

Biblical Astronomy

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NEW MOON REPORT

Nehemia Gordon from Jerusalem, Israel compiled the following New Moon Report for the month of August 2008 and the beginning of the Fifth Month of the Biblical Calendar.

“On Saturday August 2, 2008 the New Moon was sighted from Israel. The moon was seen from Ashdod by Magdi Shamuel at about 19:48 and remained visible for two minutes.

We have received further reports that the new moon was sighted on Saturday August 2, 2008 from Maale Adumim, Efrat, Ofra, and Alon Shevut. This confirms the report received just after Shabbat.”

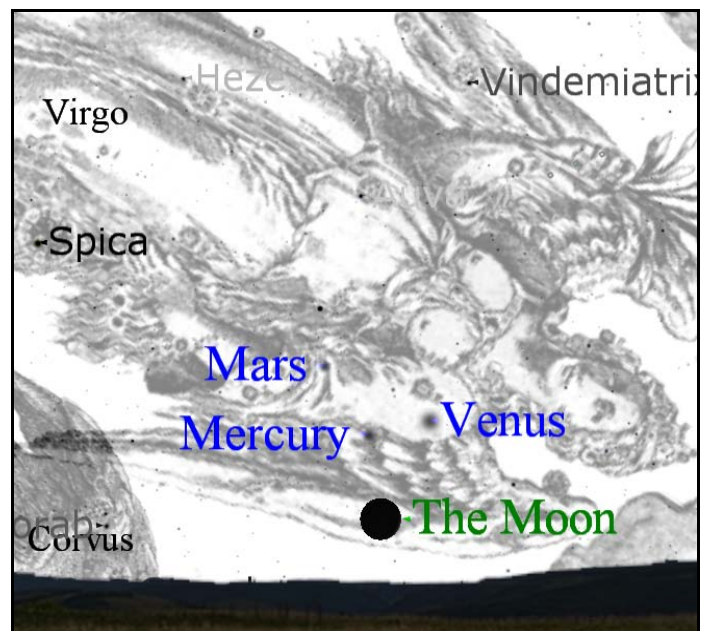
The next new moon should be observable from Jerusalem near sunset on September 1, 2008 when it will be 4% illuminated and 7° above the horizon at five minutes past sunset.

The first crescent light of the new moon on September 1, 2008 will be seen (from Jerusalem) just below the massing of the planets Venus, Mars and Mercury in the constellation *Bethulah* (*Virgo*). *Nogah* (*Venus*) is the bright and morning star; *Adom* (*Mars*) represents the archangel Michael, and *Catab* (*Mercury*) represents the archangel Gabriel. The constellation *Bethulah* represents the faithful of the Twelve Tribes of Israel and the woman of Revelation 12. She will be clothed with the sun and the moon will be below her feet on Tishri 1 this year, which falls on October 1st. There will be more on that event in the upcoming September/October 2008 issue of *Biblical Astronomy*.

This event of the massed planets with the first crescent light of the new moon amongst them is a prelude to a grand massing of all five of the bright planets with the new moon in their midst that will occur on Tishri 1 (September 8), 2040. That event will be a once in 26,000 to 52,000 year event

with such an event occurring in Bethulah on the First Day of the Seventh Month.

The chart below is a display of the massing of the planets Venus, Mars and Mercury along with the New Moon on September 1, 2008.



The new moon will be in conjunction with each of the three planets over an 11-hour period on September 1/2. Each will be visible from some point on Earth. The moon will pass 5° south of Venus at 5 pm EDT, 3° south of Mercury at 7 pm EDT, and 5° south of Mars at 4 am EDT.

Nogah, Adom and Catab will be more equidistantly massed on September 2 along with the bright crescent moon. The planets will come into at least three equidistant massings in September and will continue to put on a splendid display as they also come into a total of five conjunctions from August 23 through September 19, 2008. The above three planets will be dancing like they are at the grand ball.

One of the reasons there will be so many conjunctions over such a short period of time is that

Catab (Mercury) will be in retrograde motion. As it slows down and speeds up (relative as to how we see it from Earth) as it goes through its retrograde loop, *Nogah (Venus)* will pass it and then *Catab* will pass *Nogah* and will also do a back and forth with *Adom (Mars)*. *Nogah* will also pass *Adom*.

Chart 470 shows the path and retrograde loop of *Mercury* through *Bethulah* from August 22 through November 8, 2008.

NOGAH-CATAB CONJUNCTION ON 8-23-08

Nogah and *Catab* will come into conjunction in the early evening sky in the constellation *Arieh (the Lion of the Tribe of Judah)* on August 23, 2008. They will come to within 1.2° of each other at their closest approach.

Chart 471 shows the position of the two planets as seen from Jerusalem in the constellation *Arieh (Leo)* at the time of conjunction. The orange lines on the chart are the celestial grid. The vertical lines are the celestial longitude lines. The Astronomical definition of a conjunction is when two or more celestial bodies are in the same celestial longitude.

NOGAH-CATAB CONJUNCTION ON 9-11-08

Nogah and *Catab* will come into another conjunction in the early evening sky on September 11, 2008 but this time in the constellation *Bethulah (Virgo)*. They will pass a relatively far 4° from each other at their closest approach here, but are still in the same celestial longitude, which defines a conjunction.

Chart 472 shows the position of *Venus* and *Mercury* in the constellation *Bethulah* as seen from Jerusalem at the time of conjunction.

NOGAH-ADOM CONJUNCTION ON 9-11-08

Nogah will also come into conjunction with *Adom (Mars)* on September 11, 2008. This will occur about 17 hours after its conjunction with *Catab*. To the naked eye, all three appear to be in conjunction at the same time with the first conjunction (see **Chart 472**).

Chart 473 is a zoomed in view of *Nogah* and *Adom* at the time they pass conjunction. This will be a very close conjunction with the two planets passing within 0.3° from each other at their closest approach.

ADOM-CATAB CONJUNCTION ON 9-12-08

Adom (Mars) and *Catab (Mercury)* will come into conjunction on September 12, 2008 in the early evening sky in the constellation *Bethulah*. The two planets will be 3° from each other at their closest approach.

Chart 474 shows the positions of *Mars* and *Mercury* in *Virgo* at the time of conjunction. The large fuzz ball to the left of *Mars* is *Venus*. I left the constellation picture off here for clarity.

ADOM-CATAB CONJUNCTION ON 9-19-08

The final conjunction in this amazing series of conjunctions is another *Mars* and *Mercury* conjunction on September 19, 2008 when the two planets will pass 4° from each other.

Chart 475 shows the positions of *Mars* and *Mercury* in *Bethulah* at the time of conjunction.

Considering such an amazing display of massings and conjunctions in *Bethulah* – the woman of Revelation 12 – along with the celestial events over the past months leading up to this, I would say that the Tribulation Alert should be elevated from Yellow to Orange, especially since the woman will be clothed with the sun and the moon under her feet this upcoming Day of Trumpets or Day of Shouting.

We will just have to wait and see if the Tribulation Alert is elevated from orange to red (Tribulation actually beginning) over the following weeks.

I could fill in the rest of this newsletter with my speculation concerning these events but that would take the fun out of your own speculation or the understanding that Yahweh will convey to you over these matters. So I will leave it to that.

For those of you who get the newsletter online, the pdf file has some real neat features in it. You may or may not be aware of this but you can zoom in on any part of the newsletter you wish to zoom in on using the Marquee Zoom feature. Just place the mouse cursor over the page and click the right button. When the popup menu appears, select the Marquee Zoom feature by clicking on it with the left mouse button. Then just place your mouse cursor over the area you want to zoom in on and click the left mouse button until you get your desired zoom. This works great for the charts.

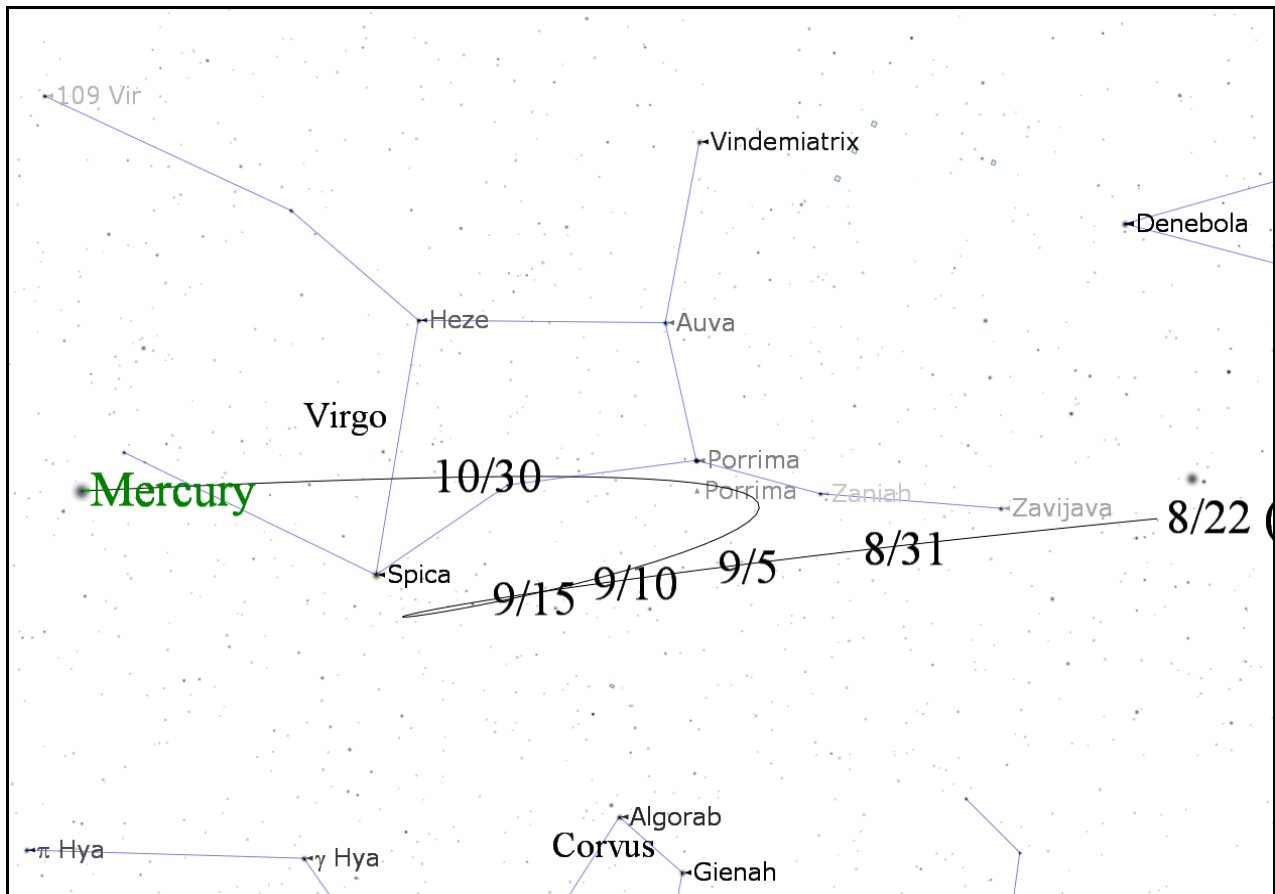


Chart 470 – Retrograde loop of *Catab* through *Bethulah* from 8/22/2008 to 11/8/2008

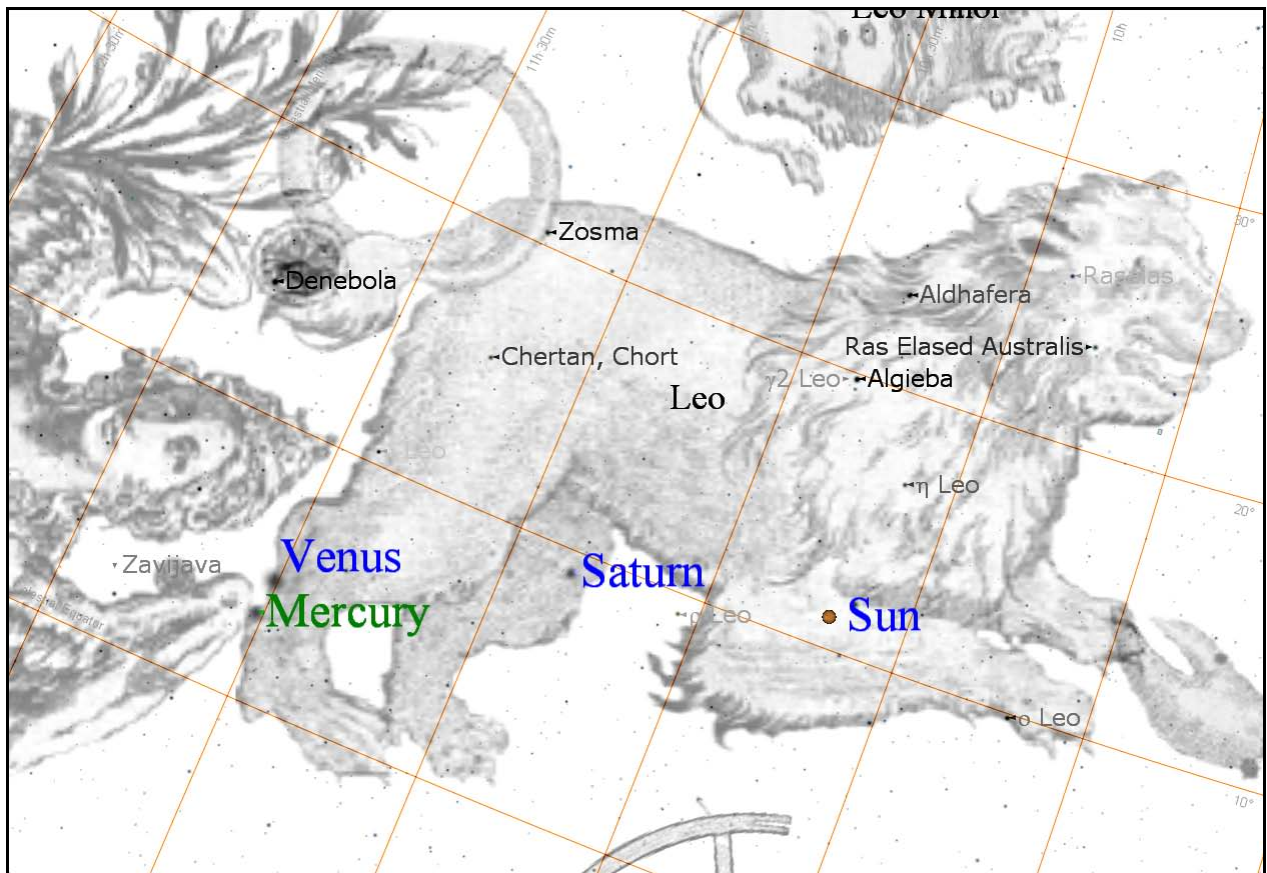


Chart 471 – Conjunction of Venus and Mercury as seen from Jerusalem on August 23, 2008

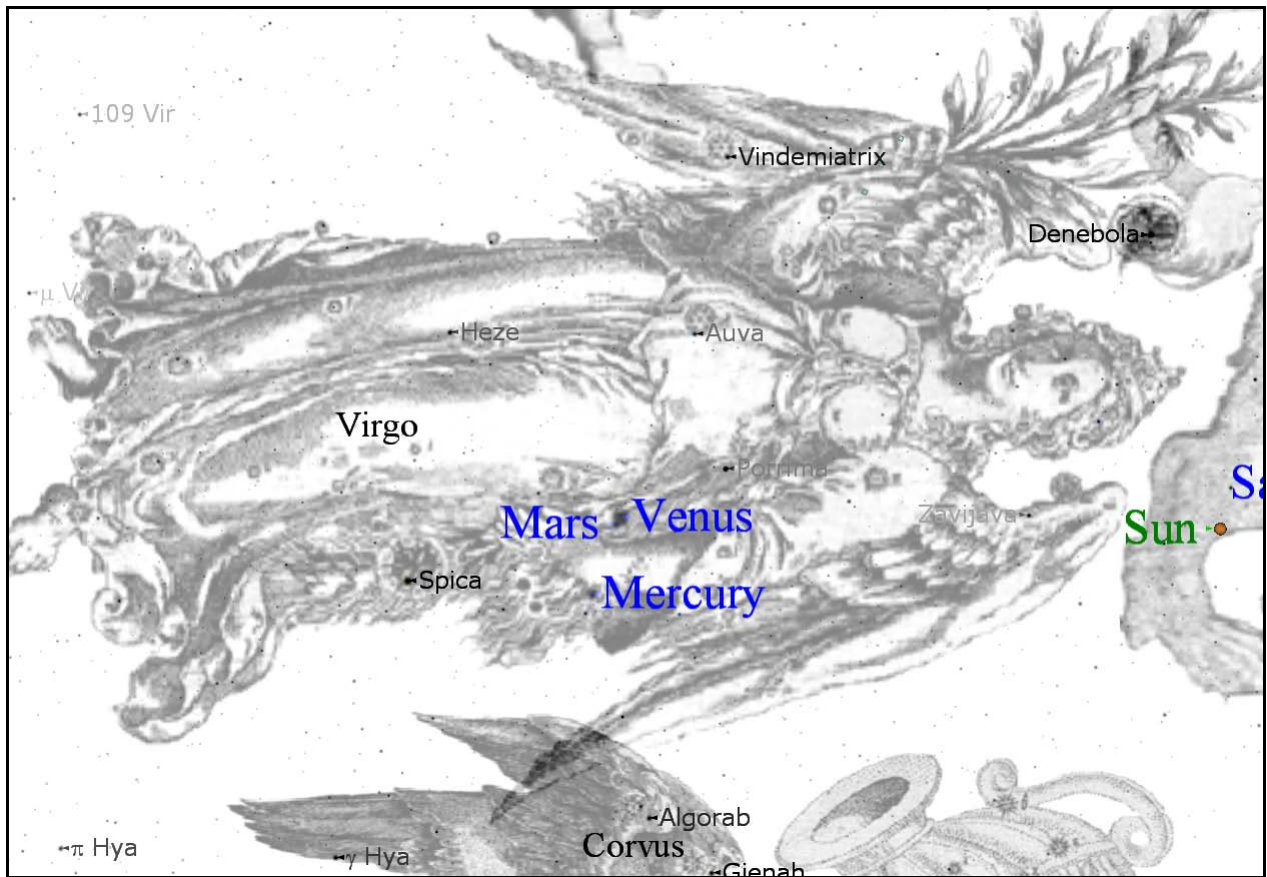


Chart 472 – Venus-Mercury conjunction as seen from Jerusalem on September 11, 2008

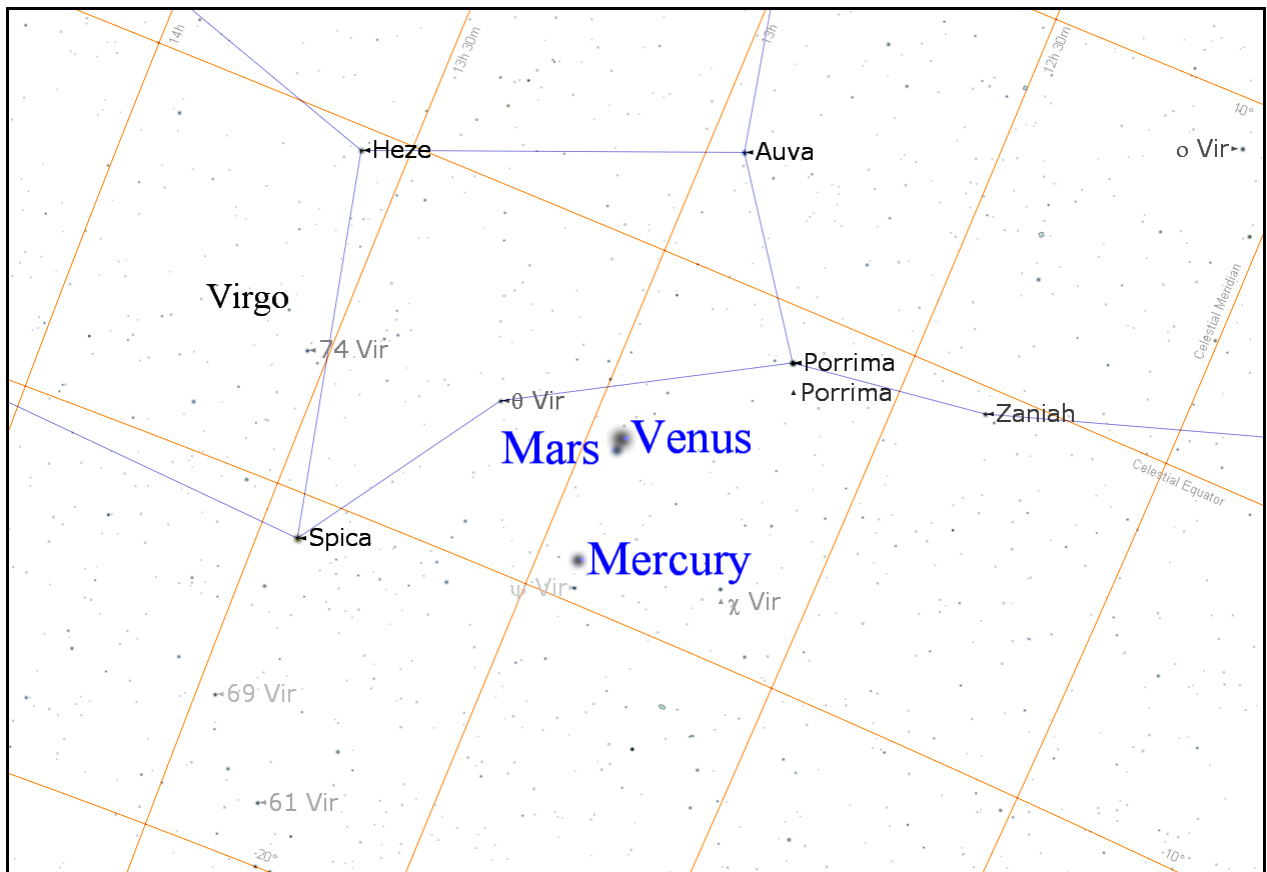


Chart 473 – Close conjunction of Venus and Mars in Bethulah on September 11, 2008

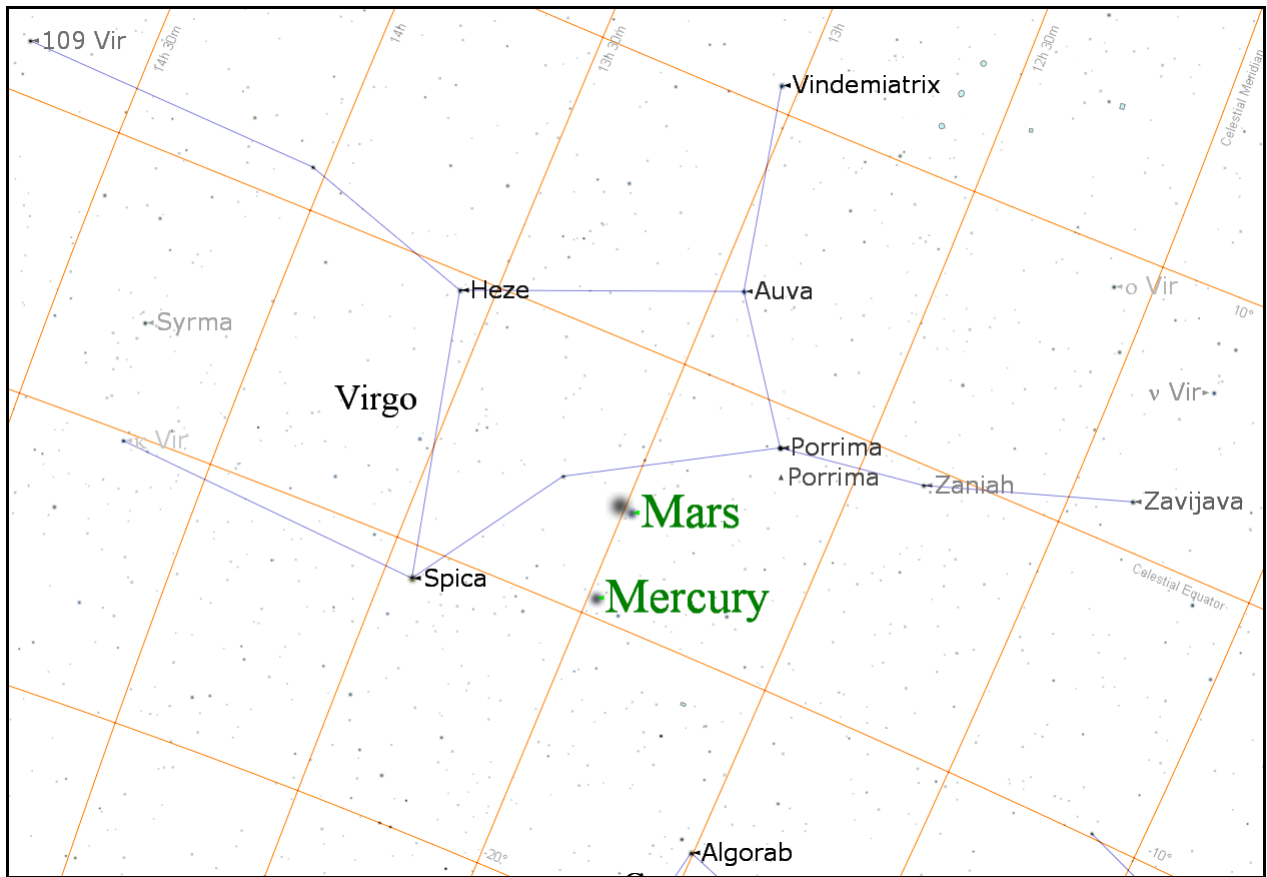


Chart 474 – Mars and Mercury in conjunction on September 12, 2008

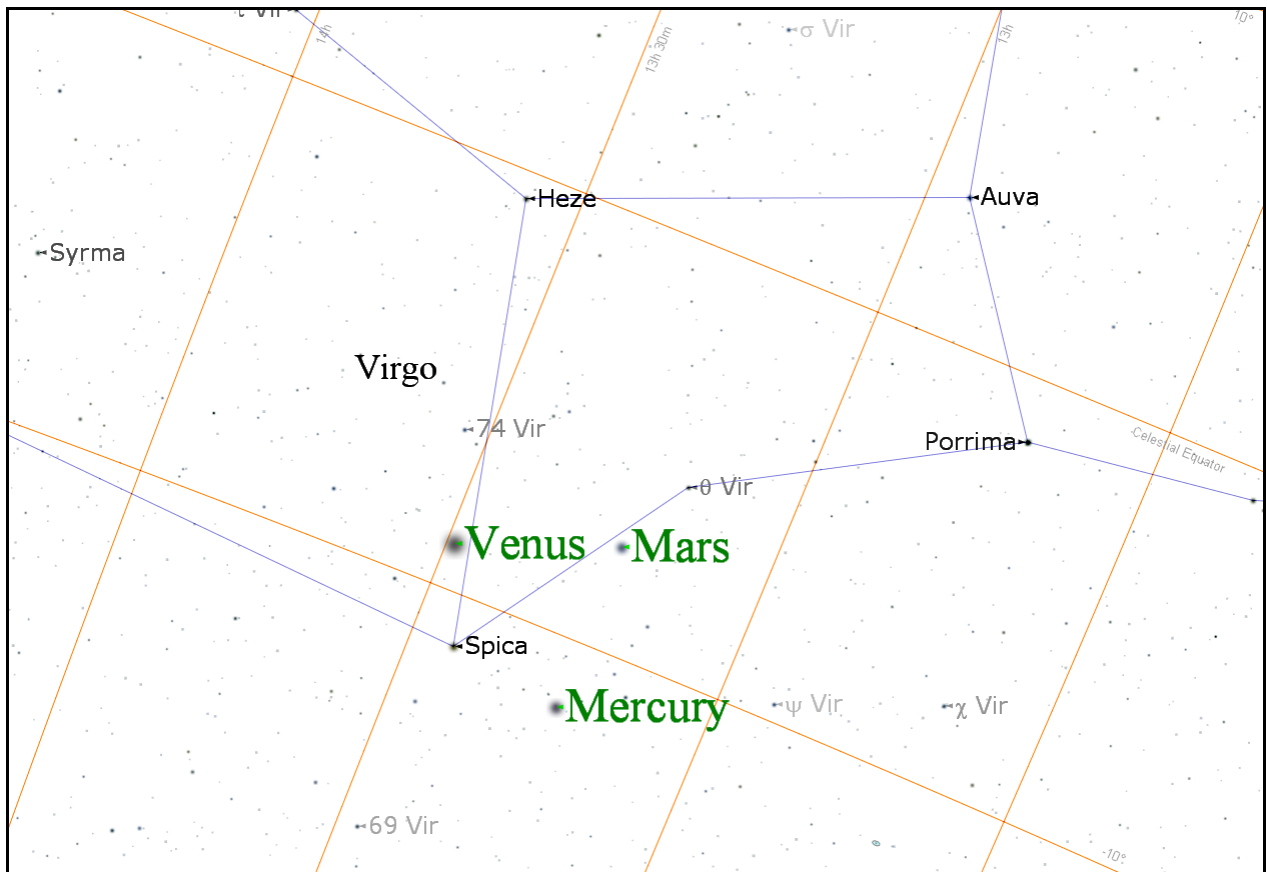


Chart 475 – Mars and Mercury in conjunction on September 19, 2008

ETA CARINAE UPDATE

The first article I did on the star Eta Carinae, which is in the ancient constellation *Argo (the ship)*, was in the June 1999 issue of *Biblical Astronomy*. I have given updates on it from time to time since then. See the June 1999 issue as well as the November 1999, June 2000, November 2002, and August 2004 issues of *Biblical Astronomy* for updates and articles on the star Eta Carinae and the constellation Argo to get up to speed on the subject and to learn of the Biblical meaning of the star and constellation. I also speak of this star and constellation in the *Biblical Astronomy DVD Set*.

The following article on Eta Carinae is by Camille M. Carlisle and was posted on a Sky and Telescope website on August 1, 2008.

Eta Carinae Prepares for X-ray Crash

Eta Carinae is one of the weirdest stars in the Milky Way. It shines with 5 million times the Sun's luminosity and spits out the equivalent of Jupiter's mass in its stellar wind each year. (The Sun would unravel itself in a millennium if it spewed out so much stuff.) It's also one of the galaxy's most massive stars at roughly 100 solar masses — even after its "Great Eruption" in the 1840s, in which it ejected at least 10 times the Sun's mass into space.

There's something strange going on with the light that travels 7,500 light-years to us from Eta Car, too. Changes in the star's spectra are heralding a significant event in January 2009, which may settle once and for all whether Eta Car has a massive, unseen stellar companion.

Eta Car's spectra undergoes a 5½-year cycle. Since Augusto Damineli (University of São Paulo, Brazil) first discovered it more than a decade ago, scientists have argued over why this regular period exists. Most now favor an undetected stellar binary companion as the instigator — the key word there being *undetected*. Astronomers have never managed to find it because the Homunculus Nebula surrounding Eta Car prevents good observations and Eta Car itself is so bright that it blinds instruments to anything nearby.

Equally peculiar is that the star's X-ray emissions abruptly disappear for a few months during every cycle. This drop happens with a disturbing regularity, recurring as predicted in 1997 [and 2003](#). As the next "X-ray crash" approaches this January, a team led by Kris Davidson (University of Minnesota) has confirmed an unusually intense line in Eta Car's spectra using the 8-meter Gemini South telescope in Chile. The scientists suggest that the feature supports the binary-companion theory and also may indicate additional mass ejection from the star.

Specifically, the astronomers detected an increased intensity in a line they think occurs when a helium atom has first lost *both* of its two electrons and then regains one. There are multiple energy levels within an atom at which an electron can exist, and as this captured electron falls down to a lower energy level from a higher one it emits light with a very particular wavelength, which scientists measure as a spectral line.

Often these "recombination lines" appear in spectra from stars with very hot, strong stellar winds. Yet for many years, Eta Car observers didn't see He II features (He II is

helium missing an electron). When they finally did spot a He II line in 2003, the line was strongest around the time of the X-ray drop, says team member John Martin (University of Illinois at Springfield) — and is the exact same line the astronomers see now.

Scientists still don't know how much of Eta Car's weirdness results from the star's intrinsic properties and how much from the influence of its presumed companion. The X rays themselves may arise from a shock front created when Eta Car's wind collides with that of its unseen companion. As it travels around the primary in a highly elongated orbit, the companion star's wind carves out a three-dimensional version of a speedboat's bow shock, explains Michael Corcoran (NASA/Goddard). The high energies produced in this collision suggest that both winds are hot and dense and that the companion is a massive, hydrogen-burning *O* star — although nowhere near as heavy as Eta Car.

So why do these X rays periodically disappear? Nathan Smith (University of California, Berkeley) suggests that as the companion swings close by Eta Car, it disrupts the primary's stellar wind. This event throws Eta Car's outflow into chaos, and it takes a few months to rebuild itself.

Another possibility is that the thick, slower wind coming off Eta Car's equatorial region engulfs the companion star at its closest approach, says Corcoran. It's rather like how the bow shock bends around the speedboat when it makes a fast turn.

But the strong He II emission hints that there's something else going on besides the winds' crash, Martin says. "In order to get this kind of He II line, you need to ionize helium twice, which takes *a lot* of energy." And although X rays are highly energetic, Martin and his colleagues don't think the winds' collision emits enough energy to completely explain the spectral features.

Martin suggests that higher energy levels could arise if Eta Car throws off a lot of material from its equator as the companion approaches. This material would impact the shock front, boosting the clash's effect. And indeed you would expect a rapidly spinning object to fling material off at its equator, says Smith. But it remains unknown whether the companion's close passes have some tidal influence on Eta Car's abnormally high rotation speed.

Eta Car also tantalizes those who model star formation in the early universe, since scientists think that such enormous stars peppered space at that time. Naoki Yoshida (Nagoya University, Japan) and Lars Hernquist (Harvard-Smithsonian Center for Astrophysics) [recently presented results](#) from computer models suggesting that stars 100 times the Sun's mass appeared early after the Big Bang and formed relatively easily. As few stars currently exist on such a scale (compared to the number of less massive stars), observations of Eta Car may elucidate the hows and whys of those first giants. The team's paper appears in last Friday's *Science*.

If Eta Car behaves in January 2009 like it has in the past, dissidents from the binary theory will probably have to surrender. Yet the star could also surprise everyone. The companion might trigger another Great Eruption, for example — we still don't know if it set off the last one. And with such a high mass, Eta Car may go supernova in the near future. If it does, it may deprive scientists of solving its mystery forever.

YHVH keep you and abundantly bless you.