

Planets at dusk: Jupiter, near mag. -2.4 above handle of *TEAPOT* of Sagittarius, shines in SSE to S at dusk and is the only planet prominent after nightfall. See diagram for Sept. 5-9. **Venus**, near mag. -3.9, sets in progressively darker twilight. On Sept. 1, from lat. 40° N, it sets in W nearly an hour after sunset; on Sept. 30, in WSW nearly 1/4 hours after sundown. Using binoculars and diagrams on this page, let Venus lead you to nearby Mercury and Mars, and around midmonth, Spica. The planets Mercury-Venus-Mars form a **trio** (all within a 5° field) Sept. 3-18, at min. size 3.6° across Sept. 7 and 12. All diagrams showing Venus this month are drawn for lat. 34° N, where Venus appears higher and sets in a darker sky. The objects accompanying

Venus will be quite challenging to observe in twilight from northern U.S., but from all parts of the country, binoculars give best views. **Mercury** on Sept. 1 glows at mag. zero, 3.2° LL of Venus. Mercury lingers 3.6° LL of Venus Sept. 6-14. On the 14th Mercury-Venus have the last of their **quintuple conjunction** in celestial longitude in 2008, with a marginally smaller least separation on Sept. 12. Then Mercury starts pulling away from Venus, appearing 4.5° below the brilliant planet on Sept. 18 and increasingly to its LR thereafter. Mercury, faded to mag. +0.7, passes 2.1° below Spica on Sept. 23, visible in midtwilight from lat. 34° N and southward, and then fades sharply in following days. **Mars**, mag. +1.7, sets ever earlier in twilight, but brighter planets are handy to help you find it. On Sept. 1, the faint red planet is 6° to Venus' upper left. On Sept. 6 Mars is 3° UL of Venus and 2.5° (min. dist.) UR of Mercury. (The Mercury-Mars pairing is the first event of a quintuple conjunction between them; their final pairing will occur in the morning sky on March 2, 2009.) On Sept. 11 Mars is just 0.3° (min. dist.) LL of Venus. This is the first of a **triple conjunction** between Venus-Mars. Their 2nd and 3rd pairings will be easier to observe, in the morning sky in April and June 2009. On Sept. 24 Mars passes 2.3° (min. dist.) UR of Spica.

By late September, Venus and Jupiter will clearly dominate the early evening sky. Watch these two brilliant planets draw closer until their spectacular conjunction at the end of November. On Sept. 9 they're 90° apart; on Oct. 4, 60° apart. By Nov. 1, the gap between them closes to 30°. **Point out Venus & Jupiter to your children and to students and friends, so they can enjoy following the change until they close to just 2° apart on Nov. 30.**

Dawn: Saturn emerges above horizon not far north of east by three weeks into September, to LL of Regulus; see Sept. 21, 25-27. With less than a year until the rings' edgewise presentation, Saturn has already faded to mag. +0.9.

Planetarium business office:
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Night Sky Notes on World Wide Web:
<http://www.pa.msu.edu/abrams/nightskynotes/>

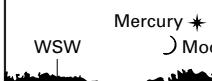
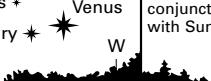
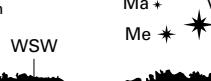
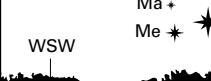
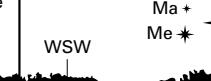
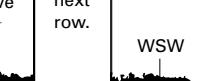
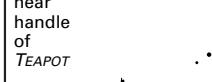
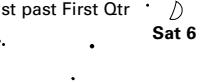
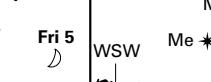
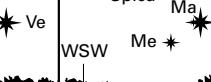
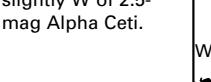
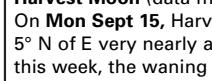
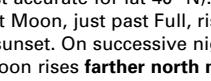
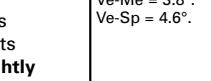
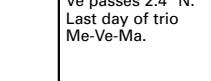
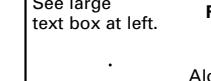
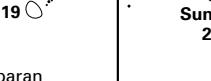
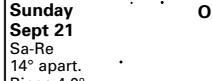
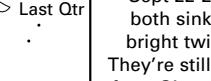
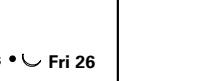
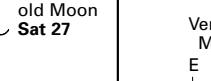
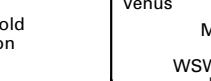
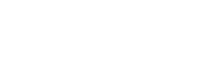
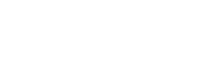
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SKY CALENDAR SEPTEMBER 2008

An aid to enjoying the changing sky

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

0° 10° 20°

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p>Mon Sept 1, 25 min after sunset For most of U.S., this is first easy sighting of lunar crescent marking start of Ramadan.</p> <p>Spica</p> 	<p>Tue Sept 2, 30 min after sunset All diagrams showing Venus this month are drawn for lat 34° N.</p> <p>• Spica Moon Mars + Mercury Venus</p> 	<p>Wed Sept 3, 30 min after sunset Me-Ve-Ma form a trio (fitting within a field no more than 5° across) Sept 3-18. Ve-Ma = 4.1°.</p> <p>☽ Moon • Spica Saturn in conjunction with Sun.</p> 	<p>Thurs Sept 4, 30 min after sunset Ve-Ma = 3.5°, forming isosceles triangle.</p> <p>• Spica Ma + Me Venus</p> 	<p>Fri Sept 5, 30 min after sunset Ve-Ma = 3.5°, forming isosceles triangle.</p> <p>• Spica Ma + Me Venus</p> 	<p>Moon Sept 5-9: See first box in next row.</p> <p>• Spica Ma + Me Venus</p> 	<p>Sat Sept 6, 30 min after sunset Me stays 3.6° from Ve</p> <p>• Spica Ma + Me Venus</p> 
<p>Jupiter ends retrograde</p> <p>○</p> <p>Mon 8</p> <p>S'most Moon</p> 	<p>Tues Sept 9, 30 min after sunset Ve-Ju 90° apart & closing. Ve-Ma = 1.2°.</p> <p>• Spica Ma Venus</p> 	<p>Wed Sept 10, 30 min after sunset Ve-Ma = 0.7°. Mercury at gr elong, 27° E of Sun.</p> <p>• Spica Ma Venus</p> 	<p>Thurs Sept 11, 30 min after sunset Ve passes 0.3° N (UR) of Ma. First of triple conj between them; see margin.</p> <p>• Spica Ma & Venus</p> 	<p>Fri Sept 12, predawn Asteroid # 4 Vesta (mag 7.2) begins retrograde 2.8° N and slightly W of 2.5-mag Alpha Ceti.</p> <p>Sp • Ma Venus</p> 	<p>Friday Sept 12, 30 min after sunset Ve-Ma = 0.6°. Ve-Me closest, 3.6° apart; see margin.</p> <p>Sp • Ma Venus</p> 	<p>Sat Sept 13, 30 min after sunset Ve-Ma = 1.2°. Ve-Sp = 7°.</p> <p>Sp • Ma Venus</p> 
<p>Harvest Moon (data most accurate for lat 40° N): On Mon Sept 15, Harvest Moon, just past Full, rises 5° N of E very nearly at sunset. On successive nights this week, the waning Moon rises farther north nightly and not much later each night. On Tues 16 enjoy the reddened Moon rising 13° N of E ~ 25 min after sunset. On Wed 17, it rises 21° N of E within an hour after sunset. On Thurs 18, Moon rises 28° N of E and 9° LL of 2nd mag Alpha in Aries around end of evening twilight. On Fri 19 the large perigee Moon rises 33° N of E about 2½ hours after sunset; this rising Moon occults stars in Pleiades cluster for E and central N America. On Sat 20 Moon comes up 36° N of E some 3.1 hours after sunset, and finally on Sunday 21, this month's northernmost moonrise takes place as the Last Quarter (half) Moon comes up 37° N of E, 4.2 hours after sunset.</p>	<p>Mon Sept 15, 30 min after sunset Ve-Ma = 2.2°. Ve-Me = 3.8°. Ve-Sp = 4.6°.</p> <p>Sp • Ma Venus</p> 	<p>Thurs Sept 18, 30 min after sunset Ve-Sp closest as Ve passes 2.4° N. Last day of trio Ve-Me-Ma.</p> <p>Ve Sp • Ma Venus</p> 	<p>Five hours after sunset Rising Moon & Pleiades: See large text box at left.</p> <p>Fri 19</p> 	<p>Sunday 21</p> <p>Pleiades</p> 	<p>Sat Sept 20, 30 min after sunset Ve-Ma = 5.0°. Ve-Sp-Me in st line 5.6° long.</p> <p>Aldebaran & Hyades</p> 	<p>Sat Sept 20, 30 min after sunset Ve-Ma = 5.0°. Ve-Sp-Me in st line 5.6° long.</p> <p>Spica Ma Venus</p> 
<p>Sunday Sept 21 Sa-Re 14° apart. Rings 4.0° from edge-on</p> <p>Regulus •</p> 	<p>One hour before sunrise</p> <p>Castor</p> 	<p>One hour before sunrise</p> <p>Tues 23</p> 	<p>Mon Sept 22 Moon in Gemini: See box below. Equinox 11:44 a.m. EDT. Autumn begins. Fading Mercury 2.1° (min. dist.) below Spica Sept 22-24, as both sink into bright twilight. They're still visible from S'most U.S., especially S Florida & S Texas, and Hawaii.</p> <p>Venus</p> 	<p>Wed Sept 24, 30 min after sunset Mars passes 2.3° N of Spica. From S states, using binoculars, look ~ 7° LR of Venus.</p> <p>Regulus •</p> 	<p>Sept 25-27, one hour before sunrise Saturn 15° E of Regulus Sept 27 & 28.</p> <p>Regulus •</p> 	<p>Sunday Sept 28, 30 minutes before sunrise Binoculars may show very old Moon just risen 12° below Saturn.</p> <p>Regulus •</p> 
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