

Skies for March and April 2022

By Robert C. Victor. Twilight all-sky maps by Robert D. Miller. Scenes depicting gatherings of Moon, planets, and stars from Abrams Planetarium *Sky Calendar*.

Break out those binoculars! In all of March, early risers will be rewarded by views of a pair of planets within a single binocular field, or two pairs in separate fields in first few days of month, or even three planets within a single field late in month. Background stars marking the head and tail ends of Capricornus provide additional interest. With the start of daylight saving time on the second Sunday (March 13), viewing times suddenly shift an hour later, becoming more agreeable for folks averse to predawn consciousness.

Morning sky

Bright Venus and faint Mars linger close together in the southeast an hour before sunup throughout March. They are 5.0° apart on March 1, within 4° on March 12-19, and widening to 6.0° apart by March 31. Look for Mars to lower right of Venus for most of month, and climbing directly to its right during closing week. [Refer to morning twilight scenes from the *March Sky Calendar*.]

At the start of March, bright **Mercury** is getting lower each morning, while **Saturn**, emerging from solar conjunction, climbs higher daily. On March 2, Mercury (mag. -0.1) passes within 0.7° south (lower right) of fainter Saturn (mag. +0.8). Look for the pair very low in ESE, within 23° lower left of Venus about 40 minutes before sunrise. Binoculars give a fine

view of the conjunction on March 2 and of the widening pair for a few additional mornings as Mercury sinks into brighter twilight.

Outdoors, visualize why that happens: In late February and early March: Spaceship Earth is heading in a direction a few degrees above or upper left of Antares in the southern morning sky. As seen from “above” or north of the solar system, all the planets trace out their orbits in a counterclockwise direction. Mercury, an inner planet, goes faster than Earth. Already on the far side of its orbit, Mercury will pass superior conjunction, invisible on the far side of the Sun, on April 2. Saturn was at conjunction on the far side of the Sun on Feb. 4. Although distant Saturn is going around the Sun in the same direction as Mercury, Earth’s motion is faster than Saturn is, causing the Sun to shift from Aquarius into Pisces in March, so Saturn, left behind in Capricornus, rises farther ahead of the Sun each morning. Earth will eventually overtake Saturn, on August 14, and it then will appear at opposition and be visible all night.

As Venus circles around the Sun into the part of its orbit more distant from us, telescopes show the disk shrinking in size while its phase waxes. In transition from crescent to gibbous, the planet is half-illuminated when near its greatest angular separation of 47° west of the Sun, on March 20. Venus will eventually pass superior conjunction, on October 22.

Follow the Moon in morning twilight from March 16 through March 29. After passing Full on the morning of March 18, the waning gibbous Moon appears 5° from **Spica** on March 20,

and passes just 2° north of **Antares**, heart of the Scorpion, on March 23. **The crescent Moon will appear about 5° to 7° below a compact gathering of Venus, Mars, and Saturn 5.3° wide on morning of March 28.** [Refer to scenes from *March Sky Calendar*.]

Venus passes within 2.2° south of Saturn on March 28 and 29. On the latter date, the 9 percent crescent Moon appears within 14° lower left of Venus. Using binoculars 30 minutes before sunrise, can you spot Jupiter just risen, 17° lower left of the Moon?

On March 30, it will require binoculars, a very clear sky 15-20 minutes before sunrise, and an unobstructed view to spot the 4-percent old crescent Moon just risen 13° south of east, and Jupiter within 5° to its upper left.

On March 31, the Moon cannot be seen, but **three planets, Venus, Saturn, and Mars, still fit within 6.0°.** Saturn will be the middle one, about 3.1° from Mars and 3.1° from Venus. Best viewing time may be about one hour before sunup. About 30-35 minutes before sunrise, in a brighter sky, **use binoculars to watch for Jupiter** rising within 27° lower left of Venus. Four planets, Mars-Saturn-Venus-Jupiter, span 32° on March 31.

Mars and Saturn will form a close pair 0.4° apart, some 7.5° to the upper right of Venus, **on April 5.** It is expected they will be closely matched in brightness. Can you notice any difference in their colors? This will be the morning of the least

span of the four planets, Jupiter through Venus to the Mars-Saturn pair, 30°.

Jupiter will rise earlier daily, becoming easier to see during April, **and will form brilliant close pairings with Venus on April 30 and May 1**, within 0.5° and 0.6°, respectively, from mid-U.S. **A few days earlier, on April 27, when the planets have closed to 3.2° apart, they will appear in a spectacular gathering with a waning crescent Moon!**

Evening sky

In March 2022, **the evening sky**, though without naked-eye planets, **still offers plenty of attractions for unaided eye and binoculars.** **Orion** is well up in south at dusk, and begins his slide toward the west. Orion is easily recognized by his 3-star belt, with bright, blue-white **Rigel**, his foot, below, and reddish **Betelgeuse**, his shoulder, above. [Refer to scene from *Sky Calendar* showing Moon positions for March 8-13.] Below the belt is a short vertical line of stars, **Orion's sword**. Through binoculars, the middle of the sword appears as a group of stars in a fuzzy cloud of gas and dust, **the Great Nebula**, where stars are being formed.

Locate the brightest star, **Sirius**, not shown on the scene showing the Moon for March 8-13, by extending Orion's belt to lower left. The "Dog Star" Sirius completes the nearly equilateral **Winter Triangle** with Betelgeuse and Procyon. Extend Orion's belt away from Sirius to find **Aldebaran**, eye of Taurus, the Bull. Fainter stars of the **Hyades cluster** nearby

complete the V-shaped head of Taurus. Each arm of the “V” is 4° long, fitting nicely into the field of binoculars. Next, look 14° west of Aldebaran for the beautiful **Pleiades star cluster**. Both clusters are wonderful sights for binoculars!

Follow the Moon at dusk, from a thin crescent low in west on March 3 until Full low in east on the night of March 17. On March 6 at nightfall, about 1.5 hours after sunset, using binoculars, find a pair of 6th-mag. “stars” 0.9° apart, and 3°-4° above the 20-percent crescent Moon, as seen from central U.S. The upper left member of the pair is actually the planet **Uranus**. A telescope magnifying 100-power or more will reveal the difference: Uranus shows a tiny disk, and the star does not.

The evening scene for March 8-13 shows the Moon moving through Taurus March 8-10, starting between the Pleiades and Aldebaran on March 8, to near Beta and Zeta, the tips of the horns, on March 10. On March 12, the waxing gibbous Moon appears near **Pollux and Castor**, the bright stars of Gemini, the Twins. On March 15, the Moon passes a few degrees north of **Regulus**, heart of Leo, the Lion, in the eastern sky. Regulus, 37° east of Procyon and Pollux, is shown on the all-sky chart for evening mid-twilight. Full Moon occurs on the night of March 17 (at 3:18 a.m. EDT on morning of March 18). At lat. 40° N in mid-U.S., moonrise on March 17 occurs about 31 minutes before sunset, and on March 18 in twilight, about 36 minutes after sunset. For the next few nights, moonrise occurs about 70-75 minutes later each night. Instead of staying up late, you can easily follow the waning Moon in the morning sky March 18-29.

Spring begins on Sunday March 20, at 11:33 a.m. EDT.

And do not miss the spectacular gathering of the Moon and three planets on the morning of Monday, March 28. More beautiful predawn gatherings to come, in April and May! By mid-April, Mercury begins its best-of-year apparition in the western sky at dusk, and then fades away in early May. And there will be a total eclipse of the Moon on the night of Sunday, May 15.

Illustrations of the events in this article are excerpted from the Abrams Planetarium monthly *Sky Calendar*. To subscribe for \$12 per year or to view a sample copy, visit www.abramsplanetarium.org/skycalendar/

Robert C. Victor originated the Abrams Planetarium monthly Sky Calendar in October 1968, and still helps produce issues occasionally. He enjoys being outdoors sharing the wonders of the night sky, and hoping for the pandemic to end!

Robert D. Miller, who provided the twilight charts appearing in the online version of this column, did graduate work in Planetarium Science and later astronomy and computer science at Michigan State University and remains active in research and public outreach in astronomy.