

Biblical Astronomy

September/October 2007

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NEW MOON REPORT

Nehemia Gordon from Jerusalem, Israel compiled the following New Moon Report for September 2007 and the beginning of the Seventh Month of the Biblical Calendar.

“On Thursday September 13, 2007 the New Moon was sighted from Jerusalem. The moon was first sighted from Jerusalem by Devorah Gordon at 18:45, by Ferenc Illesy at 18:47, by Nehemia Gordon at 18:49 by Neria Haroeh at 18:50, by Ziw Arieli at 18:51 and by Johann Schutte at 18:55. The new moon was also sighted by Avi Marcus and Dina Marcus at 19:05 from Netanya.”

High resolution photos of the New Moon taken from Jerusalem are posted at:

www.karaite-Korner.org/new_moon/2007Sep13

The moon was in conjunction with the planet *Catab (Mercury)* at the sighting of the first crescent from Jerusalem. See the article “Moon and Mercury in Conjunction” and **Chart 444** in the August 2007 issue of *Biblical Astronomy* for further info on this.

The next New Moon is expected to be visible from Jerusalem near sunset on October 13, 2007. There is a slight possibility that it will be visible the evening before, on October 12, 2007.

According to the Biblical Calendar, the following are the dates for the Fall Feasts this year.

Day of Trumpets or Shouting – **September 13/14.**

Day of Atonement – **September 22/23.**

1st Day of Feast of Tabernacles– **September 27/28.**

Last Great Day – **October 4/5.**

May your feasts be full of joy and peace.

UPDATES ON LUNAR ECLIPSE AND METEOR SHOWER

The photo below of the total lunar eclipse on August 28, 2007 was taken by Dale Ireland from Silverdale, Washington.



I went out and viewed this eclipse from my apartment parking lot and it was just awesome. From Oregon City, Oregon the moon appeared as dark orange-red in color near and at the peak of the eclipse. I just had to wake my wife Marcia up at 3 am so she could see this splendor. She came out for ten minutes with me and went back to bed since she had to get up early for work. She told me she was glad that I woke her up. After Marcia went to bed, my two cats joined me and a few minutes later a skunk joined us. What a viewing party! This is one of the better if not the best eclipse that I have ever viewed.

Then, just four days later on September 1, Marcia and I were out stargazing again. This time we were awaiting the Aurigid Meteor Storm that was to come early Sunday morning. I went out early, around 3 a.m. and looked in the direction where the radiant of the shower is in *Auriga, the Shepherd*. The first meteor I saw was a very bright green bolide that streaked horizontally across the sky. I have seen fewer than ten of these in my

lifetime. This was not part of the *Aurigid* shower and appeared to come from the direction of the constellation *Orion*. This was an added bonus to the night's stargazing experience. Then at around 4:15 am bright meteors started streaking from Auriga. We spotted 24 of them in about 25 minutes. Since it was a bright moon-lit sky and we were observing from our apartment parking lot, that is a large number of meteors to spot in that time period. There were most likely four for every one we spotted that were too dim for us to see in the lighting conditions we were in. This shower usually produces an average of 5 meteors per hour. Most of the ones we saw fell during the first 15 minutes, from around 4:15 a.m to 4:30 a.m. But they continued to fall or be spotted until around 4:45 a.m. After that I saw nothing.

The below photo of the shower was taken by Alan Dyer. Here we see a few of the streaks.



The following article is a Sky & Telescope news bulletin posted by Kelly Beatty on September 4, 2007 concerning the meteor shower.

Aurigids Aplenty!

“For once, the theorists got it right! [Just as predicted](#), the Aurigid meteor shower made a strong showing on the morning of September 1st. The brief but intense peak occurred at roughly 4:15 a.m. Pacific Daylight Time (11:15 Universal Time), within 15 minutes or so of the predicted maximum. I'd say that's pretty good, considering that these particles were shed by Comet Kiess (C/1911 N1) more than 2,000 years ago!

As with the [total lunar eclipse](#) of August 28th, the timing of the shower's maximum favored western North America. At Griffith Observatory in Los Angeles, nearly 400 "Friends" and staff of the

facility began watching about 4:10 a.m. "Over the next 35 minutes," director E. C. Krupp reports, "between 12 and 15 bright meteors were easily seen despite the light-drenched Los Angeles sky, bright waning gibbous moon, and scattered light cloud."

On the East Coast, where morning had already dawned, meteor maven Joe Rao tuned in to the [meteor radar](#) at NASA's Marshall Space Flight Center. Rao says a "burst" of radio activity seemed to last between 11:30 and 11:34 UT (7:30 to 7:34 a.m. EDT). "During that interval I was able to hear many long overlapping whistles with quite a few 'pings' as well."

When the Aurigids rained down, I had the good fortune to be in my hometown of Madera, California, and I can attest that the shower lived up to its advance billing. The waning gibbous Moon washed out the faintest arrivals, but over the course of 30 minutes I witnessed a half dozen stunners, all magnitude +1 or brighter. Bill Smith, observing well north of me in Ukiah, California, concurs: "The shower members were quite consistent in brightness, being about magnitude 0. A few were as bright as -2."

OK, maybe it wasn't the 1998 Leonids, but it was still a rush!

I wish I could show you my snapshots of those bright fireballs, but — you guessed it — every one of them managed to flare across the sky just outside of my camera's field of view. As seen at right, *Sky & Telescope* contributing editor Alan Dyer had much better luck from his home in Calgary, Alberta.

Somewhere in the darkness above me, two Gulfstream V jets were silently whizzing by at 47,000 feet, carrying Peter Jenniskens (SETI Institute) and his handpicked team of researchers. From all accounts, they got some [amazing results](#).

But plenty of observers on the ground got to see the spectacle too."

I find it interesting that the radiant of this meteor shower is in the bosom of *Auriga*, the *Great Shepherd* and that the comet that caused this shower passed by the earth 2,000 years ago when this Great Shepherd was walking on Earth. Brings to mind the song *Those Happy Days* (when Jesus walked). He will walk on earth again in the near future, and those will certainly be Happy Days.

There were also some other surprise meteor showers that occurred in August. The following excerpt is from an article on this by Peter

Jenniskens, Meteor astronomer, Carl Sagan Center, SETI Institute posted: 30 August 2007.

Surprise Meteor Showers: Will They Become as Predictable as Lunar Eclipses?

“An unexpected meteor shower popped up during the annual Perseids shower Aug. 11-13, 2007. Among the fast-moving Perseids were several slow-moving meteors from a shower called the “Kappa Cygnids,” radiating from a point between the bright stars of Vega and Deneb. Some meteors were as bright as the first quarter moon and flashed in multiple colors.

Koen Miskotte, a leading amateur astronomer of the Dutch Meteor Society, first alerted us to the shower. Many Kappa Cygnids exhibited irregular light curves and end flares. Spanish astronomers Josep M. Trigo-Rodríguez of the Institute of Space Sciences (CSIC-IEEC) and José M. Madiedo of the University of Huelva reported that the bright meteors had been recorded on all-sky cameras of the Spanish Meteor Network (SPMN) and activity of the [Kappa Cygnids](#) appeared to peak around Aug. 13 00h UTC, during the peak of the Perseids, but lasted for several days.

At the time, a group of 12 researchers were deployed over California and the Pacific Ocean in a Gulfstream GV jet to prepare for an observing campaign for the rare [Aurigid](#) meteor shower two weeks later, on Sept. 1, 2007. Sure enough, while watching the video tapes that were recorded during this test flight, numerous slow Kappa Cygnid meteors were discovered.

Amazingly, for just trying, we already got something out of this practice campaign. The Kappa Cygnids had last erupted in 1993, and perhaps also in 1999, and the 2007 return was completely unexpected. The new observations of the Kappa Cygnids may shed light on the origin of this shower.

Unlike the Aurigids, the Kappa Cygnids do not have a known parent body, and no predictions can be made yet to forecast the next return. They move in short, 6 to 12-year orbits and are much younger than the 2,000-year-old Aurigids.

Last night, August 28, there was [a lunar eclipse](#) here in California. Predictions were widely circulated when the Moon would move into the shadow of Earth. Sure enough, I watched, delighted to see the last sliver of unobstructed sunlight disappear when the Moon, exactly on time, moved completely into the shadow. I spent the night taking

pictures of the fading Moon, watching the sky become even darker.

Will meteor showers become as predictable as lunar eclipses in the future? Early astronomers in the ancient Orient and China predicted lunar eclipses after noticing periodic patterns in their return. Precise predictions became possible centuries ago once Newton formulated the law of gravity. The application of Newton's law to predicting meteor showers is something we have been able to do well only very recently. In the past ten years we have had some success in predicting the return of unusual showers by calculating how the planets hustle the dust trails in and out of Earth's path.

So far, the Aurigid shower on September 1 is our most ambitious prediction. The meteors date from 2000 years ago, four times farther back in time than the previous record holder, the year 2000 Ursid outburst, which dated from the time of Columbus.

Will the Aurigid shower return as predicted between 4 and 5 PDT in the early Saturday morning of September 1? Will it be visible from western parts of the USA and Mexico? Again, we're flying to observe based upon our predictions. Only by making these observations can we improve our methods, and make forecasting meteor showers as reliable as predicting eclipses.”

NOGAH AT ITS BRIGHTEST

The planet *Nogah* (*Venus*) will be shining at its brightest at a magnitude of -4.6 in the early morning sky of September 23, 2007 (Yom Kippur or Day of Atonement on the Biblical Calendar).

Chart 448 shows the position of *Nogah* in the constellation *Arieh* (*Leo*) as seen above the eastern horizon from Jerusalem at 5:30 a.m. on September 23, 2007. This chart was produced using a newer version of the StarryNight Pro astronomy program. The pictures of the constellations are drawn in differently from their older version. I like the pictures from the older version better, but at least here they show Hydra (the water serpent) with many heads instead of just one. There should be seven heads, but this picture shows four with the fifth head cut off. The Lion is about to tear the serpent to pieces.

How unique that *Nogah*, the bright and morning star was at its brightest in the Lion of the tribe of Judah on the Day of Atonement.

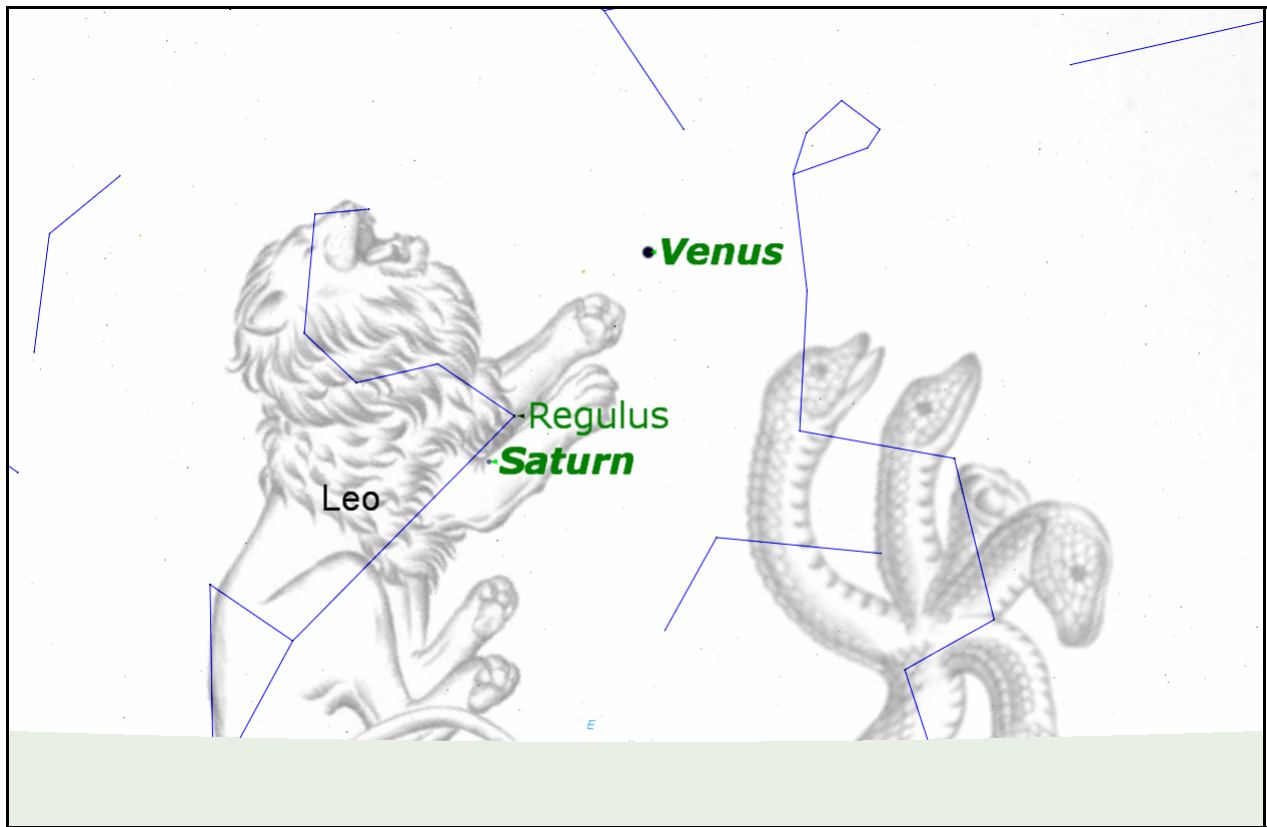


Chart 448 – Position of Venus when it is at its brightest on the morning of September 23, 2007

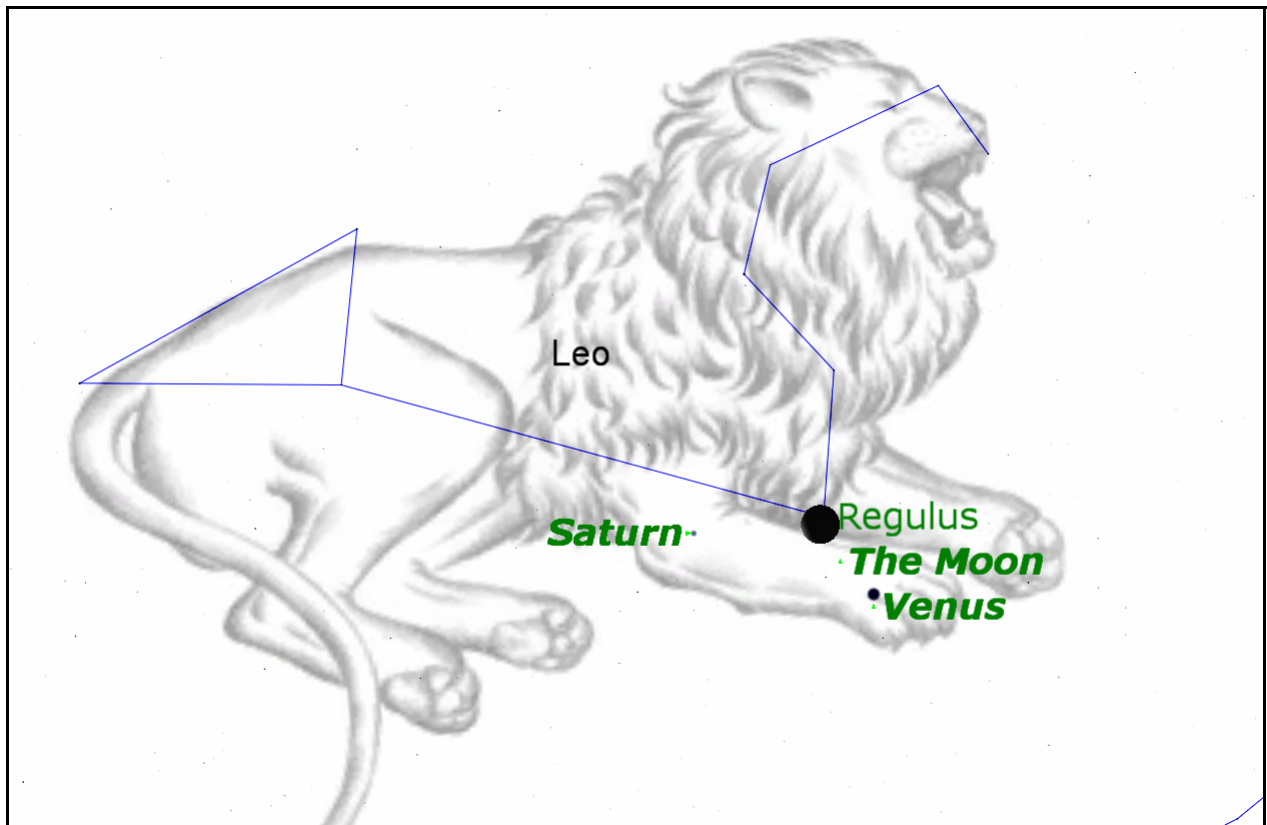


Chart 449 – Occultation of Regulus on October 7, 2007

OCCULTATION OF REGULUS

On October 7, 2007 there will be a lunar occultation of the star *Regulus* in the constellation *Arieh (Leo)*. **Chart 449** shows this occultation.

I would not normally mention much on a Regulus occultation since they occur about every month this year, but this one is seen from the Middle East, North Africa and Europe and occurs two weeks after Venus is at its brightest in the Lion and the two charts just seemed to be in harmony with each other. Besides, there is not much else to speak of occurring in October as far as celestial events go.

MARS ATTACKS PART III

The planet Adom (Mars) is gradually getting closer to the earth as it does about every two years and will reach its closest approach to Earth in December, not August 27 as the now yearly summer e-mail hoax states.

Robert Roy Britt from Space.com posted the following article on August 22, 2007.

Mars and Earth Converge

“By the time you finish reading this sentence, you'll be about 25 miles closer to Mars, according to NASA calculations.

Earth and Mars are converging, setting up a great [skywatching](#) opportunity for later this year.

Here's what's going on: Earth has the inside track as the two worlds orbit the sun. Inner planets orbit more quickly than outer planets because of the [laws of gravity](#). Earth requires 365 days to go around the sun once, whereas a year on Mars is 687 Earth-days.

So every 26 months, Earth passes Mars on this orbital trek.

When the pass occurs, Earth and Mars are on the same side of the sun, as seen from above, with all three objects lined up in a row, and astronomers say Mars is at *opposition*.

As our planet catches the red planet, the distance between them shrinks dramatically. (It's an opportune time for sending missions to Mars, such as the recently launched [Phoenix Lander](#).)

Right now, the distance between the two worlds is shrinking at a rate of 22,000 mph, or about 25 miles per sentence, NASA figures.

By late September, Mars will be one of the brighter objects in the night sky. The closest approach will occur in December, when Mars will be brighter than every star in the sky.

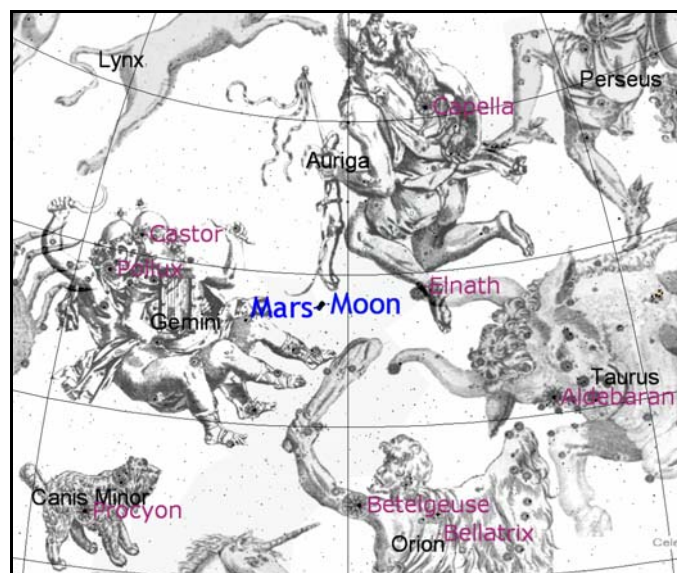
You might have heard that Mars will outshine our moon on Aug. 27. Not true. That rumor is rooted in an annual email that has come to be known as the Mars Hoax, one of the many enduring, [mistaken ideas](#) about the red planet.

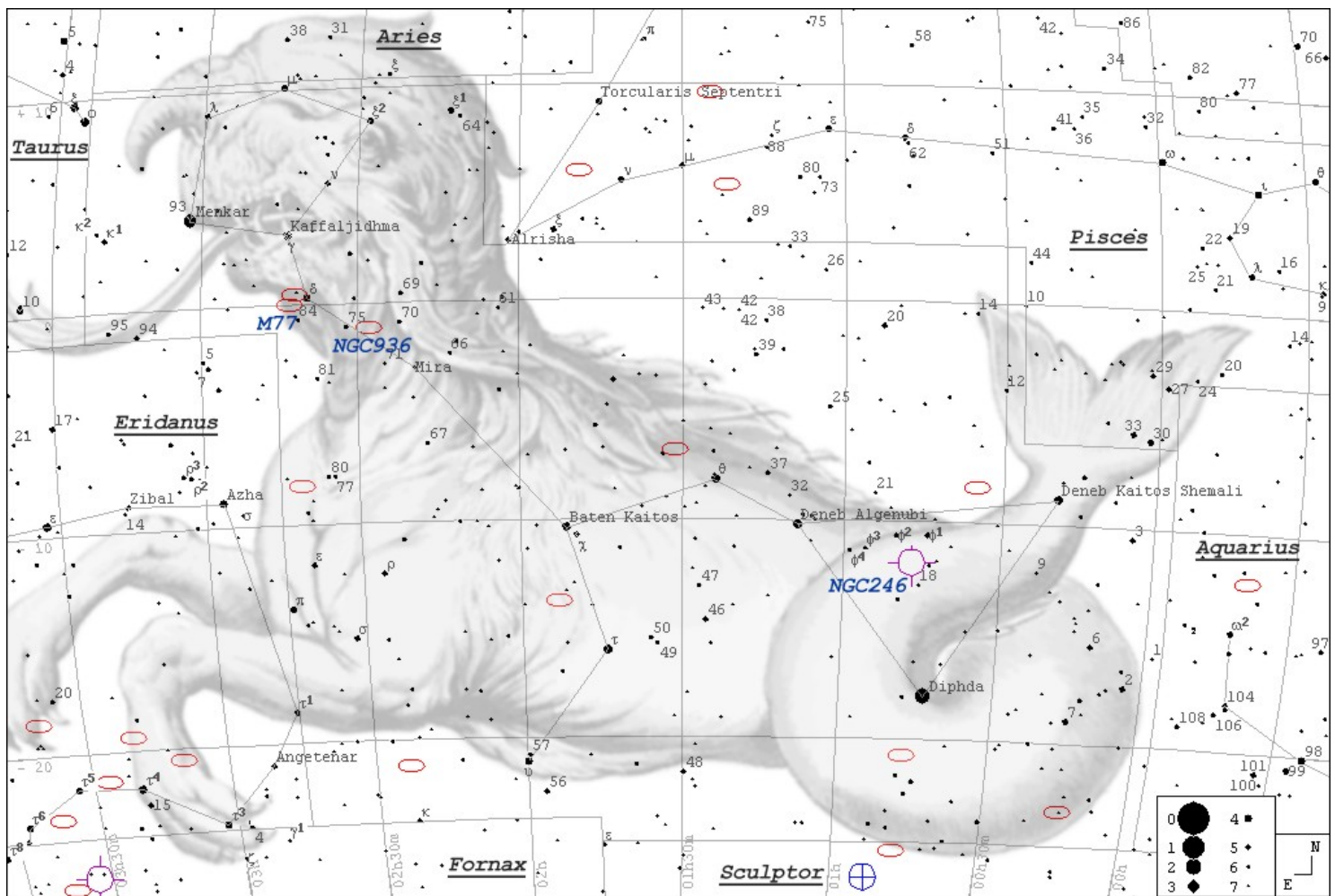
Each August, various versions of the email land in inboxes all around the world. The hoax can be traced back to a 2003 event, when Mars and Earth were closer than they'd been in thousands of years. (At the risk of further fueling the rumor, here is an account of [the 2003 event](#).) But the proximity was an incremental improvement, in terms of viewing Mars, compared to the vast distance that always separates the two worlds. Never can Mars even approach the brightness of the moon in our sky.

Instead, Mars will remain, as always, no more than a point of light to the naked eye. It'll grow steadily brighter through this autumn. And in modest backyard telescopes later this year, the red planet will be revealed as a ruddy disk, and sharp-eyed observers might spot some detail.

Mars currently rises around 3 a.m. local time in the eastern sky.”

The chart below shows Mars and the full moon in a real close conjunction when Mars is at its brightest on December 24, 2007.





MIRA CONTROVERSY

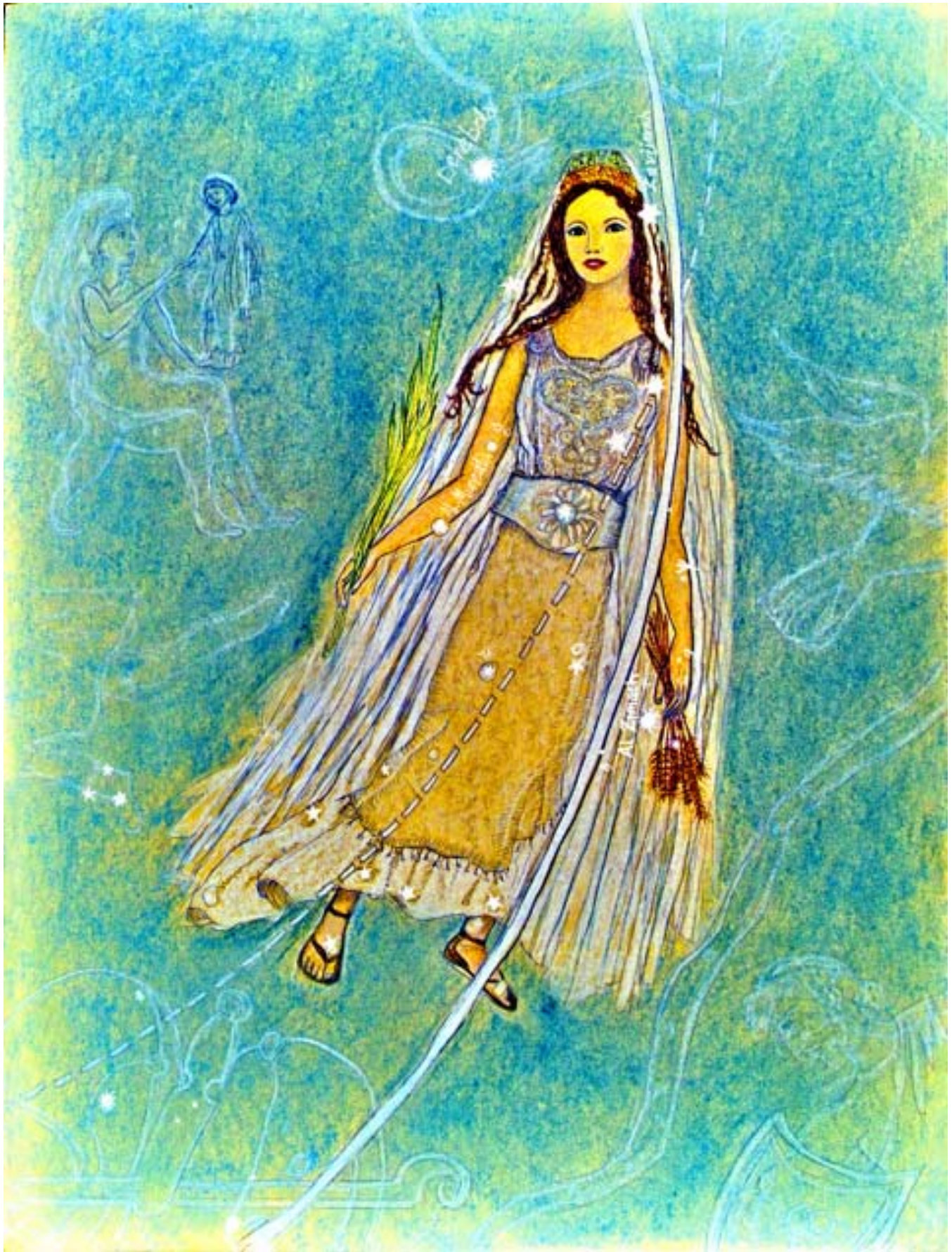
I wrote an article on a recent NASA photo of the star *Mira* in the constellation *Cetus* in the August 2007 newsletter. I also included an article by Sky & Telescope on the same subject. I received some inquiries as to why the “scientists” in that article and others have the star *Mira* in the tale of “Cetus the whale” while I placed it in the neck of “Cetus the sea monster” or beast from the sea.

In most ancient renditions of *Cetus* this figure is seen as more of a sea beast than a whale. It was called a whale only in more recent times. The above figure is from *Johannes Hevelius' Uranographia* (1690). You may need reading glasses or a magnifier to see the star names clearly, but here as in most renditions of this figure, *Mira* is in the neck of the beast. The stars *Diphda* (also called *Deneb Kaitos*, *Deneb Algenubi*, and *Deneb Kaitos Shemali*) are in the tail of *Cetus* as seen above. *Deneb* means tail, such as *Deneb Al Gedi* the tail of the goat *Capricorn*, *Denebola* in the tail of the Lion (*Leo*), and *Deneb* the tail of the swan *Cygnus*.

In the modern whale, the head of the whale is placed on these stars. The names of the stars show that the head does not belong there. The tail of the whale is where the head of the beast is. The modern rendition of *Cetus* is literally ass backwards.

The name *Mira* in its ancient Akkaidian and Hebrew *marah* means rebel, rebellious, be disobedient, rebel against, etc. You can find this in Young's Concordance or Strong's Concordance. It is translated as "the rebel" from Francis Rollestone's *Mazzaroth* (1862), Joseph Seiss' *The Gospel in the Stars* (1882), and E.W. Bullinger's *The Witness of the Stars* (1893). All three of these authors were prominent Hebrew and Greek scholars.

Michele Abraham, who is doing the restoration of the constellation pictures for Biblical Astronomy, has been going through much tribulation. Please keep her in your prayers. She hopes to get back to painting in November. The first constellation she did was *Bethulah* (*Virgo*) in May 2005 but I had no study with it, so here it is again with the study and meaning of the star names.



Virgo (the Virgin)

Virgo

The Promised Seed of the woman

Main constellation of the Sign *Virgo* (*Bethulah*).

Ancient Names for this constellation

Bethulah (Heb.) – *a virgin*. In Arabic *Bethulah* means *a branch*.

Virgo (Lat.) – *a virgin*. Also in Latin, *Virga* means *a branch*.

Sunbul (Arab.) – *an ear of corn*.

Complementing scriptures to this constellation picture

Isaiah 7:14 – Behold, a virgin shall conceive and bear a son, And shall call his name Immanuel. (quoted in Matthew 1:23)

Revelation 12:1-2 and 5 – ¹Now a sign appeared in heaven: a woman clothed with the sun, with the moon under her feet, and on her head a garland of twelve stars. ²Then being with child, she cried out in labor and in pain to give birth. ⁵She bore a male Child who was to rule all nations with a rod of iron. And her Child was caught up to God and His throne. (NKJV)

Jeremiah 23:5, 6 – Behold the days come, saith the LORD, That I will raise unto David a righteous BRANCH, And a KING shall reign and prosper.

Stars in Virgo and the meanings of their names

Tsemech (Heb.) – *the branch* and also called ***Al Zimach*** in Arabic which also mean *the branch*.

Zavijaveh (Arab. form.) – *the gloriously beautiful*.

Vindemiatrix (Chald.) – *the son, or branch, who cometh*. This star is also called ***Al Mureddin*** in Arabic which means *who shall come down or who shall have dominion*.

Bethulah is the portrayal of the woman of Genesis 3:15 and Revelation 12:1. She represents the Twelve faithful tribes of Israel. The twelve stars above her head are actually the twelve constellation signs, she being the first. These signs start just above her head and end just behind the tail of the Lion (Leo). This is the only asterism for twelve stars in the heavens. Each sign also represents one of the Twelve Tribes of Israel, except for Levi, who in the encampment of Israel in the wilderness was in the center of the camp near where Ark and the Mercy Seat were. This sign is also a great portrayal or picture to go along with the Biblical story of Ruth. She is holding in one hand a sheath of barley or wheat, and in the other hand a palm frond. This is the picture of this constellation that has come down to us from thousands of years ago. To this day, during celebration services at the Feast of Unleavened Bread, Pentecost and Feast of Tabernacles, Messianic Jews, Messianic Israel, and various Jewish sects hold a sheaf of barley or wheat in one hand and a palm frond in the other hand. The constellation Bethulah herself is seen rising in the early evening sky during Passover/Unleavened Bread. She is at zenith and highest in the early evening sky during Pentecost, and setting above the western horizon in the early evening sky at Tabernacles. Bethulah is then not seen again in the early evening sky until the following Passover/Week of Unleavened Bread. This constellation clearly portrays Israel and the Feasts of YHVH.