

THE SKY THIS MONTH

SEPTEMBER 2008

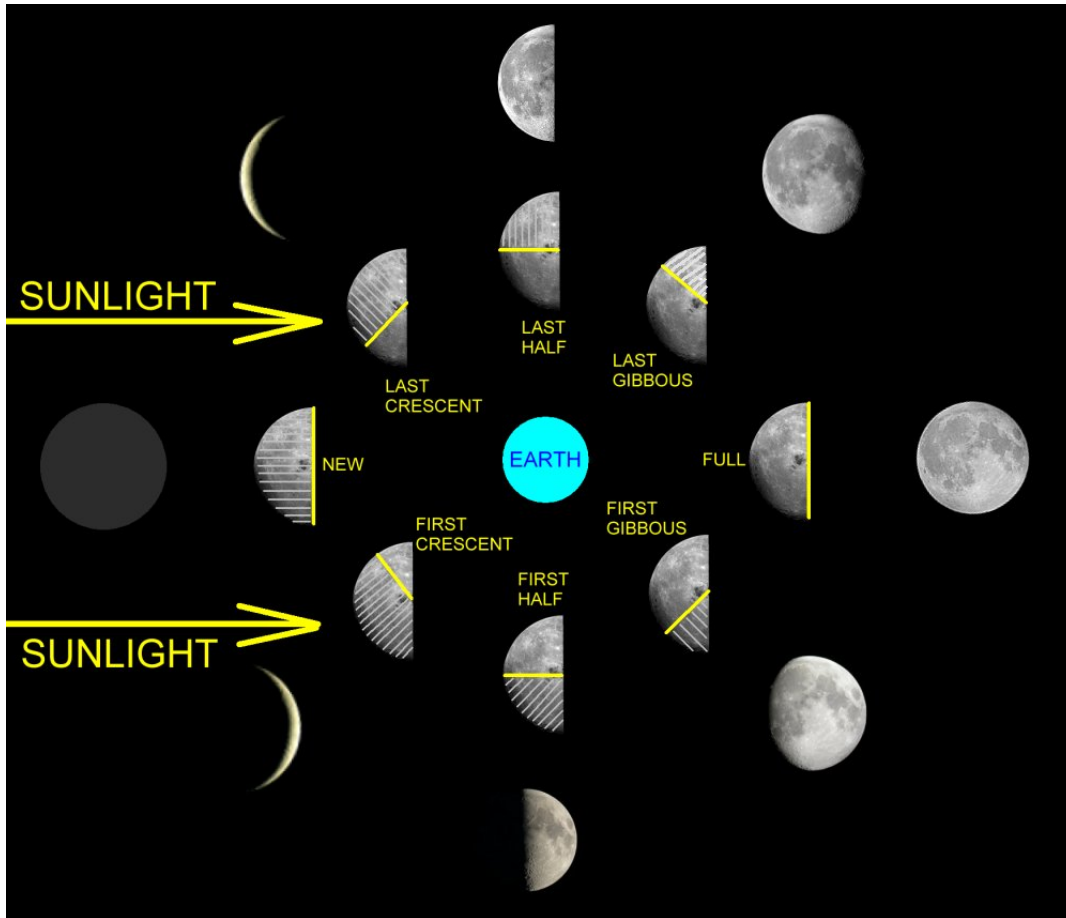
THE MOON'S PHASES

Everyone has seen our Moon's phases (crescent, half, full) but not everyone knows why they happen.

Half of the Moon's sphere experiences daylight at any one time. The phase of the Moon depends solely on what portion of the Moon's sunlit side we can see as the Moon orbits us.

The Moon keeps the same face towards the Earth as it orbits. The phase is the percentage of this "near side" that is in daylight.

The "far side" (or "dark side") is sunlit just as often as the near side. When the entire far side is illuminated, the Moon is backlit from our perspective and therefore invisible. We call this phase "New Moon".



The Moon's positions as it orbits Earth (not to scale), shown with corresponding phases. The inner ring shows the Moon's positions. Yellow lines mark the divide between near and far sides. Cross-hatching indicates the sunlit far side. The outer ring indicates the phases we see. Design by the author.

As you read this article, the Moon's day is progressing. Consequently, so are its phases. Daylight moves across its entire surface once every lunar day (29.5 Earth days).

At “first crescent” phase, we see the near side’s day beginning. The invisible far side is mostly sunlit.



A 10-percent first crescent Moon. The far side contains the remaining 90 percent of the daylight. Image by the author.

At “first half” phase, we see the near side’s daylight progressing. The center of the near side’s face is experiencing dawn. It is mid day on the right limb and still night on the left half.



A 50-percent “first half” Moon. The far side contains the remaining 50 percent of daylight. Image by the author.

At “full” phase, we see the Moon’s entire sunlit side. It is mid day at the center of the near side. The far side is truly dark.



Full Moon of August 16, 2008. Image by the author.

At “last half” phase, we see the near side’s daylight ending. It is sunset at the center of the near side. It is mid day on the left limb. It is night on the right half.



A 50-percent “last half” Moon. It is sunset all along the day-night divide (the “terminator”). Image by the author.

At “last crescent” phase, we see the near side’s day ending. The far side is mostly in daylight.



A 20-percent “last crescent” Moon. Nightfall is approaching the left limb. Image by the author.

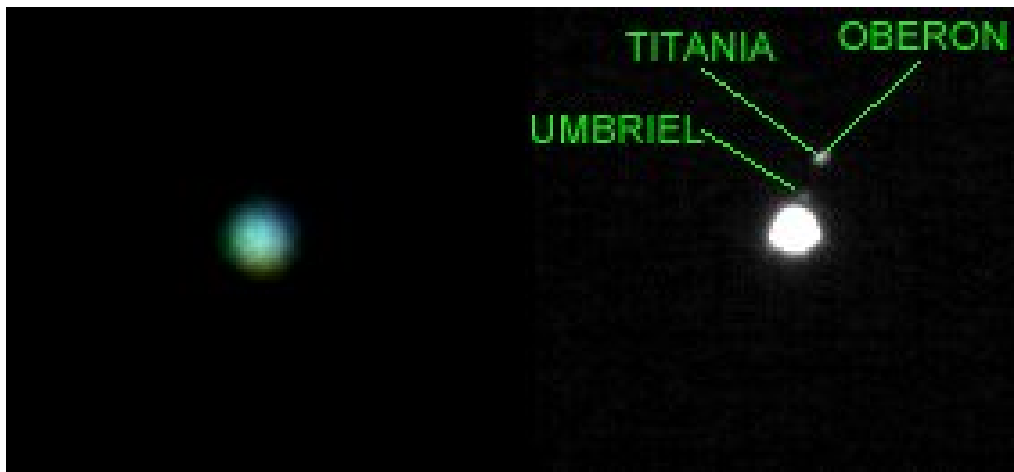
In September, observe the progression of another world's day!

First Crescent: Evening of the 4th;
First Half: Evening of the 7th;
Full (Harvest Moon): Evening of the 15th;
Last Half: Near midnight on the 22nd;
Last Crescent: Before dawn on the 24th.

LOCAL EVENTS

The Mill of Kintail will host a free public star party at 7 p.m. Friday, September 26th. Visit www.castor2.ca/parties.

THE SKY LAST MONTH – AUGUST 2008



The planet Uranus was observed in colour (left) and with three of its largest moons (right) on August 22, 2008. Images by the author.

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