

# June 2023 Sky Events

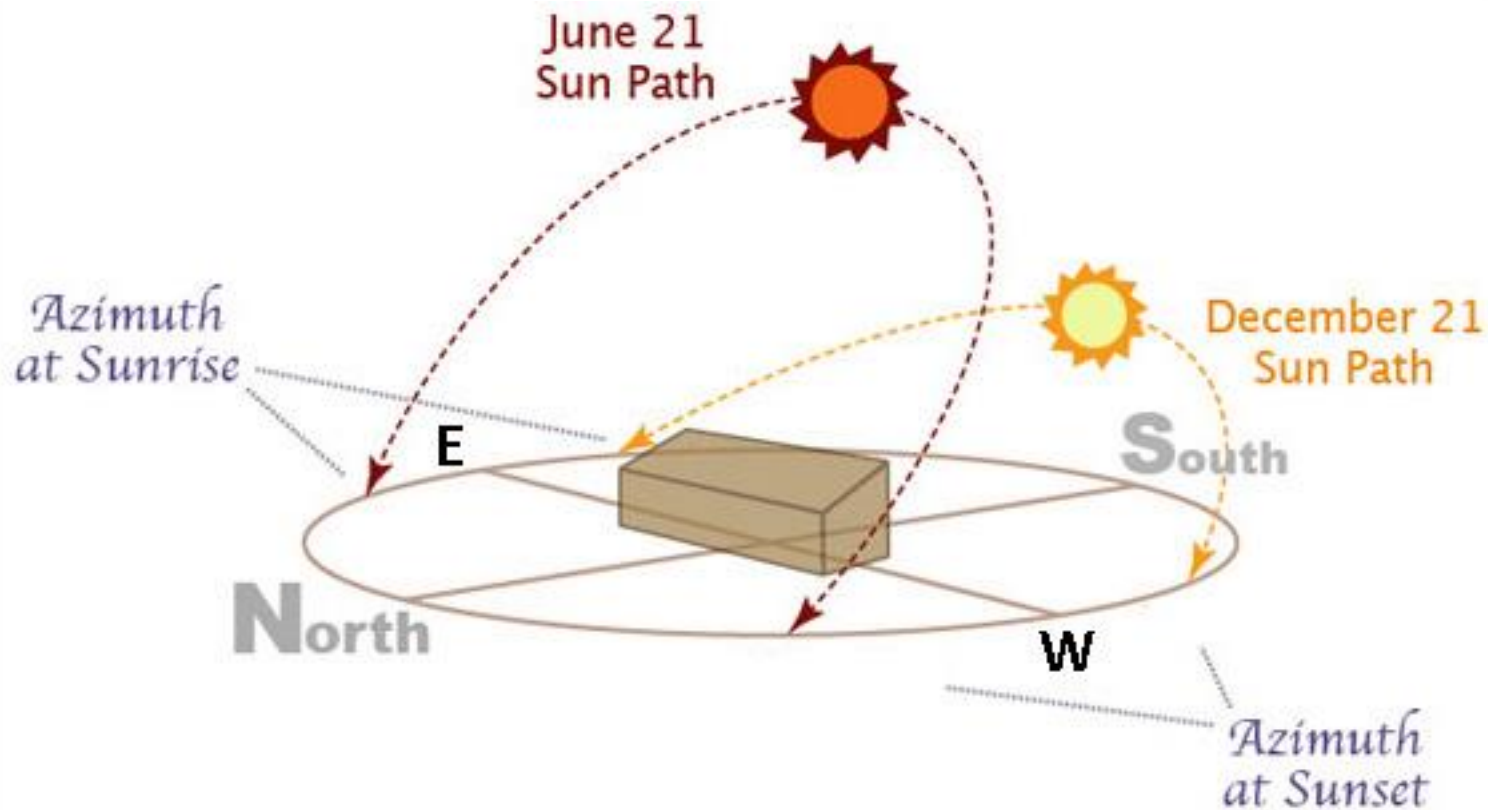
## June 21<sup>st</sup> Summer Solstice

- ★ The northern hemisphere's summer solstice occurs on **Wednesday, June 21<sup>st</sup>, at 10:58 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 23½° axial tilt times 2).

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- ★ **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.

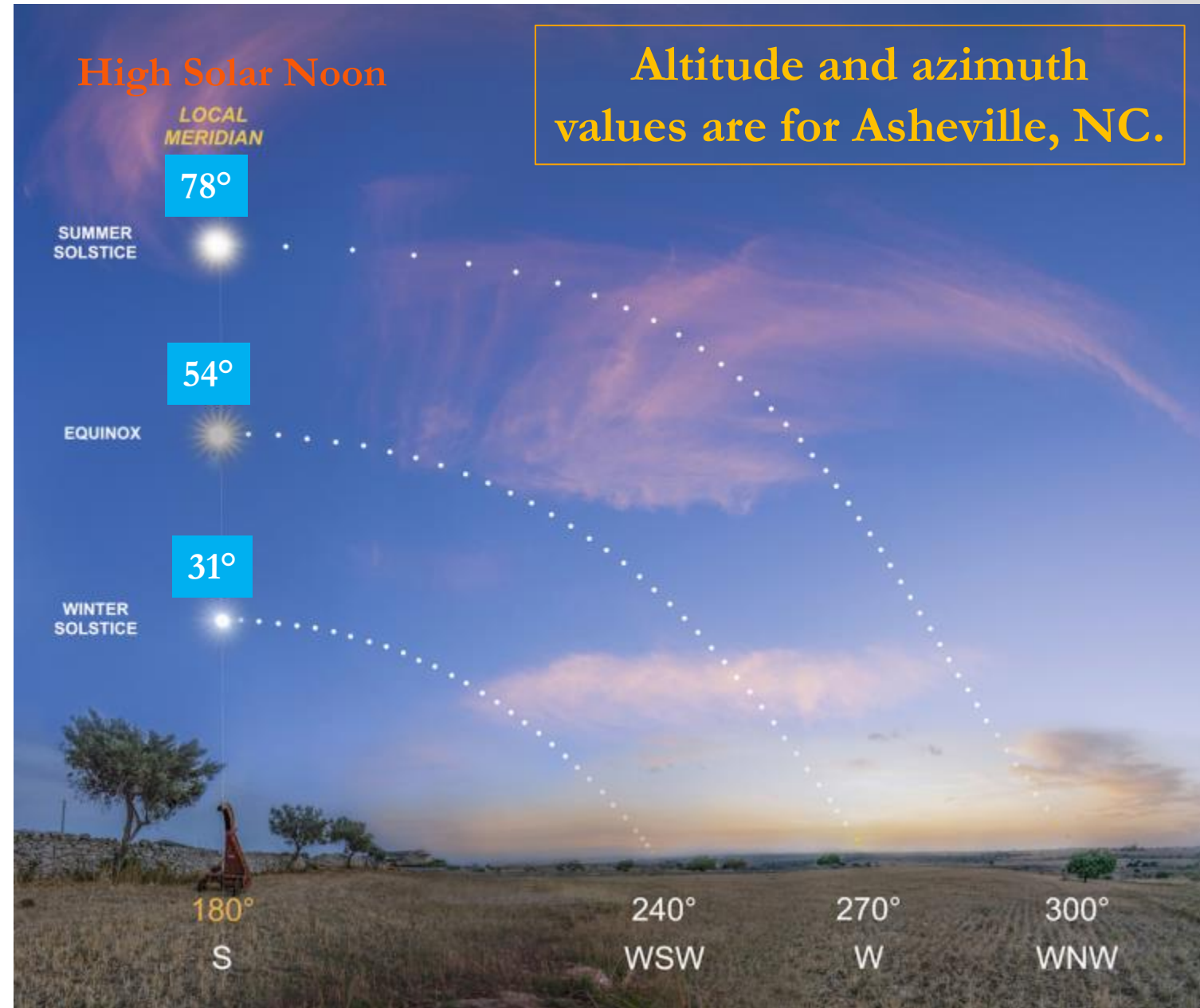


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The illustration to the right shows both the Sun's altitude above the horizon at "high solar noon" and its setting azimuth (western portion of the sky) throughout the seasons – from Asheville, NC, whose latitude is approximately  $35.6^\circ$  north.

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





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### 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.

