

# Biblical Astronomy

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## NEW MOON REPORT

Nehemia Gordon from Jerusalem, Israel compiled the following New Moon Report for the month of December 2011 and the beginning of the Tenth Month on the Biblical Calendar.

“On Sunday December 25, 2011 observers from Israel looked for the new moon but it was not sighted. It was raining throughout the country. Visibility would have been uncertain even under ideal conditions so unless another report comes in of a sighting, new moon will be Monday night December 26. My thanks to Yoel Halevi, Devorah Gordon, and David Cachicas for braving the Jerusalem rain to carry out the observation this month in the Holy City.”

The next New Moon is expected to be visible from Jerusalem, Israel near sunset on January 24, 2012 when the moon will be 1.93% illuminated and 14.35° above the horizon at five minutes past sunset.

## QUADRANTID METEOR SHOWER

Every year on or about January 4, the Quadrantid Meteor Show Peaks, and thus it is so this year. This shower peaks at up to 200 meteors per hour in some years and is not as popular as others of the same intensity because it occurs in the bitter cold of January. You have to be a diehard observer to go out for a couple of hours to view this shower if you live in the northern latitudes.

Below is an article from Astronomy.com concerning this year's shower.

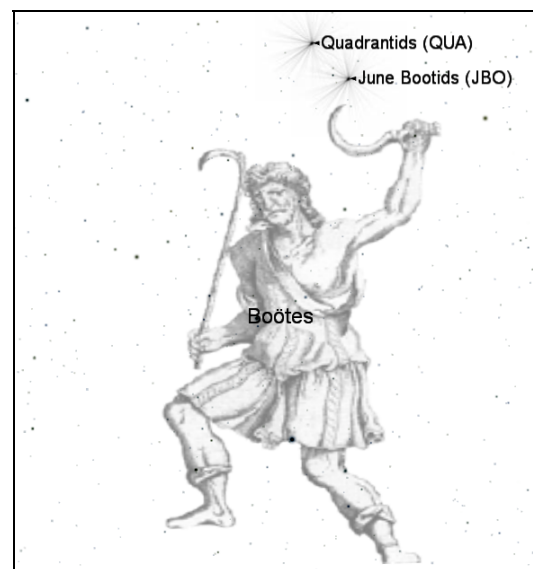
### The year's first shower puts on a nice show –

“The Quadrantid meteor shower reaches its peak the morning of January 4. Although a waxing gibbous Moon will drown out fainter members for

much of the night, it sets shortly after 3 a.m. local time, leaving nearly 3 hours to observe under a dark sky. Bad weather can be a problem at this time of year, but those who brave the cold might see a memorable event.

The shower's peak averages about 120 meteors per hour, but it can produce anywhere from 60 to 200. This range may derive more from the clouds that often plague winter observing, however, than from true variations in the shower. Quadrantid meteors appear to radiate from a point in northern Boötes. Their name originates from the now-defunct constellation Quadrans Muralis, which formerly occupied this region.”

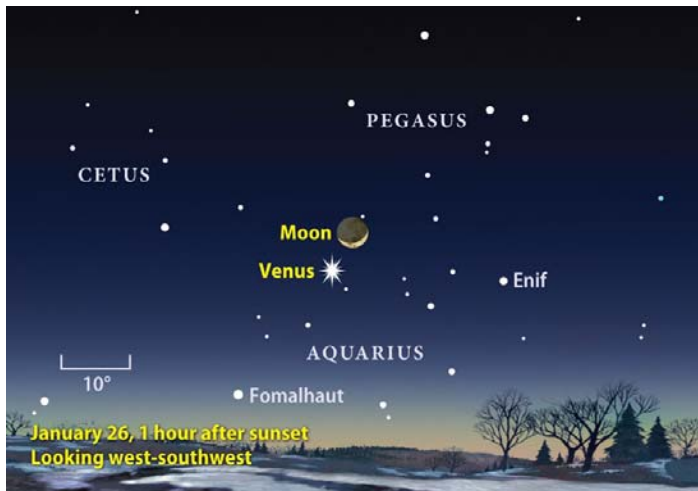
The constellation *Quadrans Muralis* does not belong to the original 48 constellations of the Mazzaroth. This region has always been part of the constellation *Bootes*. Below is a chart of *Bootes* with the radiant of the Quadrantids above the sickle. It is above the area where the peak of the June Bootids occurs.



*Bootes* means *He cometh or the Coming One*. Here He is seen reaping the harvest at the end of the this age.

## VENUS AND THE CRESCENT MOON

On January 26 there will be a neat sight to see over the west-southwest horizon. Venus will be shining brightly with the two-day old bright crescent moon closely above it in the constellation *Aquarius*. Other than the meteor shower in early January, this is the second highlight celestial event for the month of January.



## WHAT GOT ME STARTED IN THIS MINISTRY

I became very interested in Biblical Astronomy in 1976 after reading a copy of E.W. Bullinger's *The Witness of the stars* (1893). After that I read other books on the subject as well, including *Mazzaroth* by Francis Rolleston (1862 & 1865), and *The Gospel in the Stars* by Joseph A. Seiss (1882). These are great books on the 48 constellations and their Biblical meanings as well as on the main stars in those constellations and the meanings of the star names.

It was in the late 1970's to early 1980's that I became familiar with Dr. Earnest L. Martin and His book *The Birth of Christ Recalculated*, which was the forerunner of his book *The Star of Bethlehem: The Star that Astonished the World*. I was going to college at the time under the G.I. Bill. This was about one and a half years after finishing my enlistment in the U.S. Marine Corps and then one year of service with a ministry that I was part of at that time.

I had a desire to learn about the physical aspects of Astronomy, which stemmed from my interest in Biblical Astronomy. I took such courses

as basic Astronomy, upper division Astrophysics and Celestial Mechanics.

Dr. Martin's book showed certain celestial events that occurred in the constellations around the time of the birth of Messiah. That really peaked my interest. Seeing that there were certain celestial events that portrayed the First Coming of Messiah, I believed that there would also be certain celestial events that would point to the Second Coming as well, especially since there are many constellations that are about the Return and the Judgment that is to come. The late Dr. Martin did not share in that view. He believed the celestial events concerning the coming Messiah ended at His birth.

From that time forth, I kept my eyes on celestial events that might portray the Messiah's return. At that time I believed that the Second Coming or Appearing would occur in 2028, or 2,000 years after the crucifixion. I have learned a lot since then and now believe that it will occur in 2047 or 2,000 years from when the official reaching out to the Gentiles began.

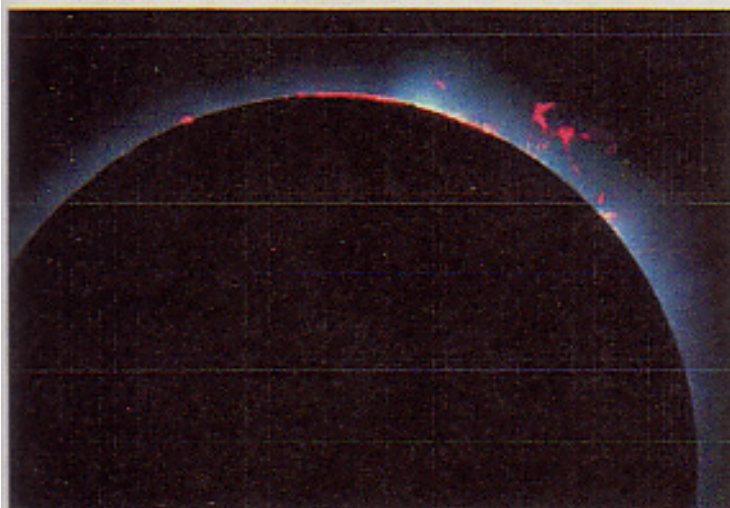
I was subscribed to Astronomy Magazine at the time, as well as now, which shows what celestial events are occurring every month. I did not have a computer at the time. It was in July 1993 when I received and read the August 1993 issue of Astronomy that I became very excited after reading a four page article on celestial events coming up in the next 25 years. It was also the 25<sup>th</sup> anniversary edition of Astronomy Magazine.

I notice that there were many rare to very celestial events coming up between 1996 and 2003. It did not even include the two comets Hyakutake and Hale Bopp. About three months later I purchased my first computer and Astronomy program *The Dance of the Planets*. My excitement was through the roof. I found that many of those events were very rare like once every 500, 800, 1,000, 2000, 4,000 years, and that many of the events fell on the feast dates of Passover and Sukkot in 1996, 1997, 1999, and 2000.

I did a research paper on it (1994) and later a book (1996) and things skyrocketed from there. I cannot write about everything here, but I thought that you might want to see the article that started it all back in 1993. So attached is the four-page article from the August 1993 issue of *Astronomy Magazine*. There are some events yet to occur included in this article. This is from the gift that Marcia (my wife) gave me, which is a DVD set with all the issues of *Astronomy* from 1973 to 2010.



# Celestial Sights of the Future



ASTRONOMY looks forward to the sky's best events of the coming decades.

by Alan Dyer and Richard Talcott

**E**clipses, conjunctions, transits, and more. Between 1994 and 2017, the year of the next total eclipse of the Sun visible from continental North America, a host of spectacular celestial events await observers. For our look ahead we've selected what we think will be the best the sky has to offer in the coming years. Two or more planets will meet many times — we've picked only the closest conjunctions involving the brighter planets. And we've selected only those lunar occultations visible from the Western Hemisphere and involving the brightest planets. While several bright comets may grace the skies in the next few years, all will be unpredictable visitors that will appear with only a few weeks' warning. (Events in bold are visible from North America.)

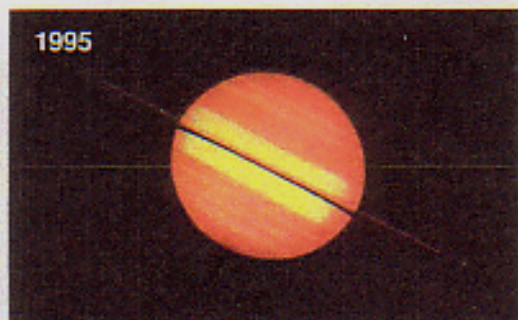
## 1994

<b>May 10</b>	Annular eclipse of the Sun (North America)
<b>November 3</b>	Total eclipse of the Sun (South America)

## 1995

<b>All year</b>	Saturn's rings edge-on
<b>May 27</b>	Dawn-into-morning occultation of Venus by waning crescent Moon (Europe)
<b>October 24</b>	Total eclipse of the Sun (Southeast Asia, Indonesia)
<b>November 17</b>	Evening conjunction of Venus, Mars, and Jupiter including close approach of Venus and Mars on Nov. 22

## 1995



Richard Proctor

Every 13 to 16 years, the rings of Saturn are oriented edge-on to our line of sight. Through a small telescope they disappear. But through a large telescope you can still see them as a razor thin line of light. It's a wonderful opportunity to see Saturn as you rarely have before.

## 1996

<b>February 22</b>	Spectacular sunset occultation of Venus by waxing crescent Moon (Hawaii, Pacific)
<b>April 3/4</b>	Total eclipse of the Moon (eastern North America, South America, Europe, Africa)
<b>September 26/27</b>	Total eclipse of the Moon (North and South America, Europe, Africa)

## 1997

<b>March 9</b>	Total eclipse of the Sun (Russia)
<b>March 24</b>	Deep partial eclipse of the Moon (North and South America)
<b>September 16</b>	Total eclipse of the Moon (Australia, Asia, Africa)
<b>September 18</b>	Dawn occultation of Saturn by waning gibbous Moon (Hawaii, North and Central America)
<b>December 9</b>	Midnight occultation of Saturn by waxing gibbous Moon (North America)



## 1998

February 26	Total eclipse of the Sun (Galapagos, South America, Caribbean)
April 23	Close conjunction of Venus and Jupiter near waning crescent Moon
April 23	Very rare double occultation of Venus and Jupiter by Moon (South Atlantic)
August 22	Annular eclipse of the Sun (Indonesia, South Pacific)
September 19	Dawn occultation of Venus by waning crescent Moon (Hawaii, Pacific). Close conjunction elsewhere.

## 1999

February 16	Annular eclipse of the Sun (central Australia)
February 23	Close conjunction of Venus and Jupiter
August 11	Total eclipse of the Sun (England, Europe, Middle East, India)
November 15	Grazing transit of Mercury (North America, eastern Pacific)
November 17	Leonid meteor storm ???

## 2000

January 20/21	Total eclipse of the Moon (North and South America, Western Europe)
April 12	Evening conjunction of Mars, Jupiter, and Saturn in Aries
July 16	Total eclipse of the Moon (Japan, Australia, Pacific, Hawaii)
August 1	Spectacular sunset occultation of Venus by waxing crescent Moon (southwestern North America)
December 25	Christmas Day partial eclipse of the Sun (North America)



On April 23, the waning crescent Moon will occult both Venus and Jupiter at the same time, the only time this century that such an event can be seen. Unfortunately, the event will be visible in its entirety only from the South Atlantic. From eastern Brazil, observers will see the two planets emerge from behind the Moon shortly after moonrise. From West Africa, the Moon misses Venus but occults Jupiter. From western Europe, the Moon misses both planets, but the tight cluster will be spectacular in the predawn sky. By the time the trio rise for North American observers, the Moon will have moved 2° to 3° away from Venus and Jupiter.



Department of Library Services American Museum of Natural History



Astronomer: all diagrams by Thomas L. Hart

Before the end of the century, eclipse fans in the Western Hemisphere have two South American eclipses to look forward to: November 3, 1994, and February 26, 1998. But the eclipse likely to be seen by the most people in the near future occurs on August 11, 1999, when the Moon's shadow races across Europe, bringing up to two minutes of darkness at midday for tens of millions of people.

During a rare "meteor storm" hundreds of meteors per second pour down from the shower's radiant point. The annual Leonid meteor shower sometimes puts on such a once-in-a-lifetime show. The last was in 1966. Other storms occurred in 1799, 1833, and 1866, giving the great Leonid storms a 33- or 34-year cycle. No storm occurred in 1899 or 1933, and there's no guarantee one will in 1999. But everyone will be watching just in case.



## 2001

January 9	Total eclipse of the Moon (Asia, Europe, Africa)
June 21	Total eclipse of the Sun (southern Africa)
December 14	Annular eclipse of the Sun (near Hawaii, Pacific, Central America)



## 2002

May 5	Evening conjunction of Venus, Mars, and Jupiter
May 10	Close approach of Venus and Mars
June 10	Near-total annular eclipse of the Sun (Pacific, north of Hawaii)
December 4	Total eclipse of the Sun (southern Africa)

In the spring of the last year of the millennium, Mars, Jupiter, and Saturn cluster together low in the evening sky in the constellation Aries. There are many conjunctions of planets in the next few years, but this one is bound to generate a great deal of interest because of its similarity to a famous conjunction which occurred in the spring of 6 B.C.

## 2003



Donald C. Parker

Mars comes especially close to Earth once every 15 or 17 years. The Red Planet then appears as large as it ever gets through a telescope. Our last close look was in September 1988. The next close approach comes 15 years later, in August 2003. Mars is then 56 million kilometers away, closer than it's been in over 1,000 years and providing the finest views until August 2287.

May 7	Transit of Mercury (Europe, Africa, Asia)
May 15/16	Total eclipse of the Moon (North and South America)
August 27	Very close approach of Mars
November 8/9	Total eclipse of the Moon (eastern North America, South America, Europe, Africa)

## 2004

May 4	Total eclipse of the Moon (Asia, Africa)
June 8	Transit of Venus (eastern North America, Europe, Africa, Asia, Australia)
October 27/28	Total eclipse of the Moon (N. and S. America, Europe)
November 4	Close conjunction of Venus and Jupiter

## 2005

April 8	Annular/total eclipse of the Sun (Pacific, Central America)
October 3	Annular eclipse of the Sun (Spain, Africa)

## 2006

March 29	Total eclipse of the Sun (Africa, Turkey, Russia)
June 17	Close conjunction of Mars and Saturn
November 8	Transit of Mercury (North and South America)

## 2007

March 3	Total eclipse of the Moon (Europe, Africa)
August 28	Total eclipse of the Moon (western North America, Pacific, New Zealand)

## 2008

February 1	Close conjunction of Venus and Jupiter
February 20/21	Total eclipse of the Moon (North and South America, Western Europe)
July 10	Close conjunction of Mars and Saturn
August 1	Total eclipse of the Sun (High Arctic islands of Canada, Russia)
August 16	Deep partial eclipse of the Moon (Asia, Africa, Europe)

## 2009

April 22	Dawn occultation of Venus by waning crescent Moon (western North America)
July 22	Total eclipse of the Sun (China, Pacific)
All year	Saturn's rings edge-on



## 2010

July 11	Total eclipse of the Sun (South Pacific)
August 5	Evening conjunction of Venus, Mars, and Saturn
December 21	Total eclipse of the Moon (North and Central America)

## 2011

May 11	Close conjunction of Venus and Jupiter
June 15	Total eclipse of the Moon (Asia, Africa)
December 10	Total eclipse of the Moon (western North America, Pacific, Australia, Asia)

## 2012

May 20	Annular eclipse of the Sun (Japan, Pacific, western United States)
June 5	Transit of Venus (North America, Pacific, Asia, Australia)
November 13	Total eclipse of the Sun (south Pacific)

## 2013

May 10	Annular eclipse of the Sun (Australia, South Pacific)
November 3	Annular/total eclipse of the Sun (Atlantic, Africa)

## 2014

April 15	Total eclipse of the Moon (North and South America)
August 18	Close conjunction of Venus and Jupiter
October 8	Total eclipse of the Moon (western North America, Pacific, New Zealand)

## 2015

February 21	Close conjunction of Venus and Mars
March 20	Total eclipse of the Sun (North Atlantic, North Sea, North Pole)
April 4	Total eclipse of the Moon (western North America, Pacific, New Zealand, Australia)
July 1	Close conjunction of Venus and Jupiter
September 27/28	Total eclipse of the Moon (eastern North America, South America, Western Europe, Africa)
October 22	Morning conjunction of Venus, Mars, and Jupiter

## 2016

March 9	Total eclipse of the Sun (Indonesia, Pacific)
August 27	Very close conjunction of Venus and Jupiter
September 1	Annular eclipse of the Sun (central Africa)

## 2017

February 26	Annular eclipse of the Sun (South America, South Atlantic, Africa)
August 21	Total eclipse of the Sun (United States)



Richard Proctor

Transits of Venus are the stuff of legends. No more than twice each century, Venus passes directly between Earth and the Sun, appearing as a fuzzy black spot on the face of the Sun. Transits of Venus occur in pairs eight years apart which themselves are separated by either 113 or 130 years. The last set was in 1874 and 1882. The next will be in 2004 and 2012. The June 8, 2004 transit is visible from eastern North America, Europe, Africa, Asia, and Australia. The June 5, 2012 transit can be seen from Asia, Australia, and North America.



After a long wait since July 1991, the umbral shadow of the Moon finally touches the North American continent again. On August 21, the lunar shadow sweeps across the center of the United States creating a total eclipse and one of the most eagerly anticipated astronomical events of the next 25 years.

Where will you be in 1999? or 2004? or 2017? No matter what else the next decades bring, we can be certain they offer a wonderful array of eclipses, rare transits, and beautiful gatherings of planets in the twilight sky. The sky always gives us something to look forward to. □