

Nightly movement of stars

If you bundle up in a sleeping bag outside and watch the stars all night, you will see them move across the sky. To better understand how they move, you can set up a camera and take a picture of part of the sky. Keep your camera pointed in the same direction, though, and take a picture every hour. Then, you can compare your pictures to see how the stars move.

You will be given a set of pictures. Each one is labeled with the time and date when it was made. You will also be given a transparency, which is a piece of clear, slick paper, and a marker.

Place the transparency on top of the first picture of the night sky (the one taken at 9:00 PM). Choose a star and use your pen to mark the location of the star.

Place the transparency on top of the second picture of the night sky (the one taken at 10:00 PM). Find the same star you chose before and mark the location of the star.

Continue marking the position of the star for each time that a picture was taken.

Repeat this process for 4 other stars. Use a different color pen for each star. Choose two stars on the left side of the picture, two stars on the right side of picture, and one in the middle. It helps if you choose stars that are not too close to the edge of the picture.

Did any of your stars not move at all? If not, then see if you can find a star that is in the same place in all 10 pictures. As you have discovered, this is a special star. Do you know the name of this star?

For the stars that did move, sketch their paths by connecting the dots. What geometric shape does this look like?

Though you can't see the stars during the daytime, will they continue to move during the daytime?

Sketch what you think each star's path will be from 6:00 AM until 9:00 PM the next night.