Article courtesy of SKY & TELESCOPE

At opposition on December 8th, Mars will be a "close" 51 million miles from Earth!

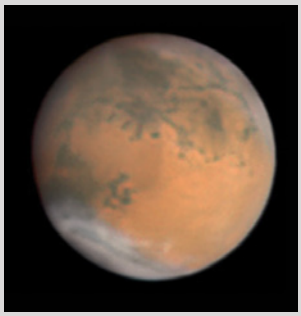
A Transitional Mars Opposition

The Red Planet offers a double dose of December observing pleasure.

Mars lovers have been looking forward to this moment for more than two years. With 26 months between oppositions, it's wonderful to have the Red Planet home for the holidays. Mars dazzles in Taurus at magnitude –1.8, outshining even Sirius, the night sky's brightest star. After a day of hectic holiday shopping and icy roads, the planet's emberlike glow invites us to slow down and savor the tranquility of a winter night.

This opposition, occurring on December 8th (at 5:36 UT), is neither *perihelic* (close) nor *aphelic* (far), but a transitional one smack in the middle. Closest approach to Earth occurs a week earlier, on December 1st at 2:18 UT (November 30th, 9:18 p.m. EST), when the planet will be just shy of 81.5 million kilometers (50.6 million miles) distant and a plump 17.2″ across. While that's 5.4″ smaller than it was during its excellent 2020 perihelic opposition, Mars climbs 19° higher in the sky this time. At latitude 40° north it passes just 15° south of the zenith when it culminates at midnight. Since altitude is one of the best balms for unsteady seeing, we can expect some great telescopic views of the planet this go around.

In December, the Martian South Pole is slightly tipped in our direction, increasing from 3.8° to 8.8° during the month. Since it will be late summer in the southern hemisphere, little will remain of the South Polar Cap. We're more likely to see the planet's northern limb fringed in white from the expansive North Polar Hood (NPH), especially early in the month. The NPH is a system of clouds that forms over the North Polar Region beginning in late summer and persisting through winter. With the start of spring in Mars's northern hemisphere on December 26th, the NPH should begin to dissipate by month's end. Sharp eyes may spot the North Polar Cap poking out from under the clouds before the year is out. Finally, observers should be on the lookout for a return of the rare Edom Promontorium flares.



◀ The December 2007 Mars opposition was similar to the current one, with an extensive cap of clouds that shrouded the planet's north polar region, captured in this image from December 7, 2007. At the time, the Martian disk had a diameter of 15.5″ — somewhat smaller than the 17.2″ the planet will attain this December. (South is up.)

Viewing fine detail on Mars means using the highest magnification that seeing conditions will allow and a set of color planetary filters. A red or orange filter increases the contrast of dark albedo features while at the same time reducing glare. A blue or violet filter enhances atmospheric haze and clouds. Aesthetically, however, you will probably find the unfiltered view the most appealing of all.

To identify what you see at your eyepiece, or to plan an observing session, use our online Mars Profiler at **https://is.gd/marsprofiler**.

MARS IMAGE: DAMIAN PEACH; MARS MAP: DAMIAN PEACH / GREGG DINDERMAN / S&T