

Biblical signs in tonight's sky?

By Christopher M. Graney in Astronomy Essentials, "Earth Sky" website

Will the September 23, 2017 sky mirror "signs" from the Bible's Book of Revelation? Possibly. But this same sky scene has been seen 4 other times in the past 1,000 years. An astronomer explains.



One day last fall I was working in my office when my desk phone rang. It was a reader of a publication, "The Catholic Astronomer," calling me

with a question. He asked why the Vatican Observatory blog was full of discussion on black holes or whatnot, when there was something much more momentous to talk about.

It turns out that the momentous thing to which my caller was referring was an arrangement of celestial bodies that will occur this year (2017) on September 23. On that date, according to various Internet sources, the heavens themselves will be a tableau of Revelation 12 in the Bible:

A great sign appeared in the sky, a woman clothed with the sun, with the moon under her feet, and on her head a crown of 12 stars. She was with child and wailed aloud in pain as she labored to give birth ... She gave birth to a son, a male child, destined to rule all the nations with an iron rod.

On September 23, 2017 the sun will be in the zodiac constellation Virgo— *“a woman clothed with the sun”*. The moon will be at the feet of Virgo — *“with the moon under her feet”*. The ‘nine’ stars of the zodiac constellation Leo, plus three planets (Mercury, Venus, and Mars), will be at the head of Virgo — *“on her head a crown of 12 stars”*. The planet Jupiter will be in the center of Virgo, and, as the weeks pass after September 23, Jupiter will exit Virgo to the east, past her feet, so to speak — *“She was with child and wailed aloud in pain as she labored to give birth”*. Jupiter is the largest of the planets, the “king” of the planets, so to speak — *“She gave birth to a son, a male child, destined to rule all the nations with an iron rod”*.

Must this not be a sign of something momentous, as the Internet sources say? In fact, after researching it, I found that, in only the past 1,000 years, this same arrangement in the sky has happened at least four times, in 1827, 1483, 1293, and 1056.

Now, I know that the readers of this blog are diverse. People with interest in astronomy are a diverse group! And you all will have diverse reactions to this question. Some of you are probably saying right now, “what a bunch of nonsense!” Others of you may be thinking that my caller had a good point, and you would like to learn more. Fortunately, I am a community college professor! Community college people are the ‘A-Team’ of the academic world (as in B.A., Hannibal, and the crew from the TV show and the movie — who are tougher than anyone else and

able to save the day using duct tape, PVC pipe, and a butane lighter). We thrive on diversity! No question phases us!

We know that there are a lot of smart people out there who have not had much formal education in a topic like astronomy, and that interest in questions like this reflects a basic interest in astronomy combined with interest in religion and scripture.

My caller was familiar with the Stellarium sky software. He could call up the skies of September 23, 2017 on Stellarium and see for himself that this celestial arrangement was a real thing. His was a reasonable question. Scientists need to be able to answer questions people have like this one, without treating the questions as nonsense, because the questions will not go away just because they are dismissed. And thus before long I was having a nice conversation with the caller, and I ended up telling him I would look into his question, and write a post on this topic.

But I said it was unlikely to be the post he was looking for. He was OK with that.

And so, Mr. Caller:



The constellation Virgo on September 23, 2017, according to the Stellarium sky software. The moon's size is exaggerated for visibility. See the annotated image below.



Green arrows show the “9” stars of Leo. Blue arrows show the planets Mercury, Venus, and Mars. Red arrow is Jupiter. Violet arrow is the moon (shown enlarged). The sun is at Virgo’s shoulder.

First, in one year, thanks to the Earth’s annual orbit, the sun travels the entirety of the ecliptic, and thus passes through every one of the 12 constellations of the zodiac. *The sun is in Virgo every September.*

Second, in one month the moon goes through its cycle of phases, and travels the entirety of the ecliptic, and thus passes through every constellation of the zodiac—all owed to the period of the moon’s orbit being one month. Therefore *there is always a day or two every year when the sun is in Virgo and the moon is just to the east of Virgo (just past the “feet”).*

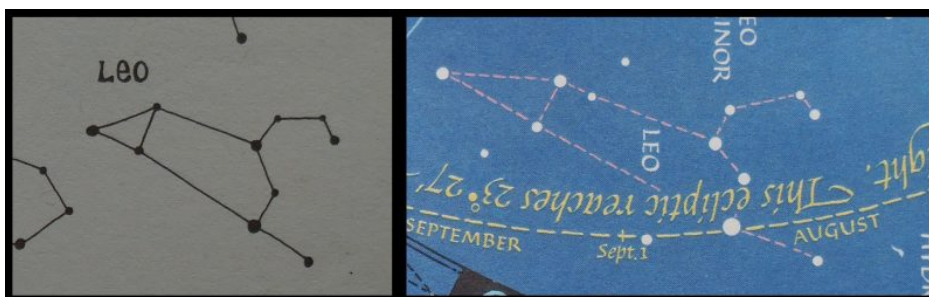
So, the celestial “woman clothed with the sun with the moon at her feet” is as common in September as is the U.S. holiday of Labor Day.

But what of the crown of 12 “stars,” comprised of three planets and the nine stars of Leo? The response to this question is another question — *why nine stars in Leo?* There are many more than nine stars in Leo. Those nine are just brighter ones that are often depicted as comprising the general outline or shape of the constellation. But in fact there are scads of stars in Leo and surrounding the “head” of Virgo.



There are many more than 9 stars in the constellation Leo.

And not all depictions of Leo show those nine as its outline. Some show the outline of Leo as consisting of 10 stars, for example. That would give Virgo a crown of 13 stars here!



Two depictions of Leo outlined with 10 or 11 stars rather than 9. The depiction on the left is from an astronomy book for children; the depiction on the right is from an old National Geographic atlas.

And yes, multiple planets being at Virgo's head while Jupiter is in Virgo's center and the moon is at Virgo's feet is somewhat unusual. But it is not that unusual. The period of Jupiter's orbit is a little less than 12 years,

and therefore Jupiter will be in Virgo (with the sun there, too, and the moon at the feet) once every 11 or 12 years.

So the sun in Virgo, the moon at Virgo's "feet", and Jupiter in the constellation are regular occurrences. This leaves the planets at the "head" (the number depending on the number of stars granted to Leo) as the determining factor in making a "momentous" celestial arrangement. Indeed – while various Internet sources speak of the specific celestial arrangement here as being "unique in human history" or "once in 7,000 years" – in fact, it is not unique to September 23, 2017.

This basic arrangement happened before — in September 1827, in September 1483, in September 1293, and in September 1056. These are all shown at the end of this post. I only searched back one thousand years, from 2017 to 1017 — there are undoubtedly other examples outside of that time period, and probably a couple examples that I missed within that time period.

No doubt someone could go diving into the history books to scrounge up some events from 1827, 1483, 1293, and 1056 that the September skies of those years supposedly foretold. That's the way it is with astrology. A person reads his or her daily horoscope and finds that it says "obstacles will be placed in your path today." Then, that person picks those instances of getting stuck in traffic, or in a long line at the grocery store, or wherever, and says "hey, that horoscope was right," when, of course, we all encounter such things every day.

It is true that astrology — reading the heavens for signs — is something astronomers used to believe was valid (or, my guess is that many of them pretended to believe it was valid, because it paid the bills). But astrology has been found to have no more scientific basis than Harry Potter's wand. It doesn't work (something that does not seem to hinder its popularity). If astrology had anything going for it, astronomers would not need to go begging for money to fund astronomical research. We could just use our astronomical knowledge to divine which way the stock market was going, invest accordingly, become "astronomically" wealthy, and fund astronomical research from our surplus.

As it is, watching the heavens for signs of what is to come is a waste of time. And it is doubly a waste of time because "signs in the sky" appeal,

for some reason, to all sorts of people out there — all of whom can use the Stellarium website, to find this or that momentous “sign” signifying whatever they want to signify.

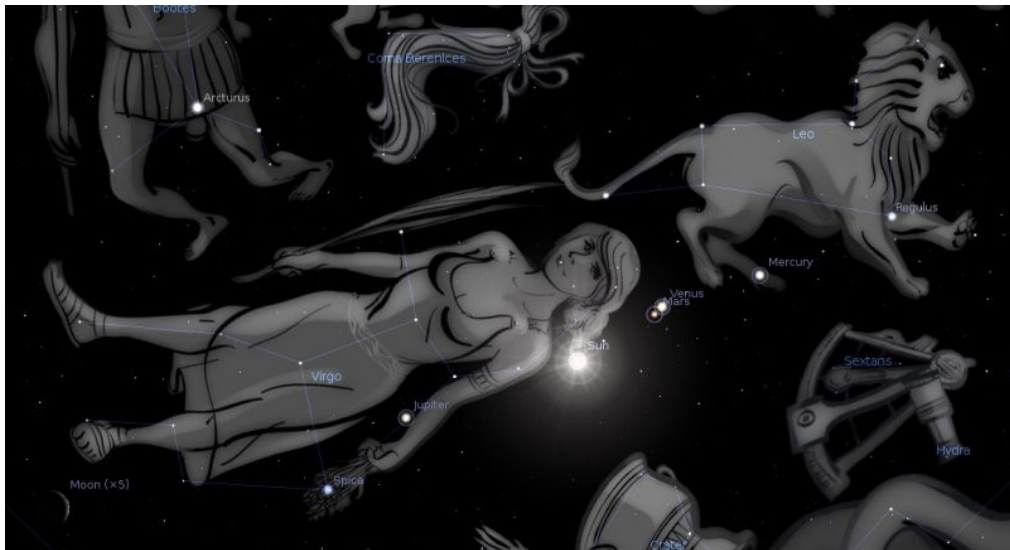
And that is why astronomers ignore the seemingly momentous celestial arrangement of September 23, 2017, and talk instead about black holes or whatnot.



The constellation Virgo on September 24, 1827, according to Stellarium. In this and the images below, the moon’s size is exaggerated for visibility.



The constellation Virgo on September 6, 1483.



The constellation Virgo on September 5, 1293.



The constellation Virgo on September 14, 1056. Venus and the star Regulus in Leo are very close to one another.

Bottom line: From the standpoint of astronomy, there's nothing unique or unusual about the sun, moon and planets – or the constellation Virgo – on September 23, 2017, despite claims on the Internet of a unique and significant celestial event, supposedly “mirroring” the Bible’s Book of Revelation. In the past 1,000 years, this same event has happened at least four times already, in 1827, 1483, 1293, and 1056.

Christopher M. Graney is professor of physics and astronomy at Jefferson Community & Technical College in Louisville, Kentucky (USA), where he helps keep the college’s observatory running. For some years now his research focus has been the history of astronomy, especially the late 16th and early 17th centuries. He is the author of the 2015 book *Setting Aside All Authority: Giovanni Battista Riccioli and the Science Against Copernicus in the Age of Galileo*, and the forthcoming book *Mathematical Disquisitions: The Booklet of Theses Immortalized by Galileo*, both published by the University of Notre Dame Press.