



## Newsletter 8: Astrologers Take Power

In our second to last newsletter (number 6) about Columbus, we talked about the relationship between eclipses and the discovery of the New World. We saw that even before the year zero it was already known that the Earth is a sphere with a circumference of about 40,000 kilometers. Astronomy has been practiced all over the world for thousands of years and was seen as vital to life. The astronomer, often a high priest or an advisor to the ruler, held power. And predicting eclipses was the ultimate proof of his skill.

### ***Our lives are ruled by the stars***

The sky is a complex but reliably running clock. The Sun rises in the east and sets in the west, each day at a slightly shifted position. Days grow longer and shorter. The Moon goes through all its phases of illumination about thirteen times a year. The fixed stars rise a few minutes earlier each day. And then there are a few bright stars, *planētēs* in Greek, which, like the Sun and the Moon, trace a complex path against the background of the fixed stars. Yet they too move in a predictable way.

This reliable clock was vital to humanity. “When the star Sirius becomes visible before sunrise, the Nile floods.” “When day and night are equal in length, we sow or harvest.” “When the Sun sets behind that rock, the bison migration begins.” “My wife has her period at full Moon.” It is clear: what happens above us governs our lives. It is therefore completely logical to extend this to personal and collective events. “When the planet Jupiter overtakes the planet Saturn, a king is born.” “When the planet Mercury temporarily moves backward across the sky, it is best not to do business.” “Whoever is born when the Sun is in the constellation Aries, while Gemini is rising and the planet Mars stands opposite the Sun in the sky, will become famous but die young.”

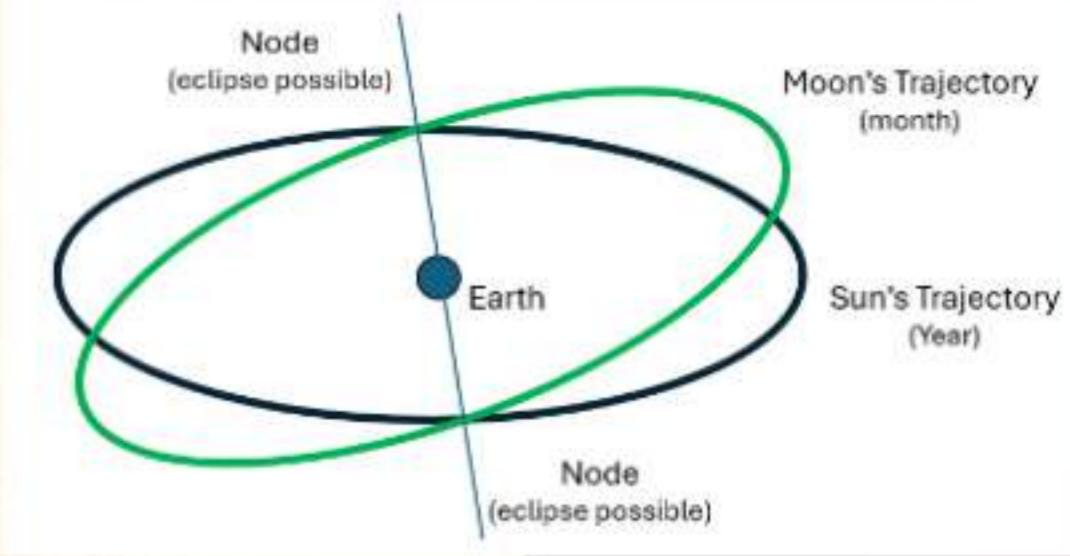
If everyone believes that the predictable astronomical clock governs our complex and chaotic lives, then the specialists who can read the sky and translate it for ordinary mortals become indispensable. But those people must prove that they truly understand the heavens. And that is where eclipses come into play.

### ***The ultimate test of competence: predicting eclipses***

Ancient astrologers struggled with two disruptions of the regularity of the sky that threatened their status. One problem was the sudden appearance and then, after a few weeks, the disappearance of comets. Comets were completely unpredictable, so the solution was to regard them as ominous interventions by the gods in human affairs: an epidemic, the death of a king. Or an approaching invasion of England by the Normans.



Solar and lunar eclipses did not lend themselves well to such an exception. After all, it was clear that eclipses follow a regular pattern. As we showed in newsletter 6, the Sun and the Moon each move along their own path across the sky: the Sun in one year and the Moon in one month. Twice a year, the Sun reaches a position that intersects with the Moon's path, and then there is a high chance of an eclipse.



Of course, the chance of a solar eclipse is small: only part of the Earth is completely darkened. But a lunar eclipse is visible from well over half of the Earth, and solar eclipses usually occur about two weeks before or after a lunar eclipse. Predicting eclipses therefore seems like a solvable problem. And the stakes were high, because such a spectacular phenomenon in the sky must surely have consequences for us here on Earth.

### ***The wobbling lunar orbit makes things difficult***

Let us take one more look at the diagram showing the paths of the Sun and the Moon across the sky. "Our" eclipse occurs on 12 August 2026, but if this diagram were correct, all solar and lunar eclipses would have to occur on or around 12 August or, with a half year difference, around 10 February. But when we look up the dates of the next solar eclipses, we see that this is not the case.

13	17 Feb 2026	Annular Solar Eclipse
14	12 Aug 2026	Total Solar Eclipse
15	6 Feb 2027	Annular Solar Eclipse
16	2 Aug 2027	Total Solar Eclipse
17	26 Jan 2028	Annular Solar Eclipse
18	22 Jul 2028	Total Solar Eclipse

There are solar eclipses in both February and August, but they shift a few days forward each year. The cause lies in the Moon's orbit around the Earth. The apparent path of the Sun across the sky is always the same, but that of the Moon shifts. The angle with the Sun's path remains the same, but the place in the sky where the paths intersect slowly moves to the left (for Argentine readers, to the right).

Anyone who takes the trouble to record all solar eclipses over a few hundred years can calculate how long it takes for the Moon's orbit to complete one full cycle. The answer: 18 years plus 11 days plus 8 hours. This period is called a [Saros cycle](#) and was already discovered by the Babylonians. On 23 August 2044 we can therefore expect another total solar eclipse, but because of those extra 8 hours it will not occur in Spain, but much farther west, in Canada to be precise.

### ***(Western) knowledge is power***

Just as in our Columbus newsletter, we are once again talking about antiquity, and once again they deserve our respect, with the Babylonians leading the way. All ancient peoples, including the Incas, kept calendars, but not everyone discovered the Saros cycle, as a Tintin comic so nicely.

And then there is China, where the calendar was almost sacred, yet they struggled to keep it accurate. On Twitter you can find an [extensive post](#) about how Western knowledge, brought by the Jesuits, prevailed over indigenous Chinese knowledge and that of hired Muslim experts.



We single out one paragraph that captures everything we have written here about superstition and belief. In 1655, the Jesuit Verbiest faced off against a Chinese expert and a Muslim expert. Even then, the difference was an hour or less, and it was a matter of life or death:

Verbiest predicted that there would be a solar eclipse on January 16, 1665 at 3 PM; Yang predicted 2:15 PM; the Muslim Wu Mingxuan predicted 2:30. As recounted by Aslaksen (2006):

"On the day of the eclipse, the Jesuits were brought into the palace in chains, and everybody watched as the eclipse occurred at 3 p.m. sharp (14:59:54), exactly as the Jesuits had predicted! Unfortunately, the regents were not impressed and on April 15, the Jesuits were sentenced to death. However, the next day a strong earthquake struck Beijing and caused a fire in the Imperial Palace. Together with a comet that had appeared on April 13, this was taken as a sign from Heaven that the sentence was unjust."

### ***One more note on wobbling celestial bodies***

Casting horoscopes for royal babies was common practice in the West until around 1680, long after we already knew how the solar system was structured. Only from the 18th century onward was the science of astronomy separated from predicting the future by the stars, astrology. For astronomers, an important source of income disappeared. Yet astrology still provides a good living for thousands of people.



We conclude this newsletter with an additional section on wobbling celestial bodies that clearly shows how difficult astronomy can be and how flexible astrologers are. The Earth's orbit around the Sun is fixed, but the same is not true for the axis around which the Earth rotates. That axis is tilted by 23.5 degrees relative to the Earth's orbit, and this tilt gives rise to the seasons.

Just as the Moon's orbit slowly rotates while remaining tilted with respect to the Sun, the Earth's axis also stays tilted by 23.5 degrees. That axis itself slowly rotates as well. This does not take about 18 years as it does for the Moon, but about 26,000 years for the Earth. This may seem insignificant, but every 71 years the seasons occur a full day earlier, and after 2,000 years almost a full month earlier. If [Pope Gregory XIII](#) had not reformed the calendar in 1582, "our" solar eclipse of 12 August would have fallen somewhere around 30 August.

Because of this wobbling Earth's axis, the line along which a total solar eclipse can be seen also shifts. Astronomy takes all these and many other factors into account. With [a single mouse click](#), you can know everything about 12 August 2026 in Aguilar de Campoo, Spain.

And the astrologers? They are not troubled by the fact that at the beginning of spring the Sun is no longer in the constellation of Pisces but in Aquarius. It marks the beginning of a new era in human history: the [Age of Aquarius](#).

On to a great 2026,  
Timi, Marjan and René