

All night: Jupiter shines at peak brilliance, mag. -2.9, and is up all night in opposition on Sept. 21. Jupiter rises in E at dusk midtwilight early in month, and sets in W at dawn midtwilight at month's end. Using binoculars when Jupiter is well up in dark sky, look for 5.7-mag. **Uranus** nearby, 1.7° W of Jupiter on Sept. 1, narrowing to 0.8° N of Jupiter on night of Sept. 18-19, and still within 1.4° NNE of it on Sept. 30. Two **detailed finder charts** on this page depict **location of Uranus relative to Jupiter** on night of their closest pairing, after nightfall on Sept. 18 and before dawn on Sept. 19. A larger scale Uranus finder useful through Jan. 2011 appears at www.pa.msu.edu/abrams/jupura2010.pdf

Other planets at dusk: Venus this month is 45° to 35° upper left of setting Sun. But from mid-northern latitudes the ecliptic makes its smallest angle with the horizon annually in Sept., and further, Venus now appears 3° to nearly 7° S of the ecliptic. The result, from lat. 40° N, is that Venus is only 15° to 8° up in SW at sunset, and 8° to less than 2° up in WSW in midtwilight, and sets only 1.5 to 0.9 hours after sunset. Brightening from mag. -4.6 to a peak of mag. -4.8, Venus easily shows through low hazes; but look in daytime or at sunset for best telescopic view of the crescent, narrowing from 41 to 19 percent full while growing in size from 1/2 to 3/4 arcmin. across; binoculars! During Sept. 1-3, Venus, Mars, and Spica fit within a 5° field. Mars, faint at mag. +1.5, is low in WSW to UR of Venus all month. Mars is 4.5° from Venus on Sept. 1, widens to a max. dist. of 6.7° Sept. 18-23, and narrows slightly to a min. of 6.5° at month's end. Against stars Mars goes 2/3° per day, passing 2° N (UR) of brighter +1.0-mag. Spica on Sept. 5. **Saturn** finally sinks into W twilight glow in first two weeks. From lat. 40° N, the +1.0-mag. planet sets 1.1 hours after sunset on Sept. 1, to 0.7 hour after on the 13th. Look 21°-29° LR of Venus. In first week of Sept., Saturn sets 17-20 min. after Jupiter rises, allowing both to be seen simultaneously ~ 1° above opposite horizons, for last time until late October 2011.

Planets at dawn: Jupiter is brightest morning "star". At dawn midtwilight, it's nearly 30° up in WSW on Sept. 1, then sinks 1° lower daily until setting in W at month's end. **Mercury** emerges in twilight glow just N of E in September's 2nd week, brightening rapidly to mag. +1.0 by Sept. 13, mag. 0 by Sept. 17, mag. -1 by Sept. 26. During year's best dawn appearance, Mercury approaches within 6' below Regulus on Sept. 13, and climbs 8° up in midtwilight Sept. 17-23. Try for Mercury-Jupiter simultaneously until they reach mutual opposition on October 1.

Moon at perigee night of Sept. 7-8 (not visible); near planets evenings of Sept. 10, 11, 22. **Long-period variable Mira** (Omicron Ceti) reaches peak in October.

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Night Sky Notes on World Wide Web:

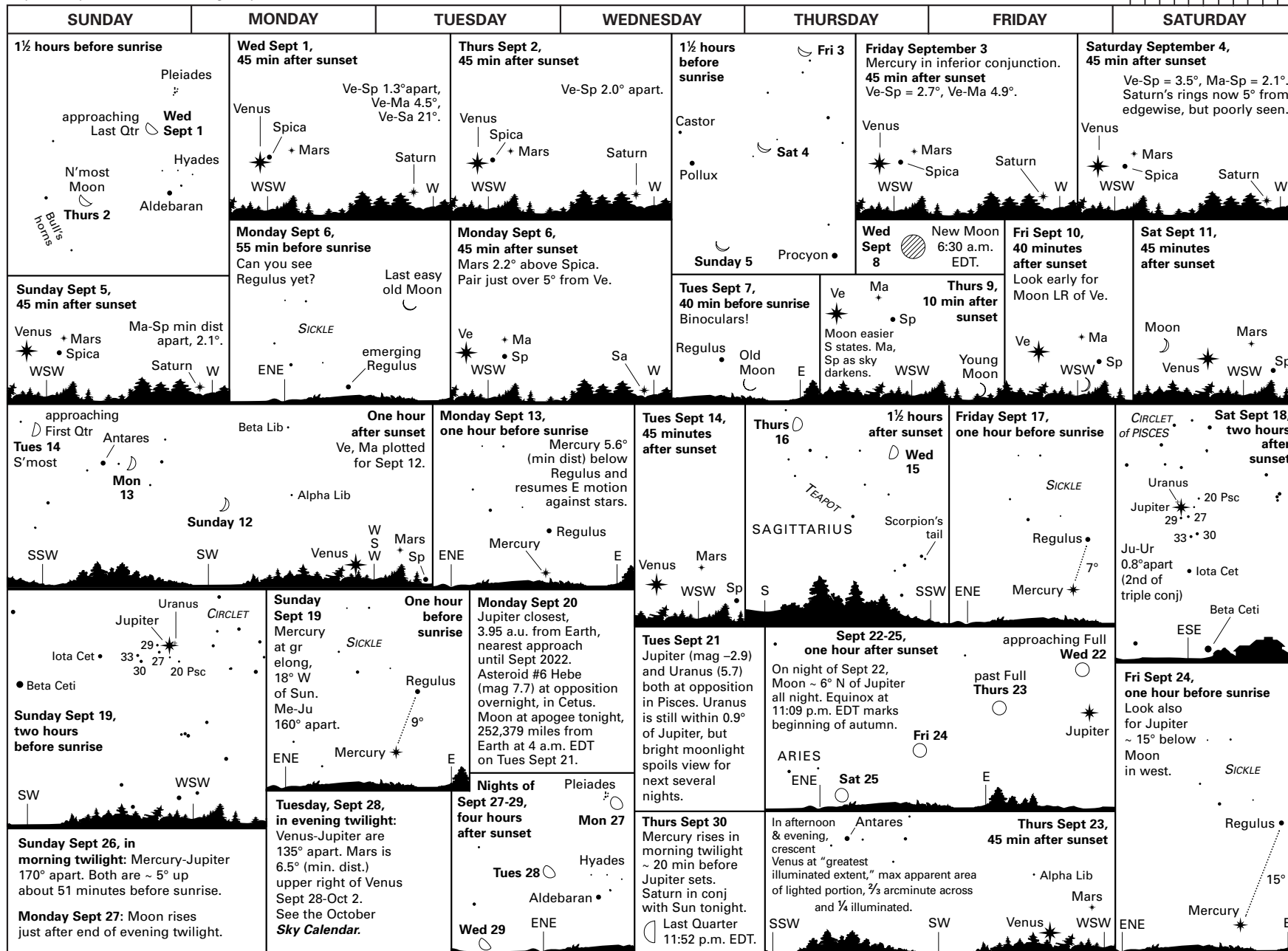
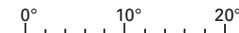
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SKY CALENDAR SEPTEMBER 2010

An aid to enjoying the changing sky

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



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ISSN 0733-6314

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September Evening Skies

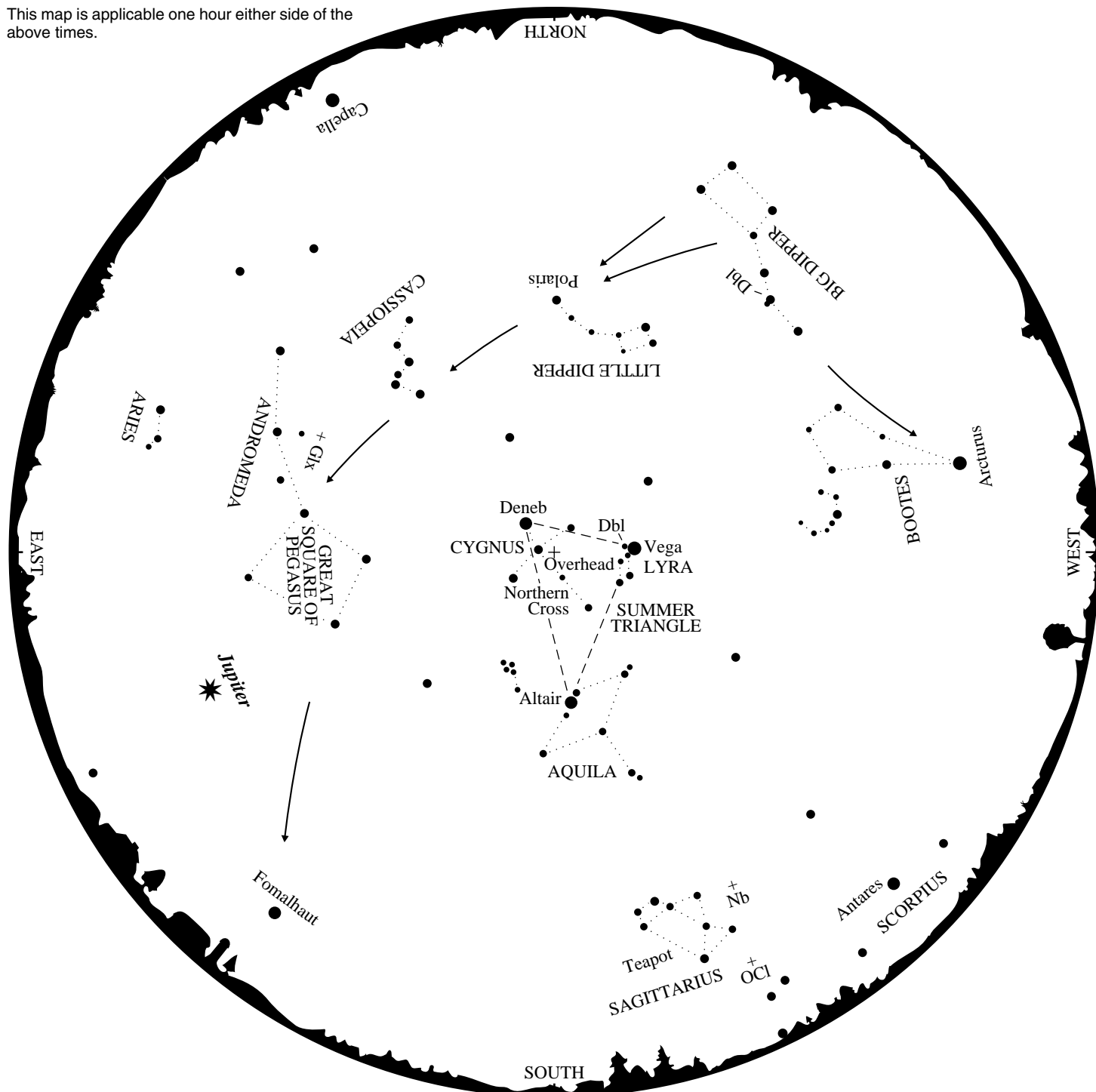
This chart is drawn for latitude 40° north, but should be useful to stargazers throughout the continental United States. It represents the sky at the following local daylight saving times:

Late August	11 p.m.
Early September	10 p.m.
Late September	9 p.m.

This map is applicable one hour either side of the above times.

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The planet Jupiter is plotted for mid-September 2010. At map time, eight objects of first magnitude or brighter are visible. In order of brightness they are: Jupiter, Arcturus, Vega, Capella, Altair, Antares, Fomalhaut, and Deneb. In addition to stars, other objects that should be visible to the unaided eye are labeled on the map. The double star (Dbl) at the bend of the handle of the Big Dipper is easily detected. Much more difficult is the double star near Vega in

Lyra. An open or galactic cluster (OCI) located below Sagittarius, low in the south-southwest, will challenge the unaided eye. Nearby, marked (Nb) above the "spout" of the "Teapot," is the Lagoon Nebula, a cloud of gas and dust out of which stars are forming. The position of an external star system, called the Andromeda Galaxy after the constellation in which it appears, is also indicated (Glx). Try to observe these objects with unaided eye and binoculars.

—D. David Batch