

September 2011 Sky Events – the Planets

- ★ **Saturn** is lost in the evening twilight this month as it approaches its conjunction with the Sun next month.
- ★ There are no other naked-eye planets to observe immediately after sunset this month.
- ★ **Jupiter** rises in Aries around 10:40 p.m. on September 1st and 8:40 p.m. at month-end. It is **growing in size and brightness** as it approaches “opposition” (opposite the Earth from the Sun) in October 2011.

September 2011 Sky Events – the Planets

- ★ Neptune, just past its August “opposition” (opposite the Earth from the Sun), will be visible at magnitude 7.8 through a telescope in the sky all night in the constellation Aquarius.
- ★ Uranus, shining at magnitude 5.7, reaches “opposition” (opposite the Earth from the Sun) on the night of September 25/26. It rises around 9 p.m. as the month begins and around 7 p.m. at month end. It may be found with a telescope in the constellation Pisces.
- ★ This month is a great time to observe both Uranus and Neptune.

September 2011 Sky Events – the Planets

- ★ **Mars** can be found during the month **in the constellations Gemini and Cancer**. It does not rise until about 2 to 3 a.m.
- ★ In the pre-dawn hours on the nights of Sept. 30th through Oct. 2nd, the orange disk of the planet **Mars crosses in front** of the brilliant white stars **of the Beehive Cluster (M44)** in Cancer.
- ★ View this event with binoculars or a small telescope.
- ★ This conjunction will be at its best on the morning of Oct. 1st. The October version of this Sky Events will highlight that juxtaposition.

September 2011 Sky Events – the Planets

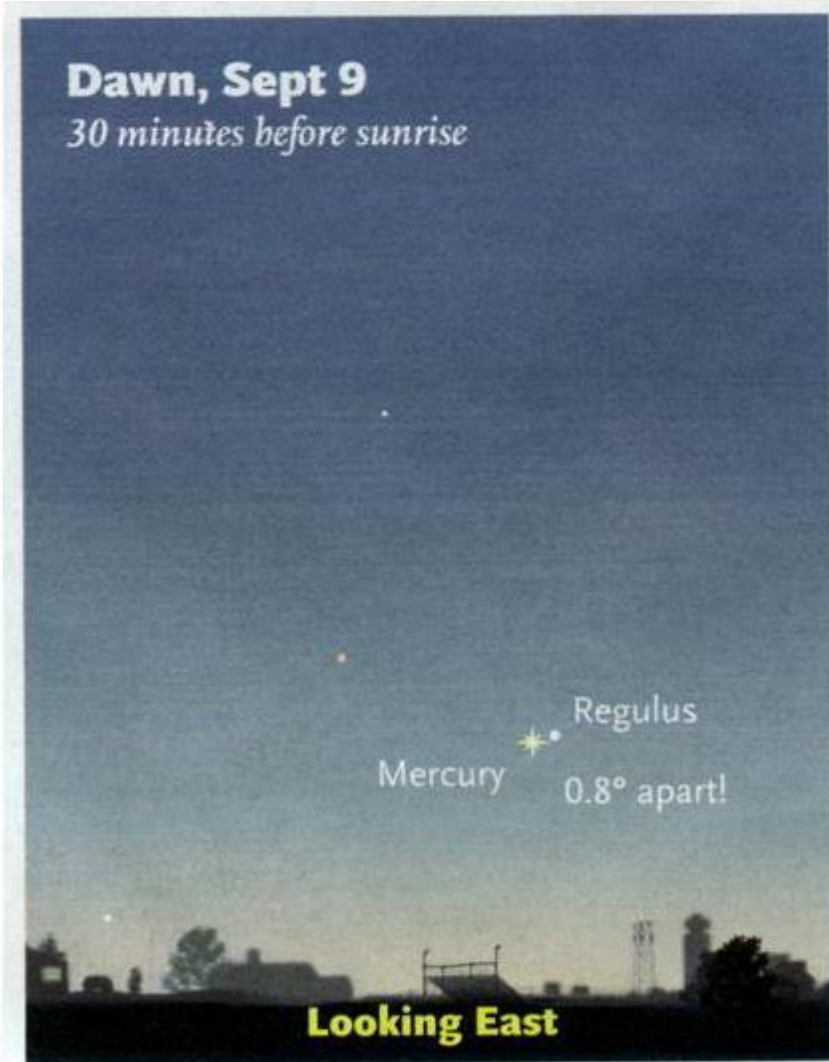
- ★ Although Venus moves into the evening sky this month, it is lost in the Sun's glare at dusk.
- ★ Mercury reaches greatest elongation west of the Sun on September 3rd, when it will be about 17° above the eastern horizon at dawn.
- ★ On September 3rd, Mercury rises (at magnitude -0.22) about 1½ hours before the Sun, and its 7.2 arc-second-wide disk appears 46% illuminated in telescopes.
- ★ During the first 10 days of September, Mercury is very favorably positioned for observing.

September 2011 Sky Events –

Mercury passes the star Regulus in Leo

- ★ Mercury (at mag. -0.9) outshines the bright star Regulus (at mag. 1.3), as our solar system's innermost planet passes very nearby our line of sight with the bright but distant star – some 78 light years away.

Image courtesy of Sky & Telescope



September 2011 Sky Events

Harvest Moon and the Autumnal Equinox

- ★ Autumn begins in the northern hemisphere at the **Equinox on September 23rd** (5:05 a.m. EDT).
- ★ This year's **Harvest Moon** is the **September 12th** Full Moon.
- ★ The annual **Harvest Moon** is defined as the **full Moon that occurs nearest the Autumnal Equinox**.
- ★ Thus, the Harvest Moon can occur before or after the Equinox, and it could even occur in October!

Sept. 2011 Planet Highlights

<u>Planet</u>	Avg. Distance from Earth	Constellation(s)	Avg. Diameter in arc seconds	Avg. Magnitude	Comments
Saturn	10.5 AU_s	Virgo	15.8 but 37 with rings	0.8	Sets too early to observe well
Mercury	1.2 AU_s	Leo & Virgo	5.5	-1.1	Find it in the dawn sky in early month
Jupiter	4.2 AU_s	Aries	46.5	-2.7	Rises about 8:40 p.m. at month end

Sept. 2011 Planet Highlights

<u>Planet</u>	Avg. Distance from Earth	Constellation(s)	Avg. Diameter in arc seconds	Avg. Magnitude	Comments
Venus	1.7 AU _s	Leo & Virgo	9.8	-3.9	Not easily visible this month
Mars	1.9 AU _s	Gemini & Cancer	4.9	1.4	In the eastern pre-dawn sky
Uranus	19 AU _s	Pisces	3.7	5.7	At opposition on Sep. 25/26

Sept. 2011 Planet Highlights

<u>Planet</u>	Avg. Distance from Earth	Constellation(s)	Avg. Diameter in arc seconds	Avg. Magnitude	Comments
Neptune	29 AU _s	Aquarius	2.3	7.8	Great observing position this month

The Moon this month – September 2011

☾★ First Quarter – 4th at 1:39 p.m.

☾★ Full Moon – 12th at 5:27 a.m. → **Harvest Full Moon**

☾★ Last Quarter – 20th at 9:39 a.m.

☾★ New Moon – 27th at 7:09 a.m.

Unless otherwise indicated, all times are EDT

Friday evening, Sept. 30th

Monthly club stargaze at Mt. Pisgah

- ★ **Sunset:** 7:16 p.m. EDT
- ★ Don't forget to observe the 17% illuminated **waxing crescent Moon** in the constellation Libra – low in the SW at sunset.
- ★ There are no “naked-eye” planets visible early in the evening.
- ★ **Jupiter** rises in Aries about 9:00 p.m. tonight, but it won't look good in a telescope until about 11:00 p.m..
- ★ This would be a good night to locate and observe the 2 most distant solar system planets (**Uranus and Neptune**), the closest dwarf planet (**Ceres – also the largest asteroid**) and the brightest asteroid (**Vesta**).

Friday evening, Sept. 30th

Monthly club stargaze at Mt. Pisgah

- ★ All 4 of these solar system objects are well above the SE horizon by 9:00 p.m..
- ★ To observe these 4 objects you will need a telescope along with a good location chart, digital-setting-circles, and/or a go-to telescope.
- ★ You will find Uranus in the constellation Pisces, Neptune and Ceres in the constellation Aquarius (although some 25° apart), and Vesta in the constellation Capricornus.
- ★ For those of you staying very late, find **Mars in front of the Beehive star cluster** in the pre-dawn skies.
- ★ Look too for the **Zodiacal Light** in the pre-dawn skies!

September 2011 Highlight: Zodiacal Light

- ★ September and October are the months to find the elusive “zodiacal light” in the pre-dawn sky.
- ★ But what is the zodiacal light?
- ★ Zodiacal light is the sunlight reflected from numerous dust grains located along the plane of the solar system → the ecliptic or “zodiac”.
- ★ These dust grains are left over from the formation of the solar system (a type of cosmic dust), and their supply is continuously fed by particles from comets and asteroid collisions.
- ★ The morning ecliptic is nearly vertical to the horizon these months providing good viewing opportunities.

September 2011 Highlight: Zodiacal Light

- ★ Zodiacal light is seen as a “cone” of light widest at the horizon.
- ★ Look for it **low in the east** (with an unobstructed view) beginning about 2 hours before sunrise.
- ★ Pick a **very dark location** far from artificial lights and **without moonlight**.
- ★ In the fall, when it is visible in the morning sky, it is often called the “**false dawn**”.
- ★ The viewing window closes about 80 minutes before sunrise.



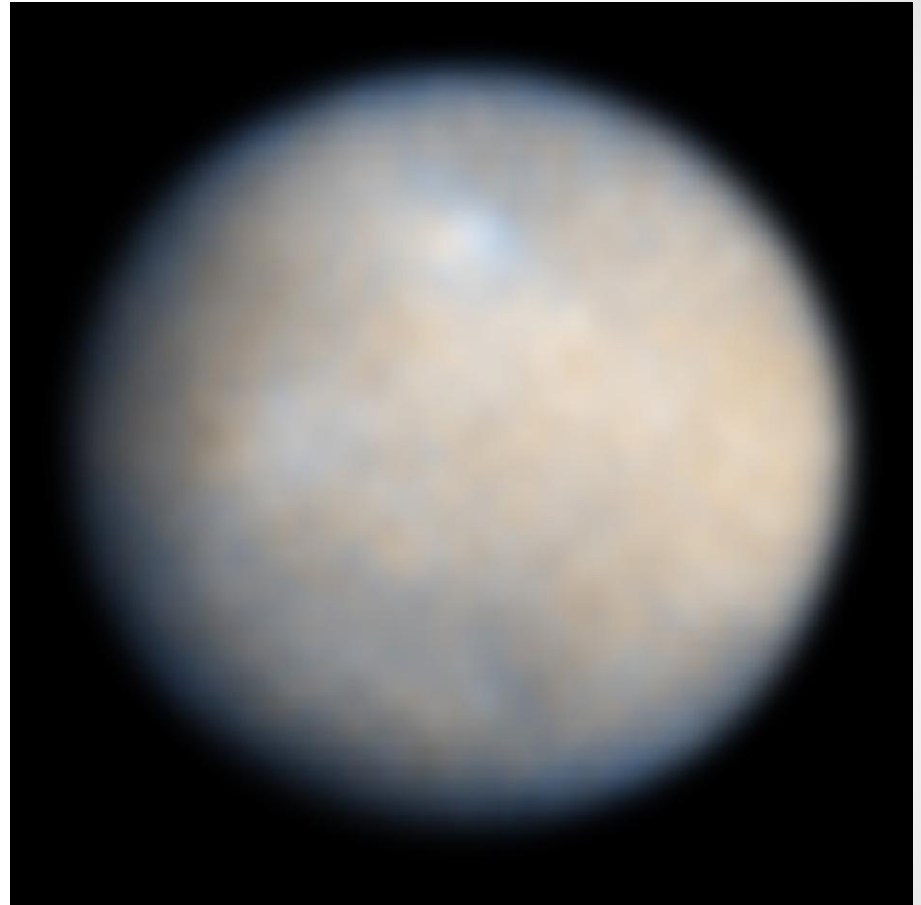
September 2011 Highlight:

Asteroid Ceres at "opposition"

- ★ Asteroid "1 Ceres" (1st asteroid discovered) is the largest asteroid with a diameter of 950 kilometers (590 miles) and the only dwarf planet in the inner solar system.
- ★ Ceres was discovered January 1, 1801 by Sicilian astronomer Guiseppe Piazzi.
- ★ It rotates about its axis in 9.08 hours. Its orbital period is 4.6 years.
- ★ Ceres is the guardian of plants (origin of the word "cereal") in Roman mythology.
- ★ Due to its low albedo (reflectivity), Ceres is not the brightest asteroid, despite containing about one-third of the entire asteroid belt's mass. Two other main-belt asteroids shine brighter than Ceres: Vesta and Pallas.

September 2011 Highlight: Asteroid Ceres at "opposition"

- ★ Ceres reaches "opposition" (opposite the Earth from the Sun) on September 16th at magnitude 7.2.
- ★ You will need a telescope to see it and a location chart, digital-setting-circles and/or go-to control.
- ★ Located in the **asteroid belt** between the orbits of Mars and Jupiter – about 2.0 AUs away.



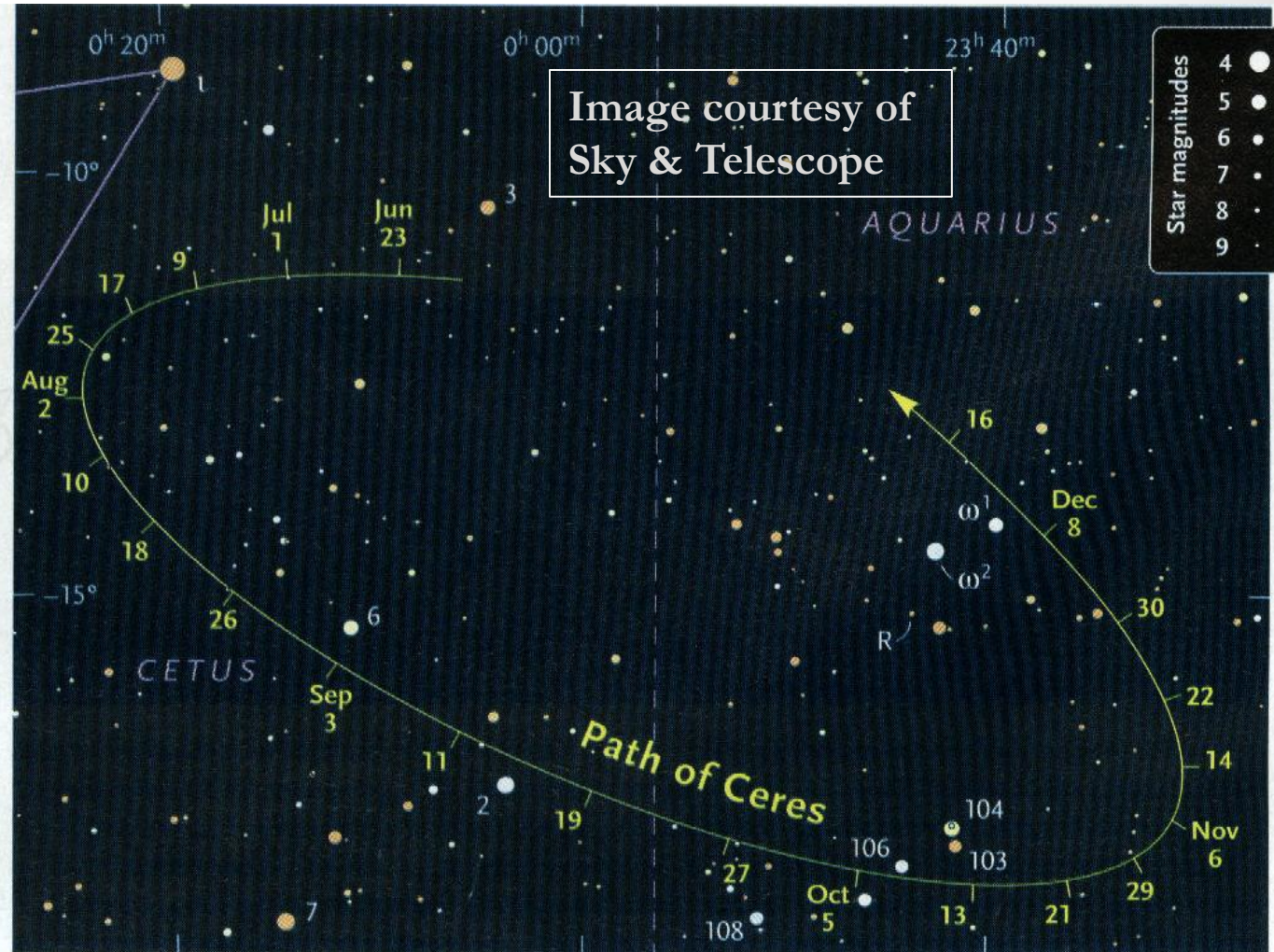
Ceres as seen by Hubble Space Telescope. The contrast has been enhanced to reveal surface details.

September 2011 Highlight: Asteroid Ceres at "opposition"

Location

Chart:

Find 7.2 mag.
Ceres in the
constellations
Cetus and
Aquarius.



September 2011 Highlight:

A fine double star for small telescopes

- ★ Star “1 Pegasi” is a wonderful double star for small telescopes.
- ★ Located 154 light years away, this colorful pair of 4.2 and 7.6 magnitude stars are separated by a wide 36 arc seconds.
- ★ This is not a true binary pair, but an interesting contrast in brightness – the brighter star is noticeably yellow.
- ★ Located about 8° north of the globular star cluster M15.
- ★ Coordinates: RA 21h 22m and DEC $+19^\circ 48m$

September 2011 Highlight: Coathanger cluster in Vulpecula

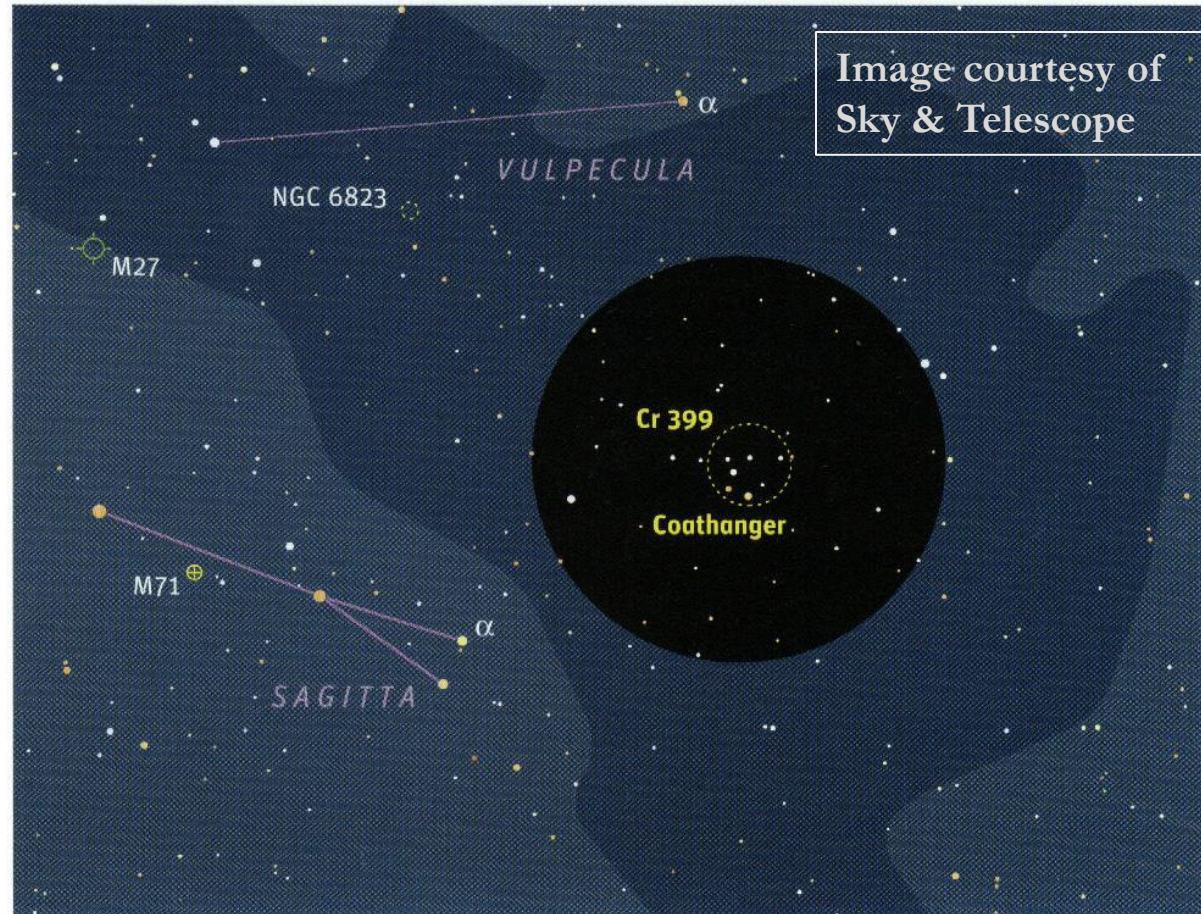
- ★ Located in the constellation of Vulpecula (the Fox) is a lovely grouping of stars commonly referred to as the “coathanger” cluster.
- ★ Despite its appearances, this is not a true cluster but a chance alignment of stars that are actually at very different distances – an “asterism”.
- ★ This asterism is made up of 10 stars ranging from 5th to 7th magnitude which form the conspicuous "coathanger", a straight line of 6 stars with a "hook" of 4 stars on the south side.

September 2011 Highlight: Coathanger cluster in Vulpecula

★ Also known as
Brocchi's cluster, Al
Sufi's cluster and
Collinder 399

★ This is a great
object for binoculars
or a small telescope
at very low power,
extending $1\frac{1}{2}^\circ$ across.

★ The 10 cluster stars
range from 200 to
1,100 light years
away.



Coordinates: RA 19h 26m and DEC +20° 06m

September 2011 Highlight: Coathanger cluster in Vulpecula

NGC 6802 – an 8th mag.
open star cluster some
3,600 light years away

Notice NGC 6802 off one end of the “coathanger”



End