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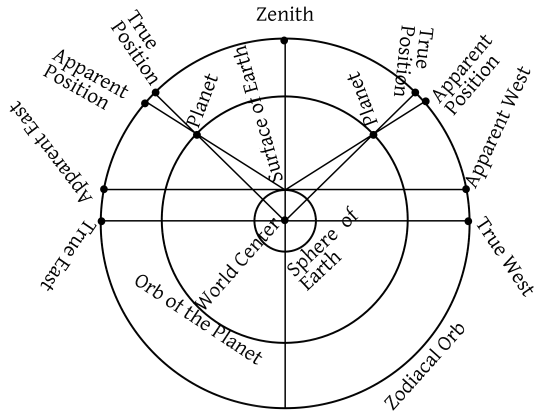
two poles of the zodiacal orb, which happens when the planet is at the midpoint between ascendant and descendant. If the planet is at mid-heaven at the zenith point, then there will be no parallax, neither in longitude nor in latitude. In all other positions, the parallax will be a combination of the longitude and latitude [components].

[4] The maximum parallax of the Moon is about $1+\frac{1}{2}+\frac{1}{4}$ ° when it is at the nearest distance, and 54 when it is at the farthest distance. During a lunar eclipse, it is never more than 1°;4′. The maximum solar parallax is 3′ when the Sun is at the nearest distance and bordering on one minute when it is at the farthest distance. Here follows an illustration of parallax—and God is all-knowing:



[Figure 1]

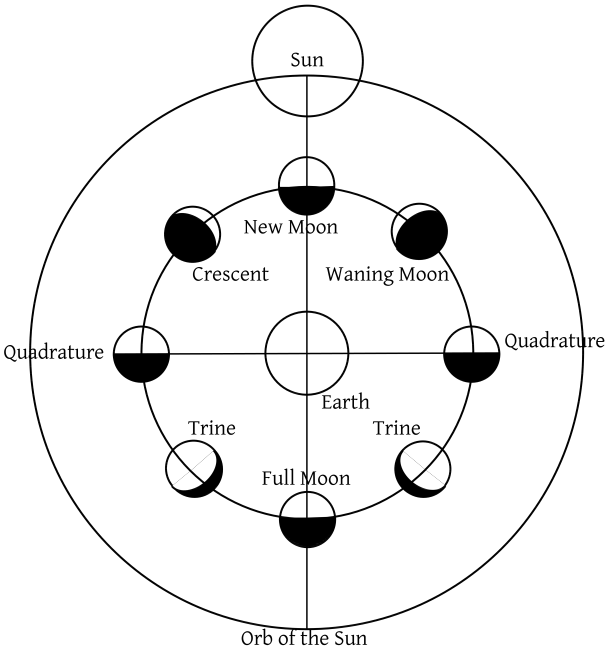
CHAPTER TWELVE

On the Reason for the Increase and Decrease in the Moon's Light

[1] The body of the Moon is a spherical body that is thick and smooth but not, in actuality, luminous. Every body that is thick and smooth, when facing a luminous body, will be illuminated by the rays [of that luminous body], and, like mirrors, water, etc., reflect those rays onto things facing it. Likewise, the Moon is illuminated by facing the Sun

and reflects its rays. One half [of the Moon] always faces the Sun, and therefore one half of it is illuminated while the other half is dark and of its actual color.

[2] At conjunction, the half that faces the Sun is upward, and the half that faces us is in its actual color and dark; therefore, the Moon is said to be obliterated. As it departs from conjunction, the part of the illuminated half that faces us and is in the shape of a crescent is enclosed by two semicircles: one semicircle dividing illuminated from dark; and the other semicircle dividing the visible from the invisible. The farther the Moon gets from the Sun, the greater the crescent shape becomes, until it reaches quadrature; [then] one half of the Moon will be visible, and the semicircle dividing illuminated from dark appears as a straight line dividing the Moon into two halves. Furthermore, when it reaches opposition, the illuminated half, which faces the Sun, will face us exactly the same, and the Moon will then be full. After it departs from opposition, contrary to the initial state, the Moon begins to become dark, and [its dark part] grows larger until the second quadrature, when [the dark part] is half. After this, when it reaches the "obliterated state" [at conjunction], it has returned to the initial state. Here follows an illustration of the Moon's positions with respect to the Sun:



[Figure 1]

CHAPTER THIRTEEN
On the Reason for Lunar and Solar Eclipses, and the Interval Between Two Lunar or Two Solar Eclipses

[1] **Lunar Eclipse.** Since the light of the Moon is from the Sun, whenever the Earth interposes between the Moon and the Sun, it blocks the Sun's light from the [Moon], so that it appears in its actual color. This situation is called a lunar eclipse. It is of course conditional in this case that the Sun, Moon, and Earth, all three, be aligned with one another. Since the Sun is always on the zodiacal equator and the Earth is at the place of the equator's center, inasmuch as the Earth's center is the center of the zodiacal equator, then whenever the Moon is in opposition and does not have much latitude, it will fall into alignment with the Sun and the Earth, and then the lunar eclipse will occur. But if [the