



North Sky Adventure

Go outside in the early evening, face North, and hold this star chart in front of you. Turn the chart until the correct month is at the bottom. When you look up at the stars, the Big and Little Dippers (Ursa Major and Ursa Minor), the "W" (or "M") of Cassiopeia, and the "house" of Cepheus will be about where you see them in the chart. The elevation, or angle of the North Star, Polaris, above your horizon, equals your latitude. (Measure the elevation by using the "rule of thumb" - your fist at arm's length is about ten degrees across, and each finger about 2 degrees). For those in the Southern part of the U.S., sometimes the Big Dipper or Cassiopeia is below the horizon, but never both at once! Above about 43 degrees latitude, the Big Dipper never disappears. The "pointer stars" in the bowl of the Big Dipper (near the number 11) point to Polaris.

Advanced: Because the Earth turns, the stars will appear to rotate around Polaris through the night so that the number at top increases with time. It's called the Sidereal or "Star" Time. It's actually the celestial longitude (called Right Ascension or RA) of the stars that are overhead. At different seasons, different stars are overhead, because of the orbit of the Earth around the Sun. By knowing their Star Time, and the day and time at the Greenwich Meridian, sailors can calculate their longitude. The other star coordinate, like a latitude, is called declination. Polaris has a declination of 89° - almost at the north celestial pole. If you have a pair of binoculars, look at the stars in the handle of the Big Dipper - which one is really a double? Mizar and Alcor (the next to last star in the handle of the Big Dipper) has a declination of 55° (35 degrees from the pole). For more activities, go to: <http://tinyurl/spaceupdate> and <http://tinyurl/earthupdate>

(c) <http://www.DiscoveryDome.com>

<http://www.SpaceUpdate.com>

OK for educators to duplicate for classes so long as this notice is included. Other use only by permission from reiff@rice.edu. Original sketch by Carolyn Sumners, Houston Museum of Natural Science (1979).