

June 2022 Sky Events

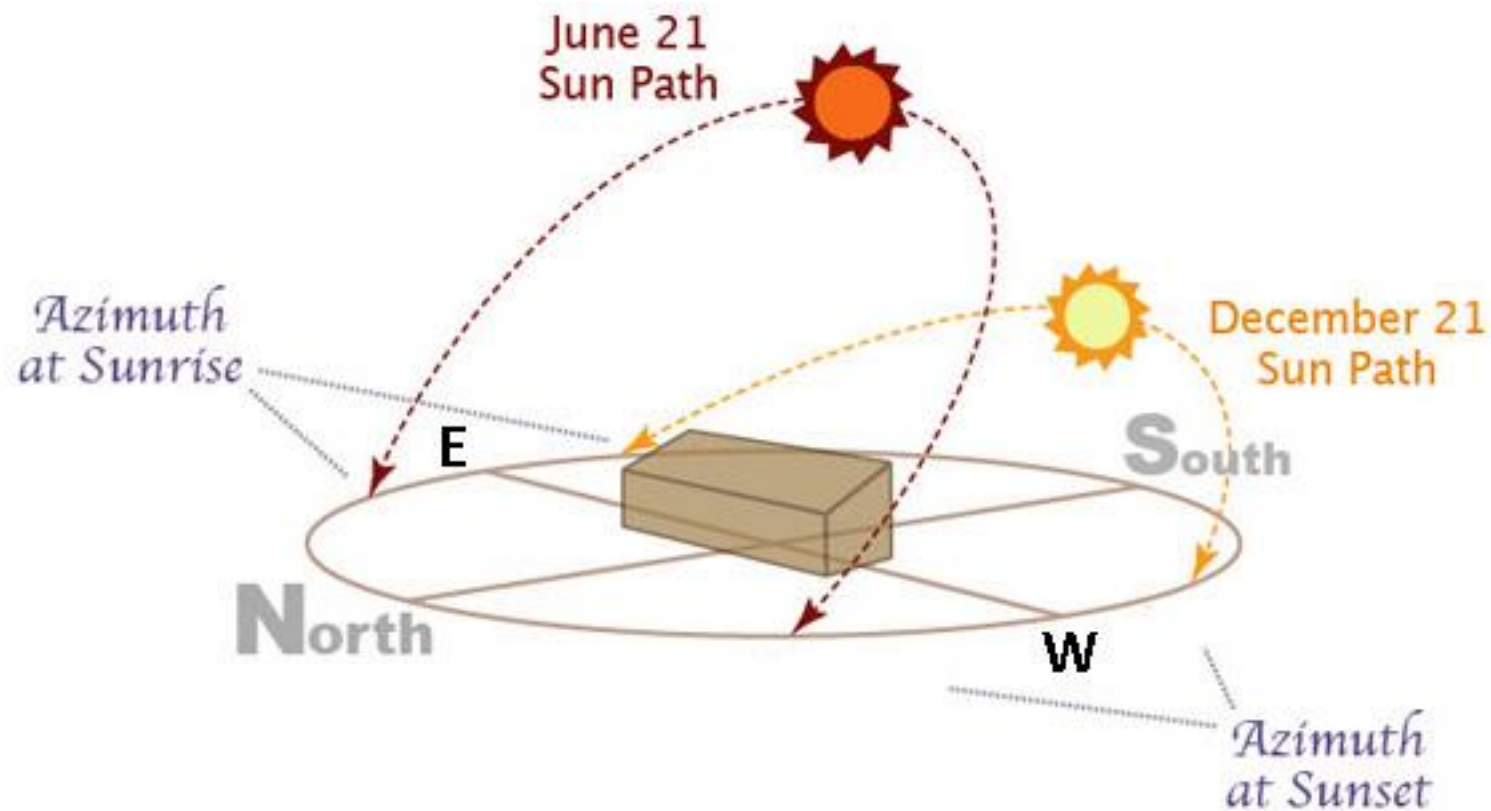
June 21st Summer Solstice

- ★ The northern hemisphere's summer solstice occurs on **Tuesday, June 21st, at 5:14 a.m. EDT**, making it the first full day of summer. This marks the beginning of summer in the northern hemisphere, but it's the start of winter in the southern hemisphere.
- ★ It's the longest day (and shortest night) of the year in the northern hemisphere.
- ★ **The Sun's position on the summer solstice in the Asheville area reaches two extremes in azimuth and altitude (the following values are rounded):**
 1. First, the Sun rises 30° north of east and sets 30° north of west on the summer solstice, compared to 30° south of east and 30° south of west on the winter solstice; that's a 60° azimuth swing over 6 months.
 2. Next, the Sun rises 78° above the horizon at high solar noon on the summer solstice, compared to only 31° above the horizon on the winter solstice; that's a 47° altitude swing over 6 months (Earth's $23\frac{1}{2}^\circ$ axial tilt times 2).

June 2022 Sky Events

June 21st Summer Solstice

- ★ **Translation:** At the summer solstice, the Sun takes not only a longer path across the sky but also a much higher path across the sky, resulting in a much longer daylight period, with the Sun's radiation at a more intense angle.

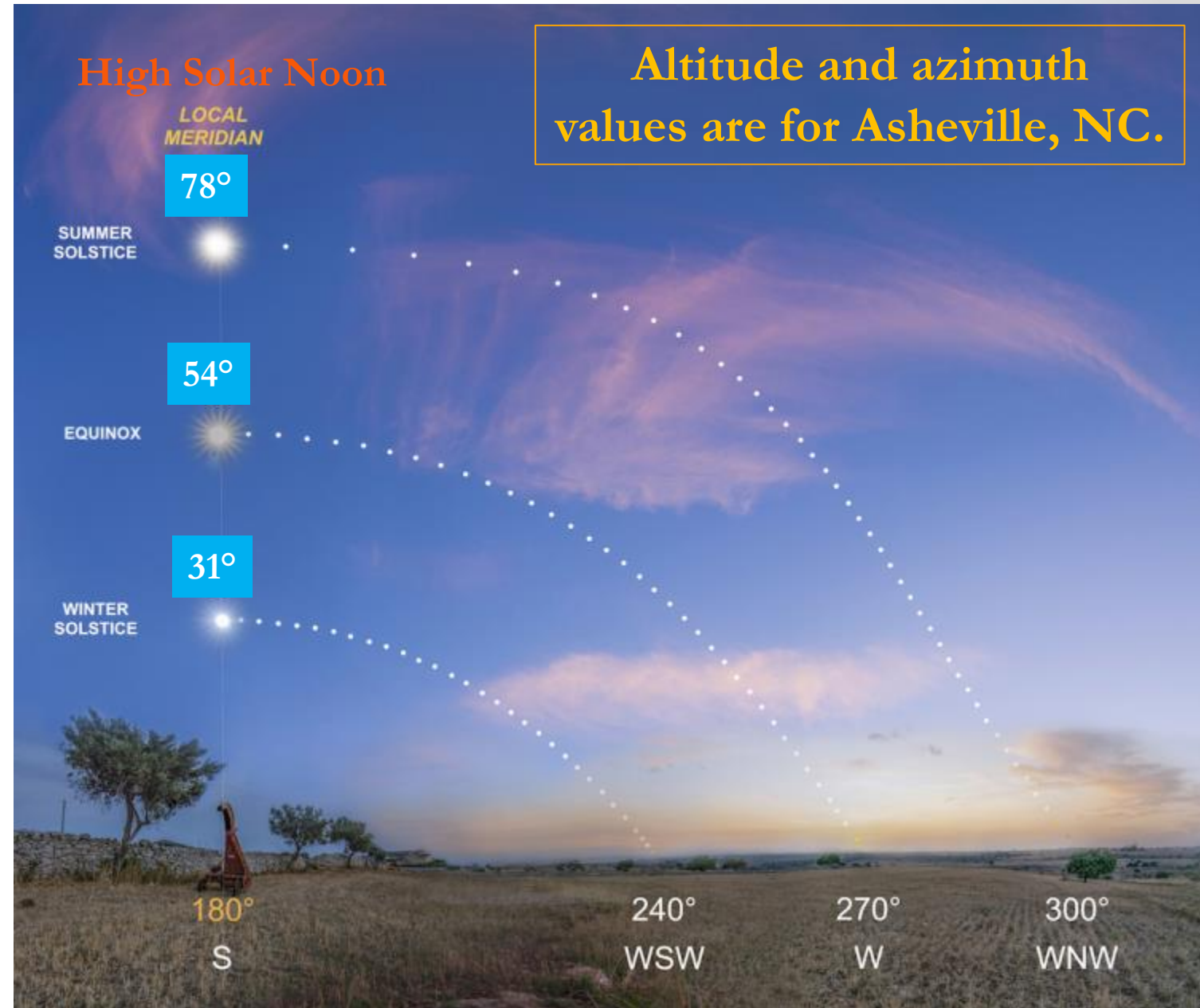


June 2022 Sky Events

June 21st Summer Solstice

The illustration to the right shows both the Sun's altitude above the horizon at "high solar noon" and its setting azimuth (western portion of the sky) throughout the seasons – from Asheville, NC, whose latitude is approximately 35.6° north.

Notice that the Sun only sets due west at the equinoxes, and that it rises some 47° higher in the sky at the summer solstice compared to the winter solstice!



June 2022 Sky Events

June 21st Summer Solstice

Reason for the Seasons:

It's both the Earth's $23\frac{1}{2}^{\circ}$ axial tilt and its orbit about our star that cause the seasons.

