Fun Facts:

**MIZAR & ALCOR**

Computer Code: Mizar

* **Other Names:**
  + Mizar:
    - Zeta Ursa Major
    - *Mi’zar* from Arabic meaning “*apron, wrapper, covering, or cover*”
  + Alcor:
    - 80 Ursa Major
    - *Suha* from Arabic meaning “*forgotten or neglected one*”
  + Together:
    - The Horse & Rider (Mizar is the horse, Alcor the rider)
    - Mizar is Chickadee and Alcor is his cooking pot in the [Mi'kmaq](https://en.wikipedia.org/wiki/Mi%27kmaq) myth of the great bear and the seven hunters. The Mi’kmaq are a Native American tribe.
    - Mizar is known as [Vashistha](https://en.wikipedia.org/wiki/Vashistha" \o "Vashistha) and Alcor as [Arundhati](https://en.wikipedia.org/wiki/Arundhati_(Hinduism)) in Hindu astronomy. As a married couple, they are considered to symbolize marriage. In some [Hindu](https://en.wikipedia.org/wiki/Hindu) communities to this day, priests conducting a wedding ceremony allude to or point out the constellation as a symbol of the closeness marriage brings to a couple.
* **Basics:**
  + Description: Double Star in Ursa Major
  + Location: second star from the end of the handle in the Big Dipper
  + Visual Magnitude: Mizar is about a 2.0 and Alcor is about a 4.0
    - It has been a test of sight to distinguish them with the naked eye, but in reality, it is not that difficult.
    - They make a great binocular pair and there is an 8th magnitude star between them.
  + Apparent Size: separated by 11.8 arcminutes (about 1/5 of a degree)
  + Diameter: separated by as much as 3 light years or as little as 0.7 light years…we’re not quite sure
  + Distance: about 80 light years away
    - Light we’re seeing now left Mizar & Alcor around 1936.
    - This is what was happening on Earth in 1936:
      * The Hoover Dam was completed.
      * The Berlin Olympics were held…sometimes called Hitler’s Olympics. Jesse Owens won 4 gold medals at those games. From the movie Contact, some of the first radio signals were broadcast into space. If there were aliens at Mizar or Alcor, they would just now be alerted to our presence.
      * Franklin Roosevelt was re-elected to his 2nd term.
      * Sunblock was first marketed.
      * Burt Reynolds, John Madden, Robert Redford, Wilt Chamberlain & Pope Francis were all born that year.
* **History:**
  + Mizar is the first double star to be discovered by a telescope (by [Benedetto Castelli](https://en.wikipedia.org/wiki/Benedetto_Castelli) in 1617 & recorded in detail by Giovanni Riccioli in 1650).
  + Mizar was the first star to be photographed (by William Bond in 1857).
  + Mizar was the first spectroscopic binary detected (by Edward Charles Pickering in 1889).
  + Alcor’s red dwarf companion was discovered in 2009.
* **Other Notes:**
  + Mizar is actually a quadruple system & Alcor is a binary system, making the whole pairing a sextuple system.
    - Viewed with low power and a small telescope, Mizar & Alcor will appear at opposite ends of the field of view, and reveal Mizar’s companion (B) that is about a 4th magnitude.
    - Mizar A & B are each double stars, but you cannot make out all 4 stars visually, only by spectroscope. The two pairs are at least 500 au apart, and take at least 5,000 years to rotate orbit each other.
    - Alcor’s pair is rotating around Mizar’s quadruple every 750,000 years.
  + All of Mizar’s components are main-sequence, hydrogen-fusing stars like our Sun, but of white Class A stars. They have temperatures between 7,500 K – 9,000 K (13,000⁰ F – 15,000⁰ F), with luminosities between 10-30 suns. The brighter pair have masses of about 2.5 suns and the fainter pair have masses of about 1.6 suns.
    - Mizar A’s stars rotate around each other every 20 days.
    - Mizar B’s stars rotate around each other every 6 months.
  + Alcor brighter star is also a white Class A star, burning at 8,000 K (14,000⁰ F), with a luminosity of 12 suns, and a mass around 1. 6 suns. Alcor is rapidly spinning, rotating at 135 miles per second.
    - Its companion star is a red dwarf…not visible with our sized equipment.