

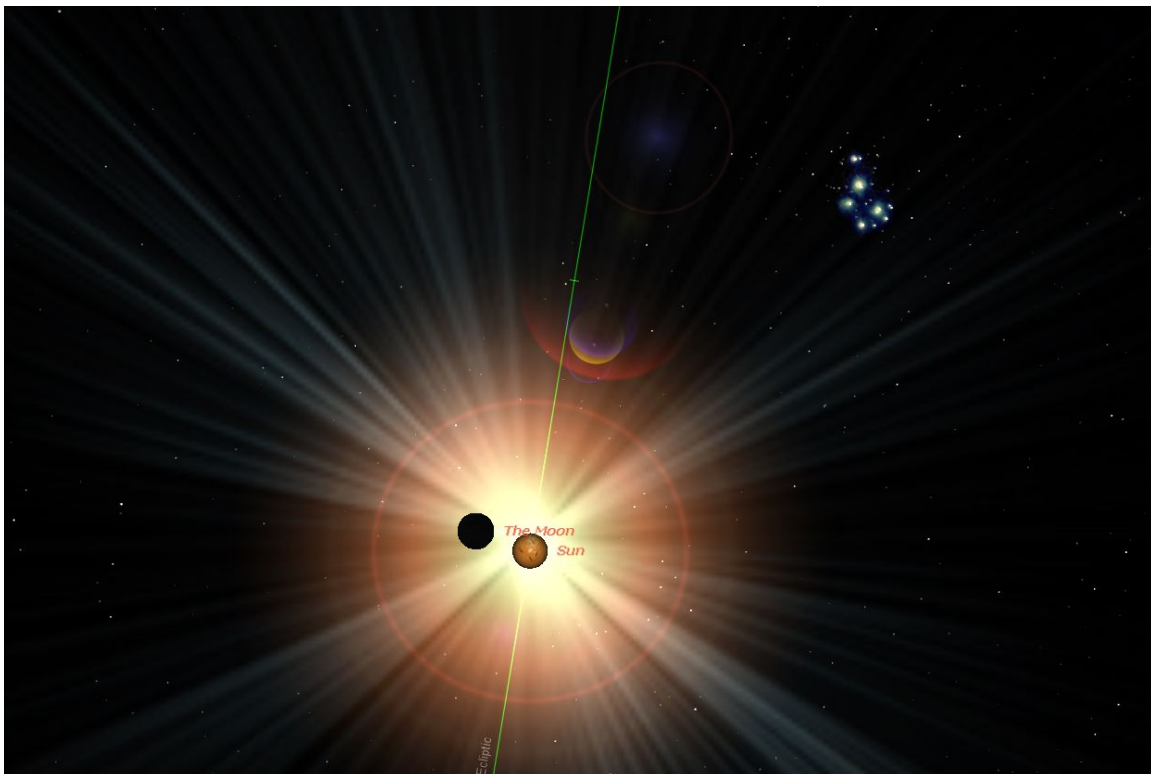
18 Rabbit's Sacrifice, Bolon Yokte', and the Associated Astronomy

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In a recent article for the *Institute of Maya Studies*, Michael Grofe summarizes the evidence for the enigmatic Maya deity named Bolon Yokte' being associated with eclipses (Grofe 2012). These are dates within Classic Maya history, cited in contexts related to historical events or ceremonies. Bolon Yokte' also appears in deep time (past and future contexts) where the eclipse association is non-existent or very approximate. As Grofe remarks, this can be expected with longer astronomical calculations, where small discrepancies can grow into larger ones.

I have looked closely (Jenkins 2009:271-3, 2010) at the astronomy of one of the dates Grofe lists from the historical corpus of dates involving Bolon Yokte'. This is the famous “decapitation” or sacrifice of Waxaklajun Ub'ah K'awil (18 Rabbit) from Copan. Bolon Yokte' is named on a fragment of text from the Copan Hieroglyphic Stairway, as presiding over, or supervising, the act (see my essay “[The Bolon Yokte' Reference on the Copan Hieroglyphic Stairway](#)”). This in itself is intriguing because elsewhere (namely, at Quirigua) it is the king, K'ak Tiliw, who is named as supervising this event, occurring at “the Black Hole.” This may be because K'ak Tiliw was impersonating Bolon Yokte'.

The sacrifice of 18 Rabbit occurred on April 27, 738 (J). A smattering of interesting astronomical events occurred around this date. On April 23, an eclipse occurred above the earth's surface, and therefore was not visible at Quirigua. However, it may have been expected — as being part of the canon of Maya eclipse calculations, some of which were not actually visible for a variety of reasons. From ground level at Quirigua, the near-eclipse, magnified greatly in the following sky-map, was quite close:



The sun and the moon are less than $\frac{1}{2}$ a degree away from each other. Notice the Pleiades in the upper right. Four days later, the sun had shifted up the green line (the ecliptic) closer to the Pleiades. April 27, the day of the sacrifice event, was close to the solar zenith-passage day at the latitude of Quirigua and Copan. The convergence of the Pleiades with the solar zenith-passage day at the latitude of Copan in the 7th century was discussed in my 1998 book *Maya Cosmogenesis 2012*, where charts in Appendix 3 depict the process. The same event recurs over the latitude of Chichen Itza in the 21st century, coordinated with the era of the 2012 period-ending in the Long Count. As reconstructed in my 1998 book, the Pyramid of Kukulcan encodes this alignment of the sun and the Pleiades uniting in the zenith (Jenkins 1998: 69-80).

As recounted in my essay "[The Bolon Yokte Reference on the Copán Hieroglyphic Stairway](#)" there is some disagreement among scholars about the ordering of the text blocks in the passage on the Copan Hieroglyphic Stairway that pertain to Bolon Yokte's involvement in 18 Rabbit's sacrifice rite. In any case, we can see that the April 23 near solar eclipse and the May 8 partial lunar eclipse nicely bracket the April 27 sacrifice event, and thus either one provides a good example for Grofe's association of Bolon Yokte' with historical eclipse dates. Curiously, the May 8, 738 partial lunar eclipse (at Copan/Quirigua) is 20 days less than one Metonic cycle after the May 28, 709 lunar eclipse (at Palenque), which in turn is 8 tropical years plus three Metonic cycles beyond the May 27, 644 eclipse date alluded to on Tortuguero Monument 6.

These circumstances lead one to speculate on why Bolon Yokte' is referenced on or near eclipse dates, as well as on Creation dates such as both of the 13.0.0.0.0 period endings (in 3114 BC and in 2012 AD). An eclipse occurs on November 28 of 2012, and Grofe suggests that perhaps Bolon Yokte''s association with 2012 stems from a near approximation of eclipse tables that accumulated greater error when stretched forward many centuries. Another possibility is that Bolon Yokte' rules a process the underlies, or manifests in, *any* event that conforms to the meaning that the Maya read into eclipses. In other words, the same ideological construct could manifest in a variety of astronomical events. For example, the inferior conjunction of Venus with the sun, culminating 4 days later with the first appearance of Venus as morningstar, is depicted as a rebirth or apotheosis of Quetzalcoatl in the Central Mexican myth. But in the Classic Period Maya myth, the Maize God (who has associations with Quetzacoatl and One Hunahpu) is reborn when the sun passes through the Gemini Crossroads (of Milky Way and ecliptic) above Orion and the three hearthstone stars. Same meaning, different astronomy.

I believe that Bolon Yokte' is the chief of the Underworld Lords, but has a deep relationship with GI and/or One Hunahpu. This is similar to the relationship between Quetzalcoatl and Tezcatlipoca. Tezcatlipoca is a dark god of war, and he sacrifices (or betrays) the Solar Lord of light. His role is essential to the dynamic interplay between sacrifice and rebirth, of the integration and transcendence of opposites, and therefore of regeneration. Thus, K'ak Tiliw impersonates Bolon Yokte' to sacrifice the great Solar Lord, 18 Rabbit, whose head rolls into the "Black Hole" (the dark rift in the Milky Way, mirroring Jupiter's celestial alignment on that date) like One Hunahpu's head, in the *Popol Vuh* story, is hung in the crook of the calabash tree at the Milky Way Crossroads.

On the other side of the ritual process, Lord Jaguar of Tortuguero plans for himself to be invoked to appear in 2012, possibly to sacrifice or triumph over Bolon Yokte'. This mystery play, as in the *Popol Vuh*, requires a sequential triumph of the

darkness over light (One Hunahpu's sacrifice at the hands of the Underworld Lords) and then the triumph of the light over darkness (the Hero Twins sacrificing the Underworld Lords followed by the resurrection of their father, One Hunahpu). This same primordial mystery play script seems played out by Lord Jaguar, who died (was "no longer seen") when Jupiter was at the dark rift / Crossroads (on May 17, 679 J). Perhaps significantly, this occurred on the day 6 Eznab, which means "sacrificial knife" — suggesting that Lord Jaguar was sacrificed or performed a self-sacrifice. Similarly, 59 years later 18 Rabbit was sacrificed (willingly?) when Jupiter was at the same dark rift/Crossroads position.

These various king deaths and sacrifices may have been ideologically predicated upon the future rebirth of the Era to occur on 13.0.0.0 in 2012. 18 Rabbit claimed he'd be back, or present for, the 10th Baktun arrival, to occur some 130 years in the future. K'ak Tiliw's death astronomy references, in the iconography and astronomy of Zoomorph B (see my "[The Milky Way and Quirigua Zoomorph B](#)"), the sun's alignment with the dark rift /Crossroads. It now seems that Lord Jaguar was expecting to be present for the Bolon Yokte' ceremony in 2012, when the sun would be in alignment, on the solstice, with the dark rift /Crossroads. The astronomy underlying these various events helps us understand what is going on here, and why Bolon Yokte' could be associated with both eclipses and the alignment of the solstice sun and the dark rift /Crossroads in 2012: he alternately *presides over* **and** *experiences* the sacrifice required for the opposites to be united, for transcendence to occur, and for the war of changing gods to culminate. This leads to world-renewal, resulting in the next World Age, or Era, being born.

Lunar Eclipses on Tortuguero Monument 6 and in Palenque Temple XIX

In my work on the Temple XIX inscriptions, I noticed that the three related dates on the stucco part of the pier are separated by even multiples of the lunar sidereal cycle (1,800 days). I subsequently noticed that the first date in the sequence (June 12, 709) is preceded 15 days by a full lunar eclipse:



Just after midnight, May 28, 709 (J). This eclipse occurred high in the sky at the Milky Way / ecliptic Crossroads in Sagittarius, at the southern terminus of the dark rift in the Milky Way.

In early 2009, Michael Grofe noticed that a full lunar eclipse occurred 3 days before the third date on Tortuguero Monument 6, on May 27, 644 AD. That lunar eclipse is apparently alluded to in the text with a “crossed lances” symbol, which Grofe argues refers to eclipses. In the Palenque Temple XIX text, the 709 date (15 days after the lunar eclipse) is referenced with a “fish-in-the-heron’s-mouth” glyph diagnostic of GI. The idea of biting or swallowing is preserved here, and lunar eclipses are referred to in Maya thinking as the moon being bit. Also, GI’s “earth touching” date in 2360 BC is referenced in the Temple XIX South Platform text, as well as in the Temple of the Cross tablet. This “rebirth” date for GI places the sun at the same sidereal location as the lunar eclipses discussed here — at the same Crossroads of the Milky Way and the ecliptic that the sun will occupy *on the solstice* on the period-ending in 2012.

It is thus striking that the second date in the sequence of three interrelated dates from the stucco pier in Palenque’s Temple XIX is 9.14.0.0.0. On this date, the sun was positioned at the same Crossroads of the Milky Way and ecliptic (see Jenkins 2000). Grofe (n.d.) argues that this same date, on Copan Stela C, is related to the lunar Metonic cycle and therefore a date 19 tropical years later on Copan Stela F. The third date at Palenque occurs another half-Hotun beyond 9.14.0.0.0. Since the interval between the first and last dates is thus one Hotun (1,800 days), and one Hotun is approximately 65 lunar sidereal cycles, the sidereal position of the moon will be close to where it was on that first date in 709 AD.

The two eclipse dates discussed here are related by the sidereal position at which they occurred as well as by the tropical year (of 365.2422 days). May 27, 644 and May 28, 709 — they are separated by within one day of a precise Tropical Year interval of 65 years. The first eclipse would have been viewable beginning just after midnight on the morning of May 27, 644 and the second eclipse date began before midnight (local time) on May 27, 709 and maximized just after midnight on the morning of May 28. The actual interval is thus almost exactly one day in excess of a precise Tropical Year interval (65 x 365.2422 days). The next date in this sequence, which also should target a lunar eclipse at the dark rift / Crossroads, is May 29, 774 (1 Akbal, 9.17.3.7.3). And it does. The previous date in the sequence (May 26, 579) also does. See Appendix 1, below, for more.

The 644 eclipse date appears to be confirmed, according to Grofe’s reading, by the text on Tortuguero Monument 6. The 709 date assumes a bit more indirect context. It occurs 15 days before the actual date recorded on the stucco pier, but this circumstance actually highlights a nice polarity between the moon’s positions at the two celestial Crossroads (of Milky Way and ecliptic). On June 11-12, the moon was new and near the Gemini Crossroads; 15 days earlier on May 28 it was full (and eclipsed) at the Sagittarian Crossroads. In addition, the “fish in mouth” glyph associated with the date in the stucco pier text (at C1) echoes the old “biting” metaphor for eclipses, and the GI association of this emblematic complex also evokes the same Crossroads where the lunar eclipse occurred (15 days earlier on May 28, 709), because that is also where GI had his “earth touching” (on November 8, 2360 BC). A partial solar eclipse ([Cat. #06464](#)) occurred on May 14, 709 over Eurasia, indicating that a solar eclipse may have been expected by the Maya that was more closely timed to the first date on the stucco pier (May 12, 709).

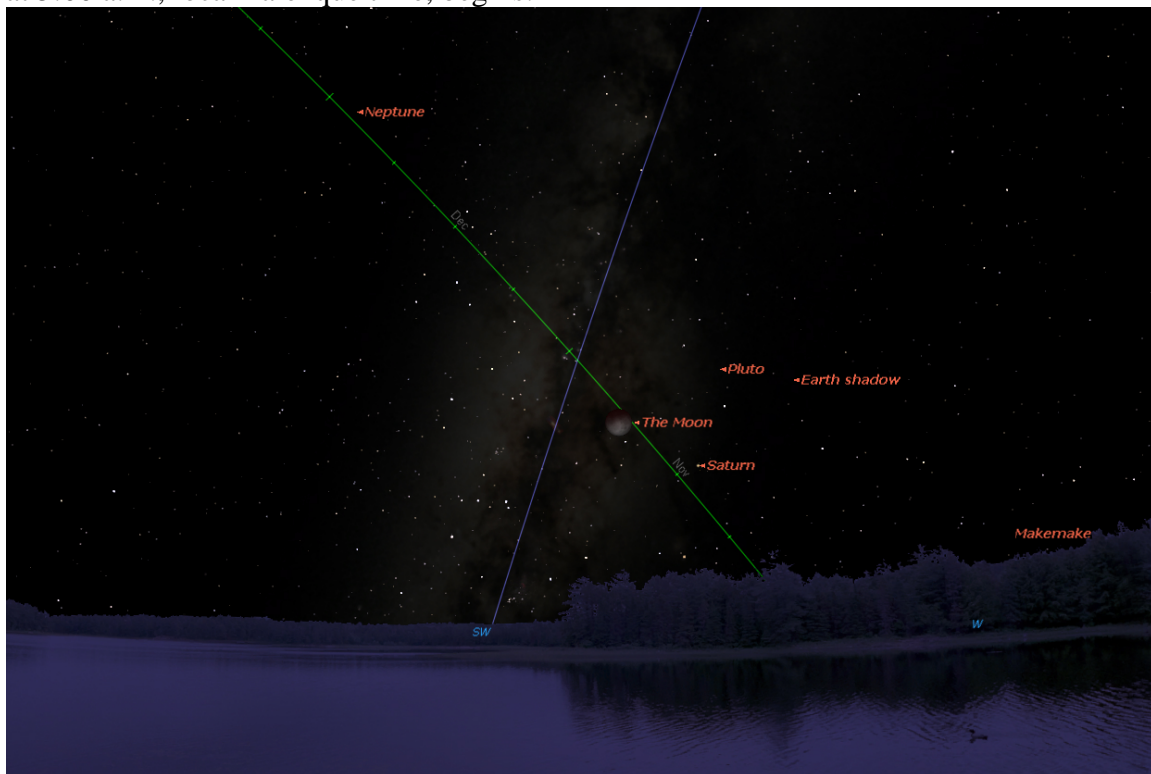
Appendix 1. Lunar eclipses at the Crossroads during the late Classic Period

Because these are all dates of a full-moon lunar eclipse at the Sagittarian Crossroads, they position the sun at the Gemini Crossroads and therefore define the date of the sun's alignment with the Sagittarian Crossroads exactly $\frac{1}{2}$ of a tropical year later. It is striking that all of these lunar eclipses would have been visible over Mesoamerica. The two known references to historical texts, in 644 and 709, suggest an interest in the Dark Rift / Crossroads as an anchor point for astronomical reckoning. It also likely had a strong association with ideological Creation Myth themes. (It is the location of the solstice sun on 13.0.0.0.0 in 2012.) Further investigation may reveal that the other three dates are connected to dates in Maya inscriptions. The corpus is large and often obscure; for example, the 709 date is embedded in a lunar sidereal cycle on the stucco pier of Palenque's Temple XIX — dates which are often not included in summary date lists.

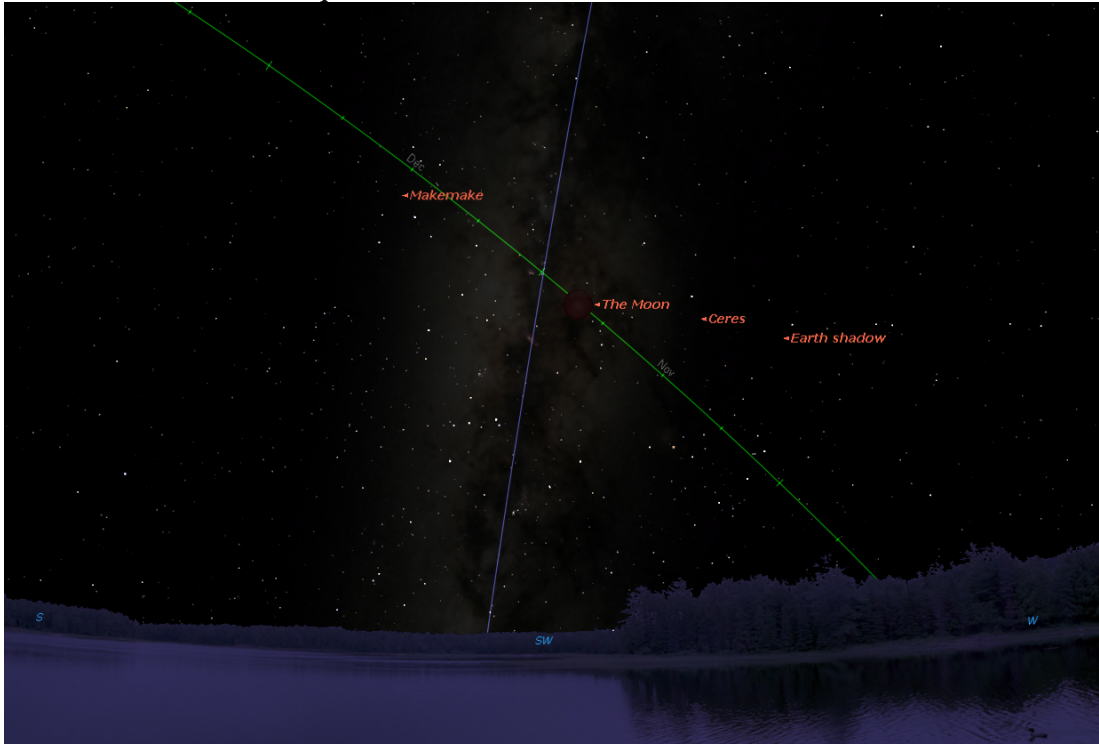
<u>Lunar eclipse at DR / Crossroads</u>	<u>Era or Text</u>
1. May 24, 514 (9.3.19.10.17)	Reign of Ahkal Mo' Naab
2. May 26, 579 (9.7.5.10.0)	?
3. May 27, 644 (9.10.11.9.6) –3 days	Tortuguero Monument 6
4. May 28, 709 (9.13.17.9.0) –15 days	Palenque stucco pier (T. XIX)
5. May 29, 774 (9.17.3.7.7)	Quirigua?

The dates are in the Julian calendar. Dates 3 and 4 have known textual connections.

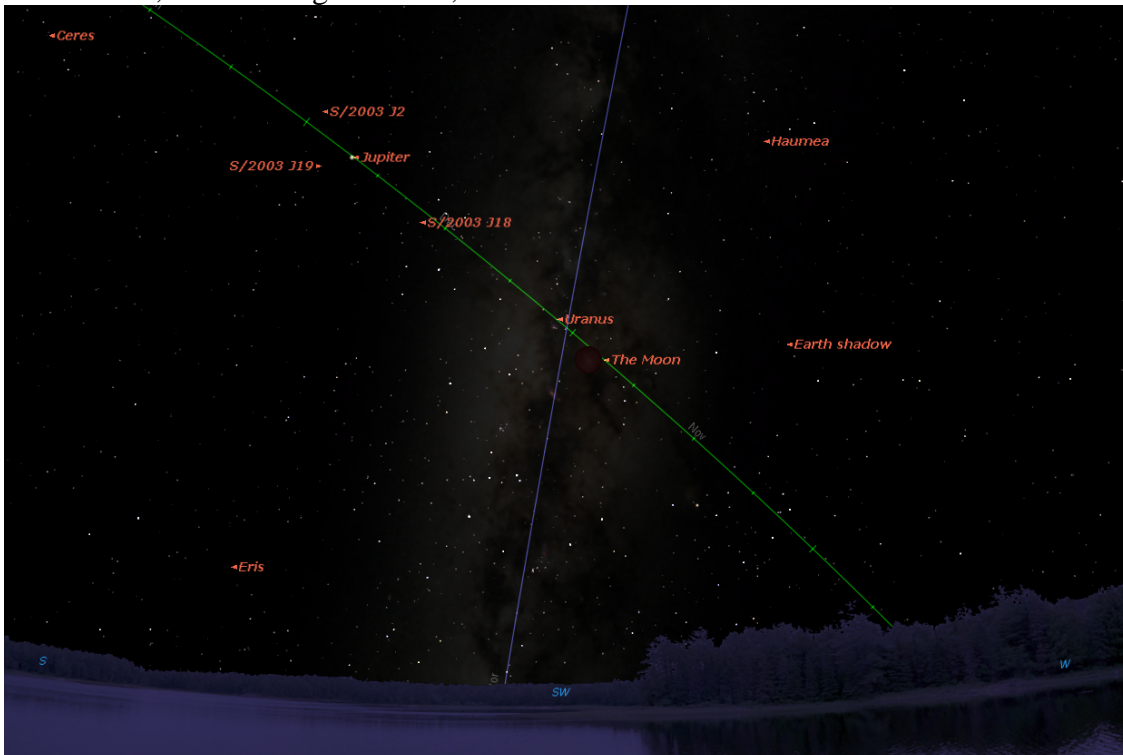
1. May 24, 514. <http://eclipse.gsfc.nasa.gov/5MCLEmap/0501-0600/LE0514-05-24P.gif>
at 5:00 a.m., local Palenque time, begins:



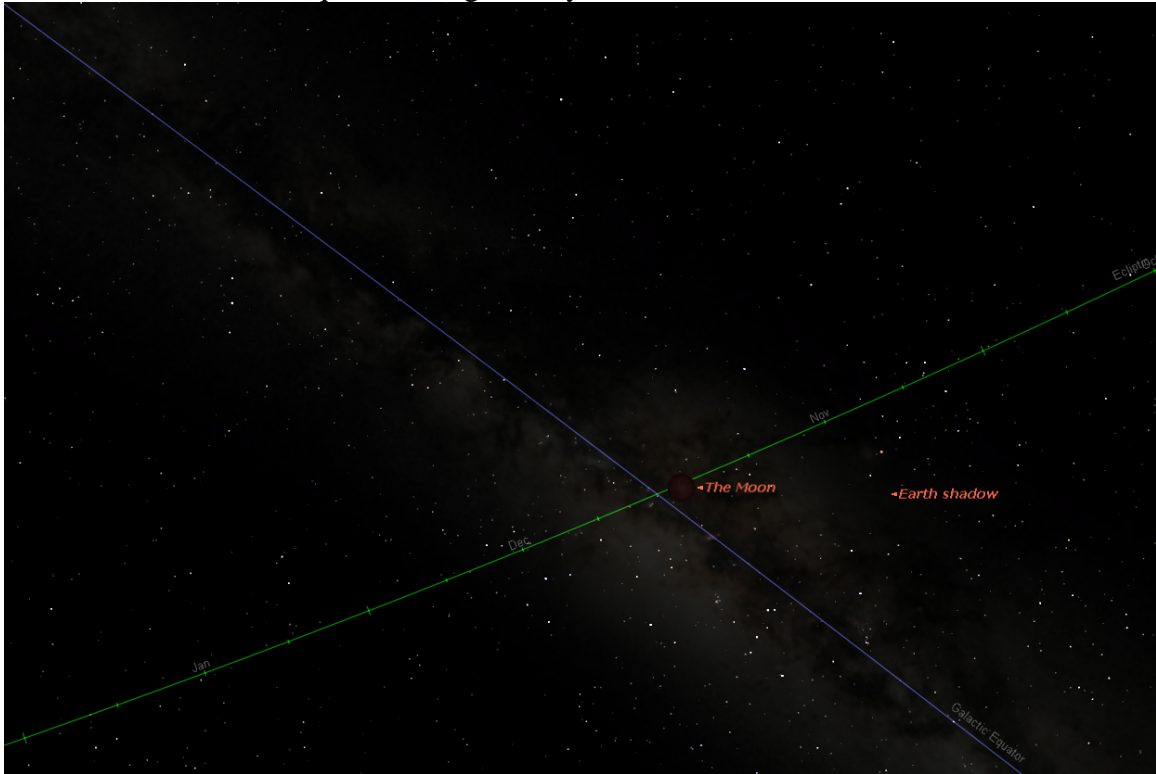
2. May 26, 579. <http://eclipse.gsfc.nasa.gov/5MCLEmap/0501-0600/LE0579-05-26T.gif>
at 4:00 a.m., local Palenque time, maximum:



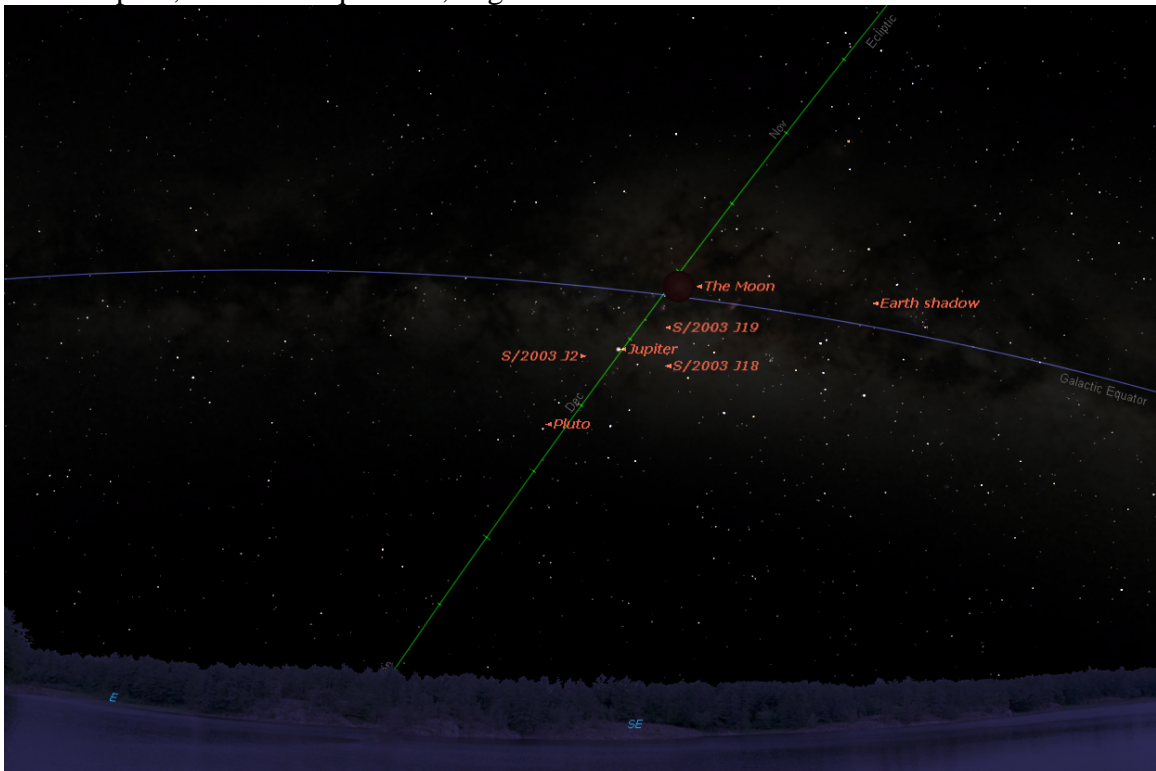
3. May 27, 644. <http://eclipse.gsfc.nasa.gov/5MCLEmap/0601-0700/LE0644-05-27T.gif>
at 4:00 a.m., local Tortuguero time, maximum:



4. May 28, 709. <http://eclipse.gsfc.nasa.gov/5MCLEmap/0701-0800/LE0709-05-28T.gif>
at 1:00 a.m., local Palenque time, high in sky



5. May 29, 774. <http://eclipse.gsfc.nasa.gov/5MCLEmap/0701-0800/LE0774-05-30T.gif>
at 11:00 p.m., local Palenque time, begins:



The process is inching forward roughly one day every 65 years. This is, in essence, an approximation of the precessional shift of 1 day every 71.5 years. 6.5 years are lost with every cycle and so after 11 cycles (715 years) another year must be added. After 1430 years, 2 years must be added. From the 579 date, 1432 years added brings us to the year 2011. We should be 22 days forward from the May 26 date, thus approximately June 17, 2011. This is roughly an eclipse half-year after the December 21, 2010 total lunar eclipse at the Gemini Crossroads and 3 eclipse half-years (520 days) before the November 28, 2012 partial lunar eclipse.

Additional eclipses dates in this sequence can also be explored, before 514 AD and after 774 AD, but a given 65-year interval will eventually fall out of relevance as the eclipses fall under the horizon or fall out of precision. However, there are many 65-year cycles that are constantly coming into phase and falling out of phase. More research on these patterns is needed, looking at dates at many Maya sites. Of immediate relevance is the relationship between the Tortuguero eclipse date (in 644 AD) and the Palenque eclipse reference (in 709 AD). The *sidereal location* of the lunar eclipses is most relevant to an inquiry. Also, Bolon Yokte' and a celestial caiman is involved in the Tortuguero Monument 6 text whereas GI is indicated in the Palenque stucco pier text. What are the relationships between these deities? Work has been done on this question, and is continuing.

This essay, with its appendix, is offered as a reference point for the sky-maps, Maya dates, and NASA data on lunar eclipses.

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art by Curt Joy