

# Mars Kicks Up the Dust as It Makes Closest Approach to Earth

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NASA's Hubble Space Telescope snapped this picture of Mars on October 28, within a day of its closest approach to Earth on the night of October 29. Hubble astronomers were also excited to have captured a regional dust storm on Mars that has been growing and evolving over the past few weeks.

The dust storm, which is nearly in the middle of the planet in this Hubble view is about 930 miles (1500 km) long measured diagonally, which is about the size of the states of Texas, Oklahoma, and New Mexico combined. No wonder amateur astronomers with even modest-sized

telescopes have been able to keep an eye on this storm. The smallest resolvable features in the image (small craters and wind streaks) are the size of a large city, about 12 miles (20 km) across. The occurrence of the dust storm is in close proximity to the NASA Mars Exploration Rover Opportunity's landing site in Sinus Meridiani. Dust in the atmosphere could block some of the sunlight needed to keep the rover operating at full power.

On October 29/30, Mars and Earth reached the point in their orbits where the two planets were the closest they have been since August of 2003. The red planet, named after the Roman god of war, won't be this close again to Earth until 2018. At the 2005 closest approach Mars was at a distance of 43 million miles (69 million km), comparatively a stone's throw across the solar system. Mars goes through a 26-month cycle where its distance from Earth changes. At times when the distance is smallest between the two planets, Mars appears brighter in the sky and larger through telescopes for Earth viewers.

This image of 2005 Mars closest approach was taken with Hubble's Advanced Camera for Surveys. Different filters show blue, green, and red (250, 502 and 658 nanometer wavelengths). North is at the top of the image. Mars is now in its warmest months, closest to the Sun in its orbit, resulting in a smaller than normal south polar ice cap which has largely sublimated with the approaching summer.

The large regional dust storm appears as the brighter, redder cloudy region in the middle of the planet's disk. This storm has been churning in the planet's equatorial regions for several weeks now, and it is likely responsible for the reddish, dusty haze and other dust clouds seen across this hemisphere of the planet in views from Hubble, ground-based telescopes, and the NASA and ESA spacecraft studying Mars from orbit. Bluish water-ice clouds can also be seen along the limbs and in the north (winter) polar region at the top of the image.

*Source: Space Telescope Science Institute (STScI)*

*Image credit: NASA, ESA, The Hubble Heritage Team (STScI/AURA), J. Bell (Cornell University), and M. Wolff (Space Science Institute)*

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