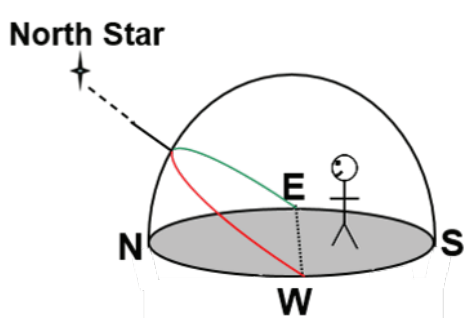
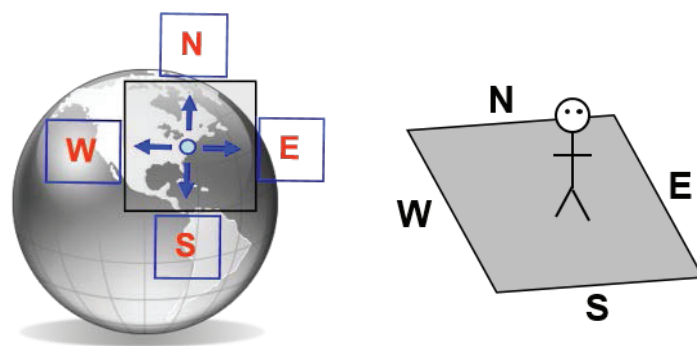


# WHAT'S UP?

Hello. Autumn has arrived and we're just one month away from ditching Daylight Savings Time for this year. Don't get me wrong – I like hanging out on summer evenings too, but I'm really glad when it starts getting dark earlier because that gives me more time to observe without losing too much sleep! Don't forget to go outside tonight (Friday, the 2<sup>nd</sup>) after 8 o'clock and check out the Moon and Mars sitting side by side in the sky.

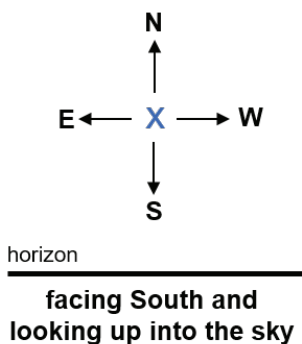
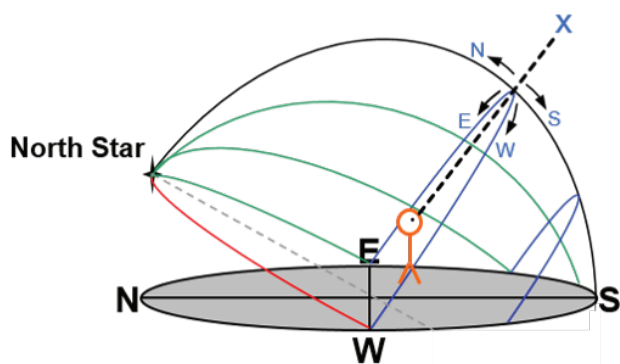
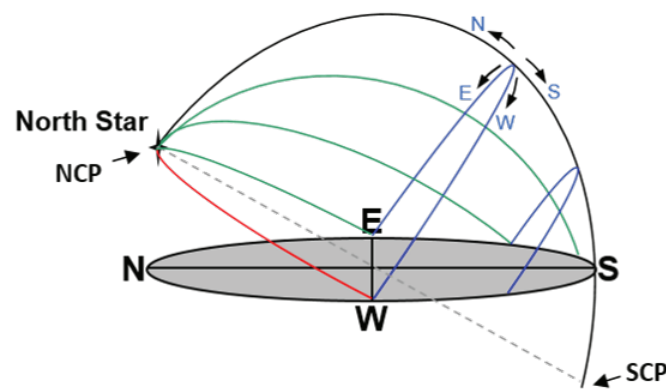
From time to time in these articles, I've talked about the location of an object as being "above (southeast of) such-and-such" or "above and to the right of (northeast)". The way in which our compass directions are mapped onto the sky can be confusing – directions can seem flipped to us. In this installment of *What's Up?*, I'll try to explain how we do that.

On land, we are familiar with the idea of looking to the North, South, East, or West. A compass and landmarks help us to determine position and our orientation (which way we are pointing). Similarly, we use celestial landmarks to orient ourselves relative to the stars and one star relative to another. The Earth is a sphere but we are so small compared to the size of the Earth, that when we stand outside, as far as we can see, the Earth looks flat. We can take the compass directions from a globe and map them to the directions we use when we move around on the Earth's surface, as in these two diagrams.



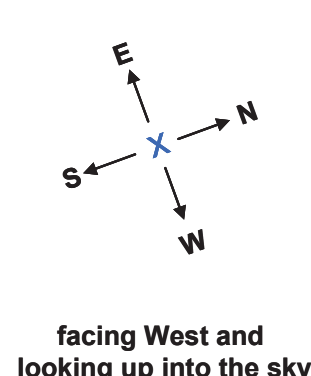
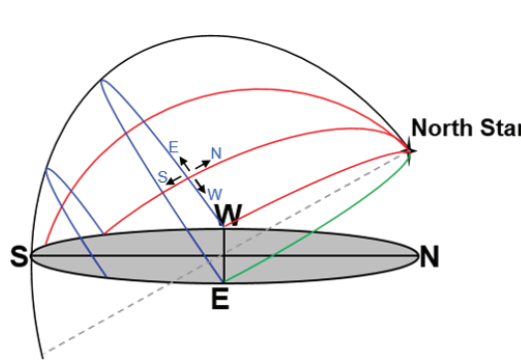
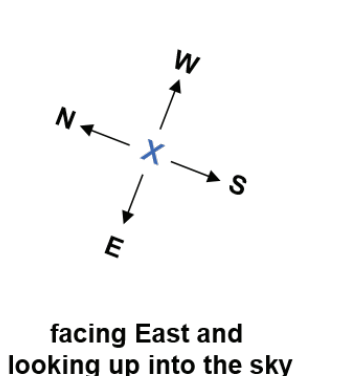
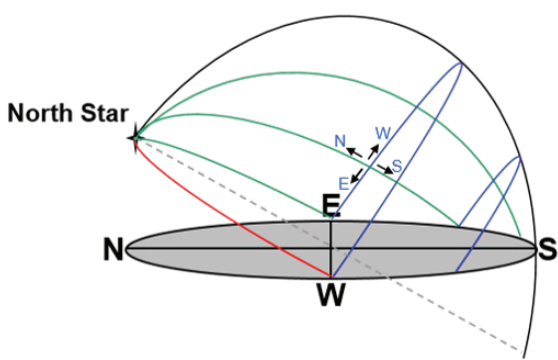
Now let's see how we apply this to the sky. If I'm outside at night and looking at the North Star, I'm looking North. The gray area in these diagrams is the ground. The North Star is near the "North Pole" in the sky - called the North Celestial Pole or, the NCP (there is also a South Celestial Pole, the SCP). To map the compass points onto the sky, imagine that the sky is divided into a grid similar to the grid of lines we use to mark locations on the surface of the Earth. The

drawing to the right shows some of these celestial lines. The blue lines are similar to the lines of latitude on Earth and the green and red lines are similar to the lines of longitude (here I've used green to show some lines in the east and red to show one line in the west – the black line runs directly overhead between North and South). I've placed our compass directions on our grid in the sky.



If we stand outside facing towards the south and look towards the horizon and then up to the sky, the compass directions would be as shown here, with X marking the point we are looking towards.

Likewise, if we stand outside and look up into the sky towards the East or towards the West, the compass directions go like this:



Think about this concept and go outside and try it out. For you early shoppers out there, in the next *What's Up?* I'll include my telescope buying guide.

You can reach me at [astroblog@comcast.net](mailto:astroblog@comcast.net) with any questions and comments you have. This is *What's Up?* Installment #31. Until next time, Keep looking up!

*Barry*