surface. The Magellan maps proved Venus is indeed geologically active, just as we would expect for a planet almost as large as Earth. These maps also show many geological features similar to Earth’s, including occasional impact craters and volcanos.

Venus completes a cycle of phases similar to our moon as it orbits the Sun. When on the far side of the Sun, and hence farthest from the Earth, it appears as a full disk but is invisible behind the Sun’s glare. As it moves closer to us, in the evening sky, it grows in apparent size. When it reaches greatest eastern elongation (the angle between the Sun and a planet, as seen from the Earth) it passes through half phase to a crescent. It then moves into the morning sky, shrinking in apparent size but increasing in phase from a crescent to a half to full again. Binoculars will enable you to view the crescent phase, which occurs when Venus is closest to the Earth. A telescope is needed to see the full series and you are more than welcome to take a peek at Venus through one of the 14 inch telescopes at the Cameron Park Rotary Club Community Observatory. The observatory is located behind the El Dorado Center, Folsom Lake College there is no charge for admission and is open for public observing (weather permitting) Friday, Saturday and Sunday evenings from 7:30 PM – 9:30PM. You may find driving directions and more information about the observatory at [www.communityobservatory.com](http://www.communityobservatory.com)