

Principal Anomalies (Inequalities) in Observed Motions

Sun

- 1. Sun moves faster along parts of the zodiac and slower along others, resulting in 94½ days from vernal equinox to summer solstice and 92½ days from summer solstice to autumnal equinox.**

(1a. The length of a solar day (from one noon to the next) deviates from mean solar time by as much as 16 minutes over the course of a year.)

Moon

- 1. Moon moves faster along parts of its orbit around the Earth and slower along others, with a maximum at perigee and a minimum at apogee.**
- 2. The line of apsides (between apogee and perigee) advances 3 deg per revolution on average and the line of nodes (along which the plane of the lunar orbit intersects the plane of the ecliptic) regresses around 1½ deg per revolution on average, or 18 years for a complete circuit.**

Planets

- 1. Like the Sun, each planet moves faster along parts of the zodiac and slower along other parts; the angular velocity of Mars, for example, appears to be 40 percent faster when it is in Capricorn than when on the opposite side in Cancer, and the pattern repeats every 687 days.**
- 2. Periodically, each planet comes to a halt and then moves retrograde, from east to west, for a few days before coming to a halt again and then resuming motion from west to east; in the case of Mars, for example, this occurs every roughly 780 days.**