For sites in the equatorial regions, the final value will often require one more step. In parts of Hawaii (say, at latitude 20° north), at noon on the first day of summer, the Sun is north of an observer. (Hawaii is the only state in which one can observe the Sun directly overhead or to the north.) The angular height of the Sun above the southern horizon is 90° – 20° + 23.5° = 93.5°. The angular height of 93.5° above the southern horizon is 3.5° north of the point directly overhead. It is equivalent to 86.5° angular height above the northern horizon.

Angular height: The "angular height" of the Sun refers to the angle formed by a line from the Sun to your eyes and the line from your eyes to the point on the horizon directly below the Sun. This angle is a measure of how "high" in the sky the Sun appears at that moment. "Higher" in the sky means only that we see it higher above the horizon, not that it is actually farther away from the Earth.

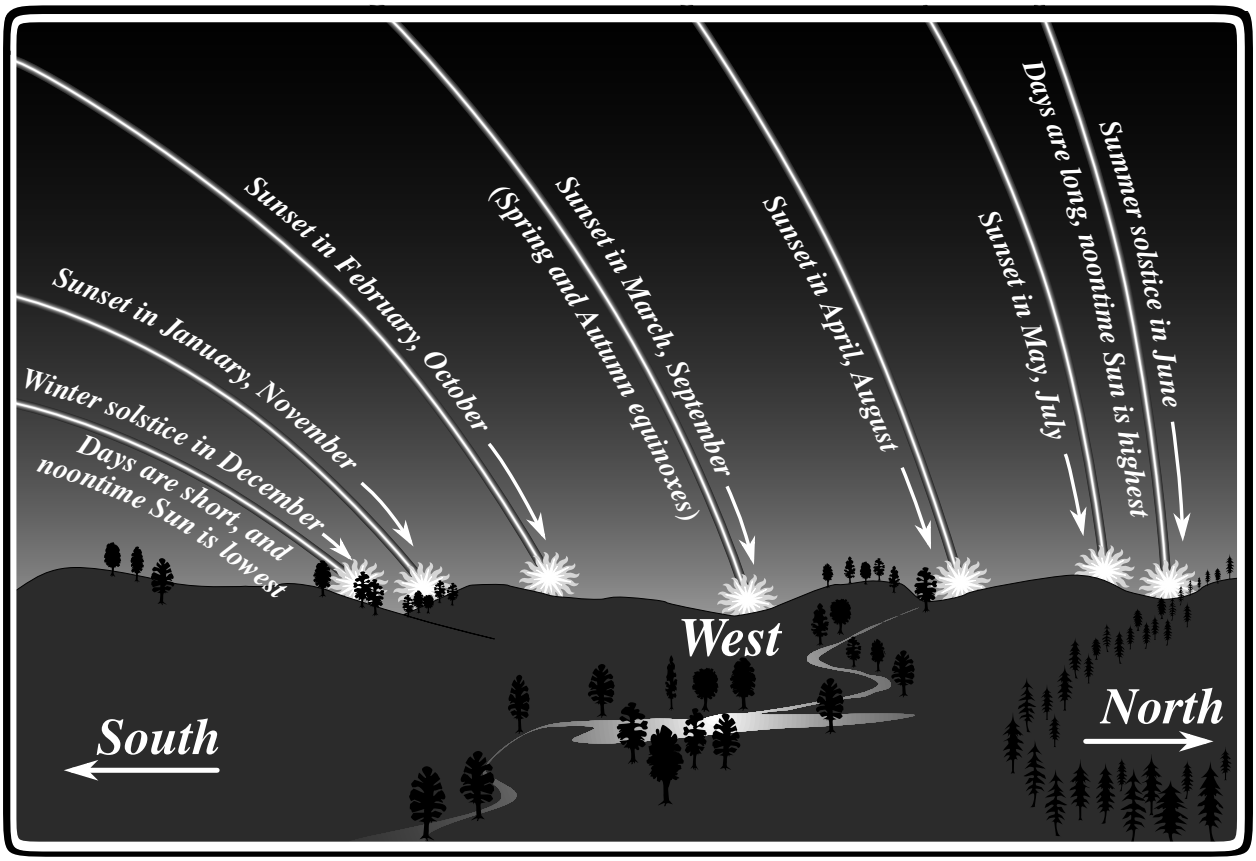

Figure 1: Varying positions of the setting Sun throughout the year for a location in the northern hemisphere north of the Tropic of Cancer. White lines represent the path of the Sun in the sky as it approaches sunset each day.