

November Evening Skies

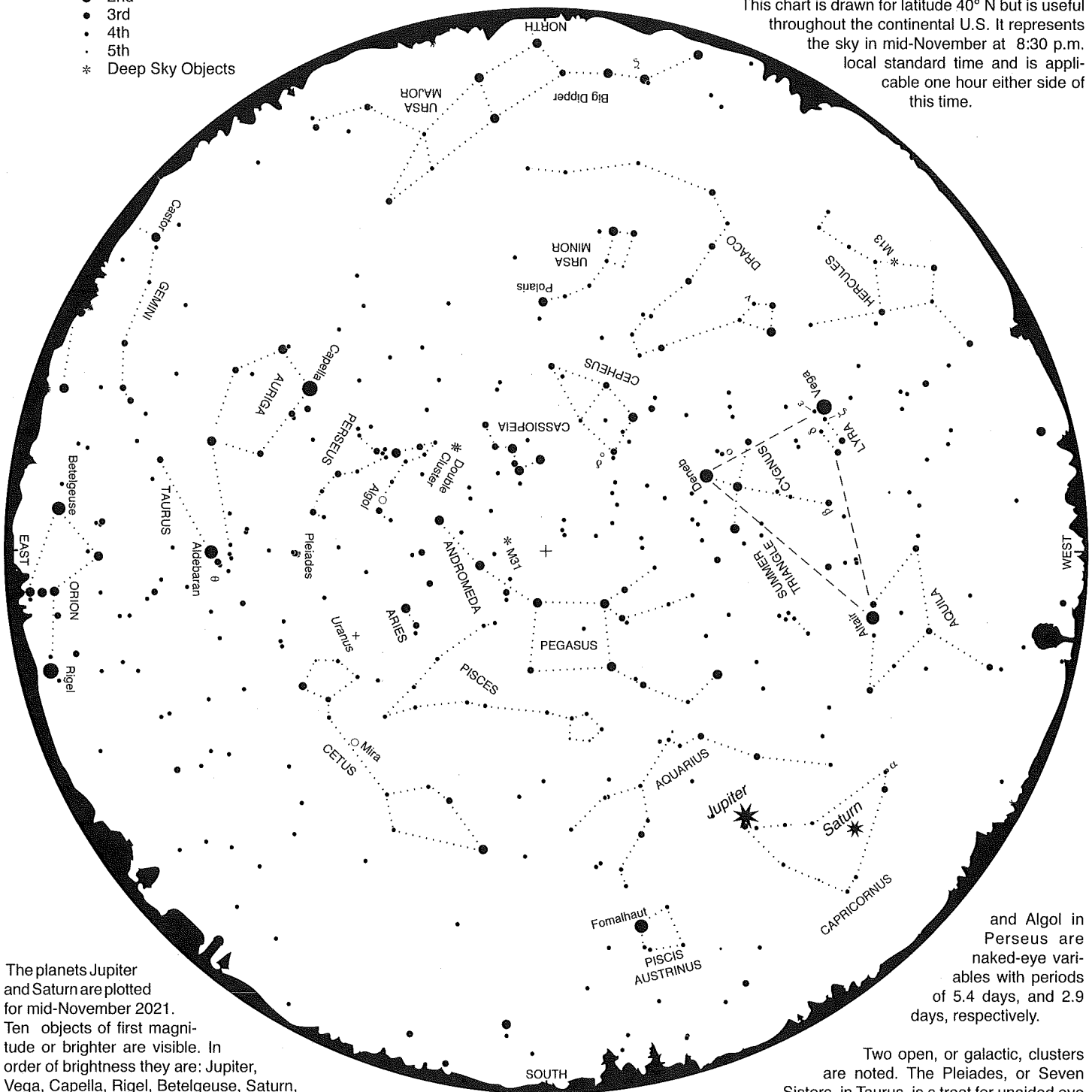
LEGEND Star Magnitudes

- Zero or brighter
- 1st
- 2nd
- 3rd
- 4th
- 5th
- * Deep Sky Objects

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This chart is drawn for latitude 40° N but is useful throughout the continental U.S. It represents the sky in mid-November at 8:30 p.m. local standard time and is applicable one hour either side of this time.



The planets Jupiter and Saturn are plotted for mid-November 2021. Ten objects of first magnitude or brighter are visible. In order of brightness they are: Jupiter, Vega, Capella, Rigel, Betelgeuse, Saturn, Altair, Aldebaran, Fomalhaut, and Deneb.

Our usual monthly maps are designed for stargazers just beginning to find their way around the sky. This month's map is useful for serious stargazers from dark locations. It contains many more stars, inclusive to magnitude 4.5, and some fainter stars as needed to complete patterns or assist in locating special objects.

A selection of double stars (labeled with Greek letters) and "deep sky objects" is also plotted. All are visible with modest equipment; most are within the range of the unaided eye or binoculars.

The double stars, in order of decreasing angular separation, are ζ UMa, δ Lyr, α Cap, \circ Cyg, θ Tau, ϵ Lyr, ν Dra, ζ Lyr, β Cyg. The stars δ in Cepheus,

and Algol in Perseus are naked-eye variables with periods of 5.4 days, and 2.9 days, respectively.

Two open, or galactic, clusters are noted. The Pleiades, or Seven Sisters, in Taurus, is a treat for unaided eye and binoculars. The Double Cluster in Perseus is a fine object if the sky is dark.

M31 is the famous Andromeda Galaxy, a collection of 300 billion stars located 2.5 million light years from Earth. It is barely visible to the unaided eye as a smudge of light. Binoculars in a dark location reveal an impressive oval.

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An aid to enjoying the changing sky

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http://abramsplanetarium.org/

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

0° 10° 20°

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p>Mon Nov 1, Moon before sunrise</p> <p>SAGITTARIUS</p> <p>Mercury Spica ESE</p> <p>Sun Nov 7, one hour after sunset</p> <p>Venus Moon</p> <p>Don't miss this beautiful sight!</p> <p>SSW</p>	<p>Tues Nov 2, one hour before sunrise</p> <p>VIRGO</p> <p>Arcturus Mercury Spica ESE</p> <p>Jupiter Theta Alpha Cap Beta Cap Gamma Saturn</p> <p>Delta Cap.</p> <p>CAPRICORNUS</p> <p>Tues 9</p> <p>SAGITTARIUS</p> <p>Venus Moon</p> <p>SSW</p>	<p>Wed Nov 3, 30 minutes before sunrise</p> <p>VIRGO</p> <p>Old Moon Mercury Mars ESE</p> <p>Nov 8 & 9, one hour after sunset</p> <p>Nov 10, 45 minutes before sunrise</p> <p>VIRGO</p> <p>Spica</p> <p>SSW</p>	<p>Thurs Nov 4, New Moon 2:15 p.m. PDT; 5:15 p.m. EDT. Uranus at opposition.</p> <p>VIRGO</p> <p>Uranus at opposition.</p> <p>Weds Nov 10, 45 minutes before sunrise</p> <p>VIRGO</p> <p>Spica</p> <p>SSW</p>	<p>Fri Nov 5, 25 minutes after sunset</p> <p>SAGITTARIUS</p> <p>Antares Young Moon SSW</p> <p>Alpha Beta Gamma Cap Saturn</p> <p>Jupiter Delta Cap</p> <p>Thurs 11</p> <p>Thurs 12</p> <p>FO: Thurs Nov 11, 7:46 a.m. EST</p> <p>CAPRICORNUS</p> <p>Mercury Mars ESE</p>	<p>Nov 10-12, one hour after sunset</p> <p>VIRGO</p> <p>Alpha Cap Beta Gamma Cap Saturn</p> <p>Jupiter Theta Cap</p> <p>Nov 11</p> <p>Nov 12, 40 minutes before sunrise</p> <p>VIRGO</p> <p>Spica Sigma Lambda</p> <p>Mercury Mars ESE</p> <p>Nov 22 & 23, four hours after sunset</p> <p>Castor Pollux ENE</p> <p>Tues 23</p> <p>Nov 30, 1 1/2 hours after sunset</p> <p>Jupiter Theta Cap Alpha Cap Beta Cap</p> <p>CAPRICORNUS</p> <p>Venus</p>	<p>Sat Nov 6, Saturday Nov 6, evening: Jupiter is equidistant from Gamma and Delta in Capricornus, 1.7° from each. Keep watching!</p> <p>SAGITTARIUS</p> <p>Standard Time resumes overnight</p> <p>Venus 1.7° south of Lambda Sagittarii. Which star will Venus pass one week from tonight? Look tonight!</p> <p>Mercury Mars ESE</p> <p>Nov 22 & 23, four hours after sunset</p> <p>Castor Pollux ENE</p> <p>Tues 23</p> <p>Nov 30, 1 1/2 hours after sunset</p> <p>Jupiter Theta Cap Alpha Cap Beta Cap</p> <p>CAPRICORNUS</p> <p>Venus</p>
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Evenings in November: Venus is low in SW at dusk. Jupiter and Saturn well up in S. Seen at a constant stage of twilight. Venus will be 3° higher at month's end, while setting time widens from 2.4 to 2.8 hours after sunset. Enjoy Venus' eastward motion through Sagittarius, slowing from 1.0° to 0.6° per day this month. Venus sets unusually far south, near stars of昴 on Nov. 6, 12, 19. Saturn creeps toward 4, 1-mag. Theta Cap until they set in twilight in Jan. 2022. On Nov. 6, Jupiter is equidistant from 2.8-mag. Delta Capricorni, tail of Sea-goat and 3.7-mag. Gamma, 1.7° from each. These stars are 1/4° apart. Jupiter passes 1.5° N of Delta on Nov. 16.

Telescope views: As Venus closes in on our home planet, its disk grows from 26" (laseconds) to 39" across this month, a 50-percent increase; in apparent size, while illumination decreases from 48 percent to 39 percent. The best is yet to come! The crescent Venus becomes more slender, while peaking in brilliance at mag.-4.9 in last days of November and first two weeks of December. Jupiter features cloud belts and four Galilean satellites, while Saturn displays rings tipped 19° from edge-on.

Mercury continues favorable morning apparition into November's second week. On Nov. 2, Mercury 4.1° N of emerging Spica. On Nov. 3, Moon is 2°-3' above Mercury and 5° N of Spica. On Nov. 10, soon-to-depart Mercury passes 1.0° N of faint mag.+1.6 emerging Mars. Binoculars! **Moon pairs with bright planets:** At dawn on Nov. 3, and at dusk on Nov. 7, 11.

The deep, nearly total eclipse of the Moon on the night of Nov. 18-19 will likely be very colorful! A narrow silver, just 2.4 percent of the Moon's diameter, brightly sunlit, with shadowed disk ranging from light blue or yellow, to a deep rust color closest to center of Earth's shadow. The beautiful Pleiades star cluster will be the only 6° away, and ruddy Aldebaran 14° away with background Hyades cluster nearby, all wonderful for unaided eye and binoculars! See timetable and illustration of eclipsed Moon against these stars. Rotate diagram to match orientation of Moon and stars in your local sky.

Two deep total lunar eclipses will occur in 2022. In U.S., the first will occur on evening of May 15, and the second in morning hours of November 8.

Uranus, dwarf planet Ceres, and Neptune: visit abramsplanetarium.org/mrsta/

Nov 20-28,
1 1/2 hours before sunrise

Nov 27, 7:28 a.m. EST

Nov 28, Mercury at superior conjunction

John S. French, Robert C. Victor
ISSN 0733-6314

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