

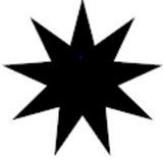


## Stars Have Stories – *How far away are stars?*

### Week Four - At Home Activity

#### The Distance of Stars

*Presented by the UWM Alumni Association and UWM Manfred Olson Planetarium.*



It can be hard to imagine how far away stars and galaxies are, so let's scale these "astronomical" distances down to something that is easier to understand! On a nice day, go outside with a piece of chalk (or something else you can use to mark the ground) and take some of your favorite small toys with to mark distances.

Let's pretend that the distance light travels in 1 year (also known as 1 light year) is squeezed down to the width of a single grain of rice – that's only about one millimeter! Can you believe that you could fit more than 1,000 solar systems into that single grain of rice – or one light year of space?

-Begin by marking our solar system with a circled dot so that you can find it again. **You will use this mark as your starting point to measure all of the following distances.**

-First, measure 4 millimeters (just the width of a drinking straw) and mark an asterisk (\*), This is where the star **Proxima Centauri** is located. If you have chalk, write its name.

-Next, measure 4 centimeters (about the length of your thumb) – that is where **Arcturus**, the alien star is located. It is actually 40 light years away! Mark it and write the star's name.

-Return to the solar system again and measure 32 centimeters (about the length of your arm from the elbow to the tip of your finger). This is where the **North Star**, known as "Polaris" is located - 323 light years away! Mark it and write the star's name.

-Next, measure 86 centimeters (the length of the longest stride you can take). This is where you'll find **Rigel**, part of the constellation "Orion" – can you believe it is 864 light years away! Mark it and write the star's name.



-Now we'll travel about 26 large steps to find the **Hercules Globular Cluster** – it is 22,180 light years away! Mark it and write the group's name. This is the kind of group we use when talking about the age of stars.

-Your next measurement is SO big, you'll need to ask a grown up to go with you to help! You'll need to travel 1.25 MILES – that's 2 million light years – to find the **Andromeda** galaxy. It will likely take you 25-30 minutes of walking to reach that distance!

-Finally, just for your imagination, a typical **Quasar** (mentioned in today's program) is about 5 BILLION light years away! That would be about 3,125 miles away! Since we know you can't walk that far, look on a map and find a city that is that distance from yours.

For other fun activities including virtual tours of the night sky and Dr. Jean telling her story about Perseus, check our UWM Planetarium website: <https://uwm.edu/planetarium/>