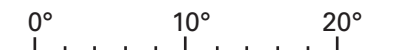


# SKY CALENDAR DECEMBER 2020

An aid to enjoying the changing sky

Use this scale to measure angular distances between objects on diagrams below.



**Evenings: Jupiter and Saturn form a striking, close pair in SW sky at dusk**, within 2.2° apart on Dec. 1, closing to just over 6 arcminutes (0.1°) apart on Monday, Dec. 21, and reopening to nearly 1.2° apart on Dec. 31. During Dec. 12-29, the two giant planets appear within 1°, easily fitting within a low-power telescope field. Evenings around Dec. 21, try higher magnifications for closer views of Jupiter's cloud belts, system of four Galilean satellites, and Saturn with rings 21° from edge-on, all within one field!

**The pairing of Jupiter-Saturn in Capricornus on Dec. 21, 2020 is their closest since a conjunction in Cancer in 1623, and until another in Capricornus in 2080.** Jupiter-Saturn pairings occur at intervals of about 20 years, just over two-thirds of the way eastward (or nearly one-third of the way westward) around the zodiac on each successive occasion. At their next two pairings, in Virgo on the morning of Oct. 31, 2040, and in Taurus within 5° S of the Pleiades on the evening of April 7, 2060, they'll appear 1.1° apart. This month, Jupiter at mag. -2.0 is the brightest evening "star" following Sun over WSW horizon by 3.3 hours on Dec. 1, by 2.3 hours on Dec. 21, and 1.7 hours on Dec. 31 (from lat. 40° N). Saturn at mag. +0.6 is about one-tenth as bright.

**Mars is high in SW sky at dusk.** Fading from mag. -1.1 to -0.2 this month as Earth pulls away, the red planet ranks next in brightness after Jupiter among early evening's "stars"; claims first place when Jupiter sets; and then drops back to second when Sirius appears in ESE. During Dec. 1-31, Mars goes 10° east against the faint constellation Pisces. Binoculars help you enjoy these passages: Mars 1.0° S of 4.3-mag. Epsilon Psc on Dec. 4; within 6° N of gibbous Moon on Dec. 23; 4.5° S of 3.6-mag. Eta Psc on Dec. 31; 2.5° N of 4.3-mag. Omicron Psc on Jan. 1, 2021; and 1.6° N of 5.7-mag. Uranus on Jan. 20.

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SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p><b>Dec 6-8, one hour before sunrise</b></p> <p>Tues 8 Mon 7 Sunday 6</p>	<p><b>Mon Dec 7</b> Last Quarter Moon 7:37 p.m. EST</p> <p><b>Mon Dec 14</b> New Moon 11:17 a.m. EST</p>	<p>Saturn Jupiter Sa-Ju 2.2°</p> <p>Tues Dec 1, one hour after sunset</p>	<p>Fri 4 Castor Pollux GEMINI Thurs 3 Wed 2</p> <p>Dec 2-4, one hour before sunrise</p>	<p>Saturn Jupiter Sa-Ju 1.9°</p> <p>Thurs Dec 3, one hour after sunset</p>	<p>Dec 10-12, one hour before sunrise</p> <p>Thurs 10 Spica VIRGO Fri 11</p>	<p>Alpha Cap Beta Cap Sat Dec 5, one hour after sunset</p>
<p><b>Sunday Dec 13, 40 minutes before sunrise</b></p> <p>Beta Lib Alpha Lib Venus Old Moon</p>	<p><b>Total solar eclipse</b> Chile and Argentina.</p> <p><b>Mon Dec 14, two hours after sunset</b></p>	<p><b>Tues Dec 15, 40 minutes after sunset</b></p>	<p><b>Wed Dec 16, one hour after sunset</b></p>	<p><b>Dec. 12, 16: Planets near old, young crescent Moon. On Sat. Dec. 12 at dawn, don't miss 7-percent waning crescent Moon 4° upper right of Venus.</b></p>	<p>Sat 12 LIBRA Venus Sat 12</p>	<p>Alpha Cap Beta Cap Sat Dec 12, one hour after sunset</p>
<p><b>Sunday Dec 20, one hour after sunset</b></p>	<p><b>Sunday Dec 20, one hour after sunset (telescopic view)</b></p>	<p><b>Mon Dec 21, one hour after sunset</b></p>	<p><b>Mon Dec 21, one hour after sunset (telescopic view)</b></p>	<p><b>Tues Dec 22, one hour after sunset</b></p>	<p><b>Tues Dec 22, one hour after sunset (telescopic view)</b></p>	<p><b>Sat Dec 19, one hour after sunset</b></p>
<p><b>Dec 26-29, 40 minutes after sunset</b></p>	<p><b>Mon Dec 21</b> First Quarter Moon 6:41 p.m. EST</p> <p><b>Tues Dec. 22, predawn hours</b> Peak of Ursid meteors</p> <p><b>Tues Dec 29</b> Full Moon 10:28 p.m. EST</p> <p><b>Tues Dec 29, 40 minutes before sunrise</b></p>	<p><b>Wed Dec 23, 40 min before sunrise</b></p>	<p><b>Wed Dec 23, two hours after sunset</b></p>	<p><b>Uranus, mag. 5.7, is W of line from 2.0-mag. Hamal (Alpha Ari) to 4.3-mag. Mu and 2.5-mag. Alpha in Cetus. (See Nov. 13, Dec. 14, 23.) Using binoculars, start at 4.3-mag. Mu Ceti or 4.3-mag. Xi-2 Ceti, and star-hop to Uranus, noting position relative to 5.7-mag. stars 31 and 19 Ari, 6.0-mag. 29 Ari, and 5.5-mag. Xi Ari. Neptune, of mag. 7.9, is 3/4° to 1° ENE of 4.2-mag. Phi Aquarii.</b></p>	<p><b>Dec 29-31, one hour before sunrise</b></p> <p>Thurs 31 Castor Pollux GEMINI Wed 30 Tues 29</p>	

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