SKY CALENDAR OCTOBER 2020

An aid to enjoying the changing sky

Planetarium business office:
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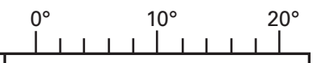
Use this scale to measure angular distances between objects on diagrams below.



Nearly all night: Mars presents its closest and brightest (peak mag. –2.6) approach to Earth until 2035 (see Oct. 6, 13), even outshining Jupiter most of month. Telescopic view: Box, lower right.

Evening: Jupiter (mag. –2.4 to –2.2) and **Saturn** (+0.5 to +0.6) are paired in S to SSW at dusk, east of the *Teapot* of Sagittarius. In mid-October, our Spaceship Earth races away as each appears 90° E of Sun, first Jupiter on Oct. 10-11, and Saturn on next weekend. Both are shrinking in apparent size, Jupiter faster, because it's closer. By October's end, extent of Saturn's rings begins to exceed Jupiter's equatorial diameter. It's a good month to witness eclipses of Jupiter's Galilean moons away from the disk, and the shadow of Saturn cast upon its rings. With binoculars, note 2.1° by 1.1° kite-shaped asterism *Territory of Dogs* within 7° lower left of Saturn.

Countdown to great conjunction: Jupiter-Saturn are **7° apart on Oct. 7;** 6° on Oct. 21; **5° on Nov. 2;** 4° on Nov. 13; and **3° apart on Nov. 23.** Jupiter-Saturn will appear **within a 1° field Dec. 12-29,** and **closest, 0.1° apart on Dec. 21,** their tightest pairing between 1623 and 2080.

Use binoculars and chart, *October Evening Skies,* over, to locate **Mira, Uranus, and Neptune.** A line from Alpha to Delta Ceti, 7° long, extended 6°, locates Mira, expected at peak brightness in late Sept.-early Oct. Compare Mira's brightness to Alpha Ceti (mag. 2.5), Gamma (3.5), and Delta (4.1). In mid-Oct., Uranus forms nearly isosceles triangle with Xi-2 and Mu Ceti, 4.3-mag. stars 4.5° apart in head of Cetus. Uranus, mag. 5.7, is nearly 6° from each. Neptune, mag. 7.8, is then 1.2° ENE of 4.2-mag. Phi Aquarii.

Morning: Venus (mag. –4), rises in E about 3 hours before Sun. **Don't miss close conjunction with Regulus Oct. 2 and 3;** see calendar. Venus goes 1.2° per day, or 6° each 5 days, against stars.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY

Oct 1-3, one hour before sunrise

Sat 3, Mars, PISCES, Fri 2, CETUS, Thurs 1, WSW, W

Oct 1 & 4, one hour before sunrise

Sickle, Venus Thurs 1, Regulus, LEO, Venus Sunday 4, Denebola, E

Thurs Oct 1
Full Moon
5:05 p.m. EDT.
2nd smallest full moon of this year.
Lunar distance 252,476 miles at apogee, Oct. 3 at 1 p.m. EDT.

From long. 90° W one hour before sunrise, Venus-Regulus appear 1¾° apart on Oct. 1 and Oct. 4, and 0.6° apart on Oct. 2 and 3. From E Coast, Venus-Regulus are slightly farther than 0.6° apart on Oct. 2, and slightly closer on Oct. 3. From W Coast, Venus-Regulus are 0.5° apart on Oct. 2, and 0.7° apart on Oct. 3.

Thurs Oct 1, 30 minutes after sunset

Mercury at gr elongation, 26° east of Sun; unfavorable, low in bright twilight.

Mercury mag 0.0, WSW

Thurs Oct 1, one hour after sunset

Alpha Cap, Beta Cap, CAPRICORNUS, Saturn, Jupiter, Territory of Dogs, TEAPOT, SAGITTARIUS, SSE, S, SCORPIUS, SSW

Oct 1-3, 1¾ hours after sunset

PEGASUS, Hamal, ARIES, Mars, Thurs 1, Fri 2, PISCES, 5.7 mag. Uranus, Sat 3, E

LEO, Sickle, Tues 13, Mon 12, Venus Tues 13, Regulus

Castor, Pollux, GEMINI, Sunday 11, Beehive Cluster, Sat 10, Fri 9

overhead, Beta Tauri, Thurs 8, Wed 7, Pleiades, Tues 6, Zeta Tauri, Hyades, Aldebaran, TAURUS, Mon 5

Hamal, 5.7 mag Uranus, ARIES, Sunday 4, Gamma, Alpha, CETUS, Delta, Mira, looking West

Oct 3-13, 1¼ hours before sunrise

Mars Sat 3, Sat 3

Fri Oct 9
Last Quarter Moon
8:39 p.m. EDT

looking East, CANIS MINOR, Procyon, Betelgeuse, ORION

Tues Oct 6: *Mars closest,* 38.57 million miles. Light travel time to Earth, 3 min 27 sec.

Tues Oct 13: *Mars at opposition,* up nearly all night.

Oct 14-15, 1 hour before sunrise

LEO, Venus, Denebola, Wed 14, Old Moon, Thurs 15, E

Thurs Oct 15: Map, *October Evening Skies,* over, depicts tonight's sky three hours after sunset from lat. 40° N. Jupiter-Saturn now within 6.5°. Binoculars: Mira, Uranus, Neptune.

Friday Oct 16

Closest New Moon of year, 3:31 p.m. EDT. Lunar distance 221,775 miles at perigee at 8 p.m. EDT.

Sat Oct 17, 30 minutes after sunset

Young Moon, WSW

Sunday Oct 18, evening: Three bright outer planets, Jupiter, Saturn, Mars, span 90°. **Sunday Oct 25:** Mercury in inferior conjunction.

Tues 20

Wed Oct 21, predawn: Peak of Orionids

Mon 19, Antares, Sunday 18, SCORPIUS, SW, WSW

Oct 18-20, one hour after sunset

Saturn, Jupiter, Fri 23, Territory of Dogs, Thurs 22, Wed 21, S, TEAPOT, SAGITTARIUS, SSW

Oct 21-23, 1½ hours after sunset

Fri Oct 23
First Quarter Moon
9:23 a.m. EDT

Oct 27-31, 1½ hours after sunset

Mars, Hamal, ARIES, Tues 27, Wed 28, 5.7 mag Uranus, Thurs 29, PISCES, Fri 30, Alpha Psc, Beta, Sat 31, Gamma, CETUS, Mira, E, Delta, ESE, Alpha

Alpha, 5.7 mag Uranus, Gamma, Delta, Sat 31, CETUS, Mira, Alpha Psc, PISCES, Fri 30, Mars, Thurs 29, WSW, W

Oct 29-31, 2½ hours before sunrise

Lunar distance 252,522 miles at apogee Oct. 30 at 3 p.m. EDT.

Sat Oct 31, 45 minutes before sunrise

Mercury, 4° from Spica Oct 31-Nov 3 (min. dist., in quasi-conjunction), brightens rapidly as both rise higher daily. Mercury at very favorable gr elong Nov. 10.

VIRGO, Venus, Mercury (mag +1.9), Spica, E, ESE

Sat Oct 31

Full "Blue" Moon, 10:49 a.m. EDT.

2nd Full Moon this month and smallest of 2020.

Using a prior definition, this is *not* a Blue Moon, and next will be on Aug. 22, 2021.

Moon and Mars on night of Oct. 2, W Coast in 8 p.m. hour (PDT), E Coast in midnight hour (EDT), Moon's center only 1.2°-1.5° S of Mars. **Around sunrise,** find **Mars** near Moon on Oct. 3, and **Venus** near Moon on Oct. 13 and 14. **Around sunset,** find **Jupiter** near Moon on Oct. 22, and **Mars** near Moon on Oct. 29. **Whenever Mars is at opposition, seasons in its N and S hemispheres are 95° ahead of Earth's. So on Oct. 13, 2020, it's early summer in Mars' S hemisphere. Mars' dark feature Syrtis Major in good view** for 12 consecutive nights, about 36 minutes later nightly. **Series begins on different date in each time zone:** Begin Oct. 3 at 10:03 p.m. EDT; or Oct. 4 at 9:39 p.m. CDT; or Oct. 6 at 9:52 p.m. MDT; or Oct. 7 at 9:28 p.m. PDT. Mars highest in S on 6th and 7th nights of each 12-day series. On 12th night, Mars is low in WSW.
More on Mars: *abramsplanetarium.org/msta*

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