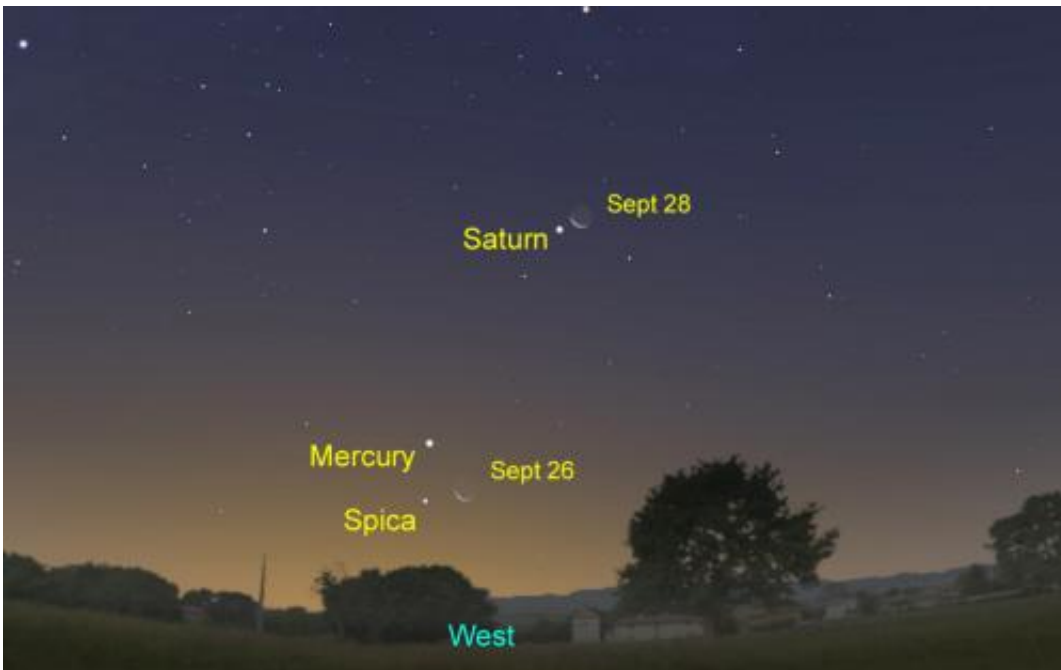


# Catching the planets and new views of Mars

September 25 2014, by Tanya Hill

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After sunset catch Mercury and the moon, then a few days later Saturn and the moon. Museum Victoria/Stellarium

Looking west after sunset on Friday September 26, the thin waxing crescent moon forms a triangle with Mercury and [Spica](#), the brightest star in the constellation of [Virgo](#). You can see how far Mercury has travelled since passing close by Spica last weekend.

A few days later on Sunday September 28, the moon will be found close to Saturn. In fact in Hawaii, they will see Saturn disappear behind the moon for about an hour during their early evening.

This is known as a lunar occultation of Saturn and Australia was lucky enough to see three such occultations this year.

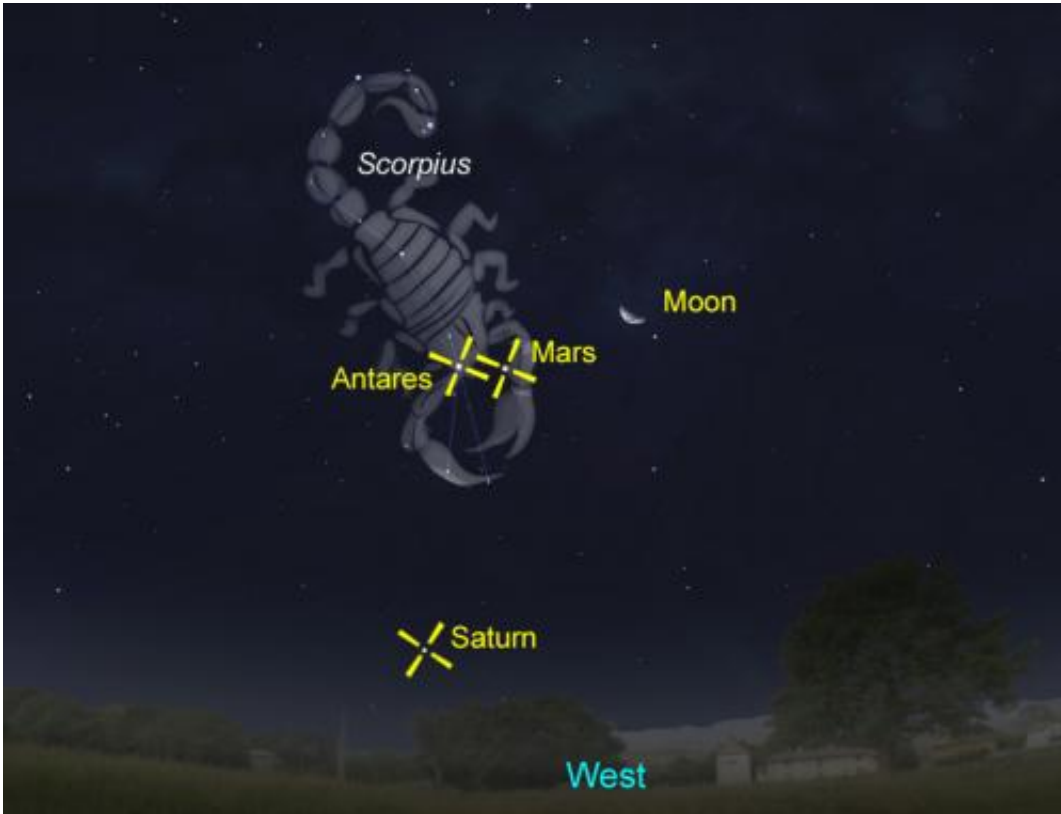
The last Saturn occultation for 2014 will occur on October 25 and be visible from the UK. Then it will be a bit of a wait until 2019, when the next batch of Saturn occultations will occur.

## **Busy times for Mars**

If you've been watching the western sky over the last week or so, you'll have also seen Mars approaching [Antares](#), that's the red planet approaching the [red supergiant star](#) in [Scorpius](#). They sit side-by-side on Tuesday September 30 and the moon will meet up with them as well.

It's been a busy time for Mars this week, with two new spacecraft successfully entering into orbit around the planet.

This morning's arrival at Mars is a triumph for the [Indian Space Research Organisation](#). The Mars Orbiter Mission ([MOM](#)) also known as Mangalyaan, places India as the fourth nation to successfully reach Mars, following the United States, Europe and Russia. They are also the only ones to have made this achievement on their first attempt.



The moon, Mars and Antares fall into line with each other in the early evening on September 30. Credit: Museum Victoria/Stellarium

While earlier in the week, NASA's Mars Atmosphere and Volatile Evolution ([MAVEN](#)) spacecraft arrived at Mars and has already begun to [send back data](#).

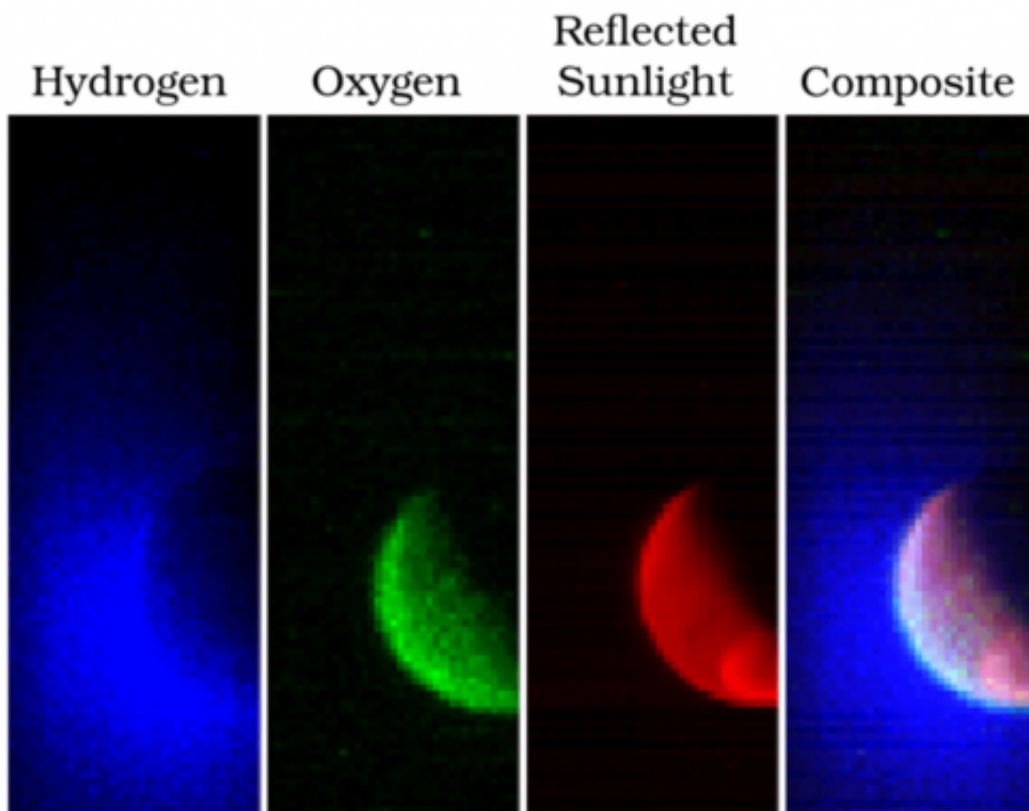
The images released today, show exactly what scientists are looking for in their search to discover where all the water - that was once on Mars - has disappeared to.

The images show that within the atmosphere of Mars, water has been broken down into its two elemental components - hydrogen and oxygen.

The hydrogen gas is escaping out into space, while the oxygen, which is

a heavier gas, remains close to the planet. MAVEN will spend the year measuring how quickly gas is lost from the atmosphere and give an indication of how much water is expected to have left the planet over time.

The two new spacecraft join the Mars Reconnaissance Orbiter ([MRO](#)), [Mars Oydsey](#) and [Mars Express](#) which have been orbiting the [red planet](#) for a decade or more. And all five missions have exciting times ahead as a rare opportunity comes their way.



Eight hours after it arrived, MAVEN shows where gases are located in the atmosphere of Mars. Credit: NASA / LASP / University of Colorado

## Australian comet draws near

[Comet Siding Spring](#), discovered early last year from Australia's [Siding Spring Observatory](#), is set to pass almost 140,000km from Mars on October 19. A few hours later, Mars and its team of spacecraft will approach the comet's orbit, travelling 27,000km from where the comet passed by.

Mars will miss the comet's tail but some gas left behind by the comet will likely pass through the upper reaches of Mars' atmosphere. This will briefly change the atmosphere's density and temperature.

MAVEN and MRO will feel the greatest effects, as both spacecraft have orbits which, at their closest point, will see them travelling only a few hundred kilometres above Mars and dipping into the top of the atmosphere. The spacecraft will experience strong atmospheric drag and are expected to need additional manoeuvres to maintain their orbits.

As I stare up at Mars, I find it amazing to think that all this activity is going on around that small red dot in the sky. It brings home to me, that Mars is a world of its own and there's so much still yet to learn.

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