

# Starry Sky Projector

Enjoy watching starry lights with a homemade projector!

## Materials Needed:

Empty cardboard container without lid (such as a shoebox or oatmeal container), aluminum foil, scissors, towel, pencil, battery-operated flashlight or headlamp.



## Instructions:

**Step 1:** Cut a piece of aluminum foil large enough to cover the top of your box. Lay a towel on a surface and place your piece of foil on top.

**Step 2:** Use the end of a sharp pencil to punch holes all over the foil. These will be your “stars”.

**Step 3:** Turn on your flashlight or headlamp and place it inside the container, with the light facing up.

**Step 4:** Cover the top of the container with the “star-studded” foil.

**Step 5:** Turn off the lights. Enjoy looking at the projected lights on the ceiling. What shapes or pictures can you see?

Remember to turn off the flashlight or headlamp when you are done!



**Extension:** Build a blanket fort for a cozy light show!

# Explore Star Light



Young star cluster NGC 362.  
*Image: ESA/Hubble/NASA.*

Light from many stars is visible from Earth. Light travels fast, about 186,000 miles (300,000 km) per second. This is the fastest travel we know of in the universe. Scientists measure the distance to stars in light years, because of how many years it takes the light of a star to reach the Earth. Some stars look brighter to us because they are closer or larger than other stars.

The Sun is our closest star. Light from the Sun takes about 8 minutes and 17 seconds to reach Earth. Because the Sun is closer to Earth than other stars, it appears very bright in the sky. It is so bright that during the day we cannot see light from other stars.



Earth and Sun. *Image: NASA.*

The Earth rotates once every 24 hours. During the night, one side of the Earth faces away from the sun, and we can see other stars in the sky. More stars are visible when the sky is clear and there is no light pollution from city lights.



Alpha Centauri star cluster. Proxima Centauri is the faint red circle, below the two bright stars in the middle.  
*Image: Wikimedia Commons.*

The next closest star to Earth is named Proxima Centauri and is 4.37 light years away. Proxima Centauri is a faint star in a bright cluster of 3 stars called Alpha Centauri. This bright cluster is most visible in the Southern Hemisphere, and visible during winter in parts of the Northern Hemisphere.