

# Section I. The Nighttime Sky and Historical Astronomy

**Note.** In this section, we briefly cover what you see when you look at the night sky and some of the ideas about this predating Isaac Newton (around 1700).

## Chapter 1. The Essence of Astronomy

**Note.** The “celestial sphere” is the concept by which the objects in the sky are thought of as lying on the surface of a sphere with the Earth at its center.

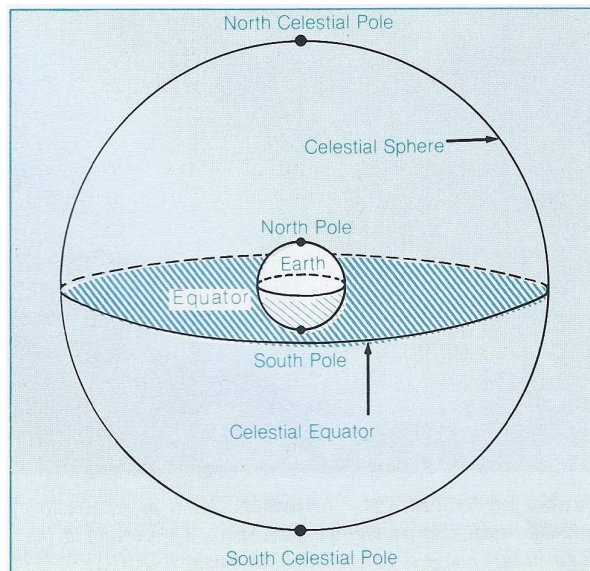


Figure 1.8, Page 8.

**Note.** An *astronomical unit* (denoted “AU”) is the mean distance of the Earth from the Sun and equals  $1.5 \times 10^8$  km = 150,000,000 km, or  $9.3 \times 10^7 = 93,000,000$  miles.

We also have the following distances from the Sun:

Planet	Distance (AU)
Mercury	0.39
Venus	0.72
Earth	1.0
Mars	1.5
Jupiter	5.2
Saturn	9.6
Uranus	19.2
Neptune	30.1
Pluto	39.4

**Note.** A *light-year* is the distance light travels in one year. It equals  $6 \times 10^{12}$  miles.

We also have the following distances from the solar system:

Object	Distance (light-years)
Nearest Star	4.3
Center of our galaxy	28,000
Andromeda Galaxy	2,000,000
Farthest Galaxy	$\approx$ 12 billion

**Note/Warning.** *Astrology* is the belief that human lives are influenced by the configurations of heavenly bodies.