

SCIENCE 408

OUR SOLAR SYSTEM AND THE UNIVERSE

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III. THE STARS AND SPACE

From the Bible you have learned that the stars were created by God to provide heat and light, to show us God's glory, and to teach us humility. The starry heavens show us His power, His greatness, and His faithfulness.

In this section of your **LIGHTUNIT**, you will learn more about the stars.

God compared them to the grains of sand on the seashore. We cannot count them all. Besides our own galaxy, the Milky Way, we know millions of other galaxies are in our universe. We will need to stretch our minds as we study about God's marvelous universe.

SECTION OBJECTIVES

- ☐ **Read these objectives.** When you have completed this section, you should be able:

10. To give some reasons why God created the stars for "signs."
11. To explain the difference between astronomy and astrology.
12. To recognize some stars and constellations.
13. To tell why we should not go to astrologists or fortune-tellers.

- ☐ **Restudy these words.**

astrology

spiral

trillion

constellation

stellar

zodiac

infinite

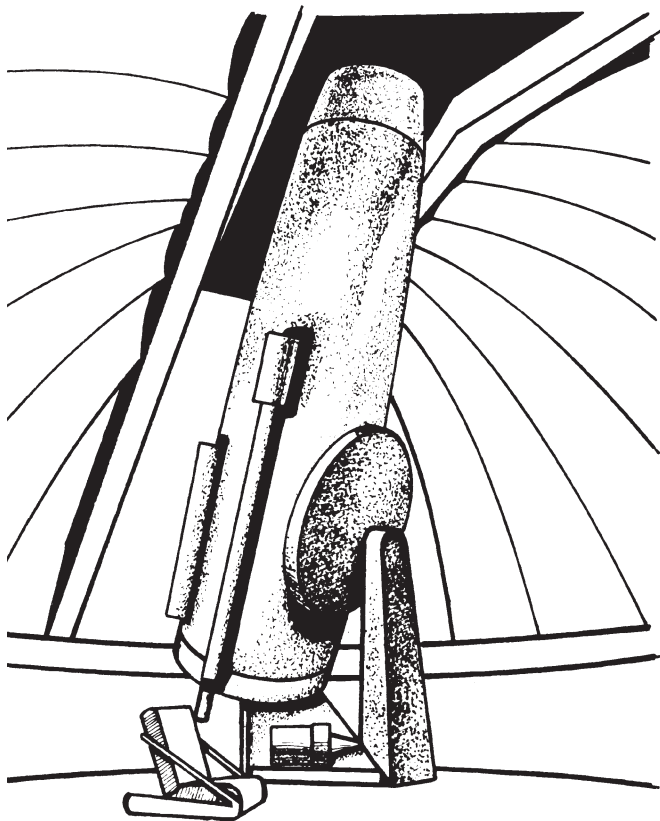
superstition

STARS WE SEE

Look at the stars twinkling in the night sky. The brightest one we can see is Sirius (sir' ee us). Sirius is often called the Dog Star. If you wanted to travel to Sirius, you would have to fly at the speed of light for eight and a half years. This distance and speed is impossible for us to imagine. Sirius is so far from us that it takes almost nine years for its light to reach the earth. If you are nine years old, the light which you see tonight started to

travel from Sirius toward Earth at about the time you were born. This star radiates about thirty times as much light as the sun; however, it is so far away it only twinkles brightly in the heavens at night. Job praised God for making the night sky so beautiful. He said, "By his spirit he hath garnished [decorated] the heavens . . ." (Job 26:13). Indeed the heavens are decorated with His stars!

Numbers. The number of stars we can see on a dark night is between 3,000 and 5,000. With a high-powered telescope, astronomers can see many millions of stars. Astronomers think there may be more than 100 billion stars (100,000,000,000) in our galaxy.



Modern Telescope

This number does not include the stars in other galaxies. Scientists are asking the question: “What lies beyond the farthest galaxies man has studied?” Some have suggested that there could be an **infinite** number of galaxies.

In the first chapter of Genesis, verse 14 reads: “And God said, Let there be lights in the firmament of the heaven to divide the day from the night; and let them be for signs, and for seasons, and for days, and years.”

For signs. One star long ago was different from all other stars that have been seen in the sky. The Star of the East was a very special star. On a night long ago this special star guided the Wise Men from Jerusalem to the child, Jesus. The Wise Men followed the star until it stopped and stood over the place where Jesus was.

Another “sign” that God placed in the heavens is the North Star. It is always in the same place—nearly over the earth’s North Pole. For centuries this North Star, or *pole star*, has been a guide to everyone in the Northern Hemisphere who has needed directions. It is easy to find the North Star. First, find the Big Dipper. Then follow the pointer stars of the bowl of the dipper to the North Star (see Figure 2). The stars seem to rise in the east and set in the west because the earth is rotating on its axis.

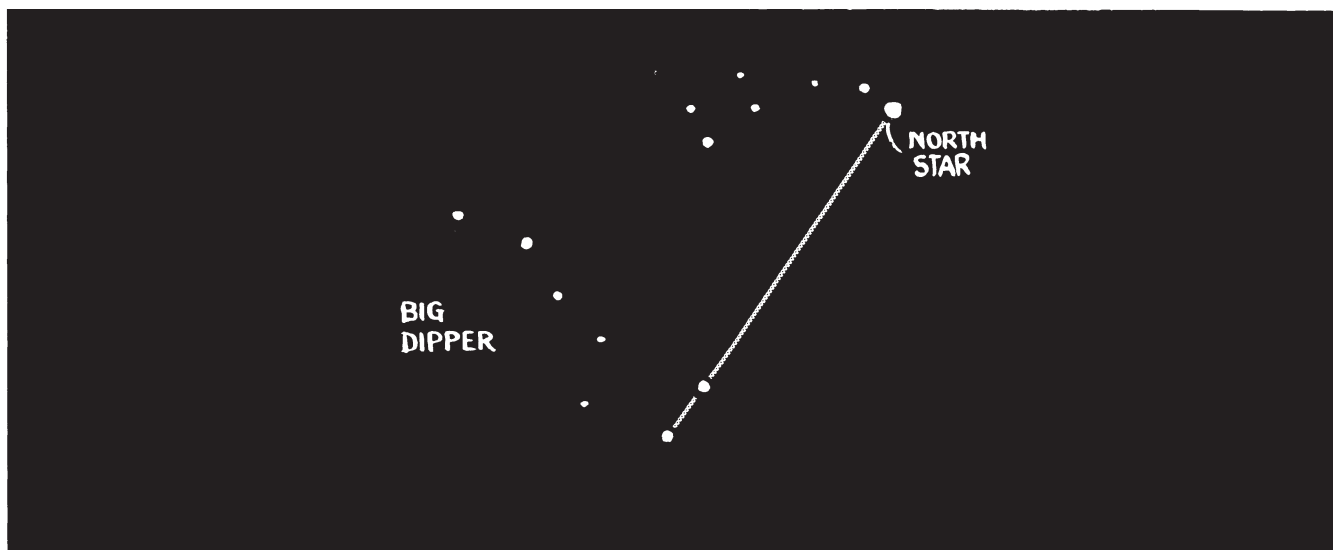
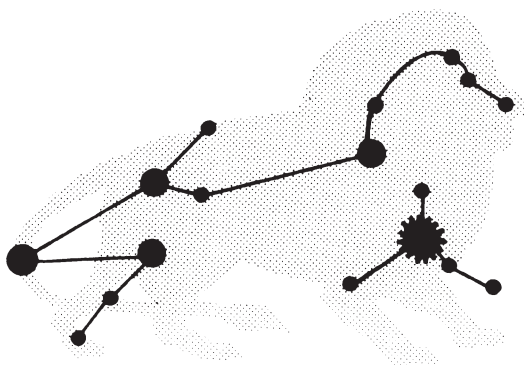


Figure 2: Big Dipper and North Star

For seasons. In addition to the “signs” mentioned in the Bible, stars change location with the “seasons.” The stars do not really change. Due to the revolution of the earth they seem to change. In the Northern Hemisphere we can see groups of stars called **constellations**. Many, many years ago, people imagined they saw pictures in the sky. They made up stories about these “star pictures.” We call these pictures constellations. Each constellation

appears at a different season of the year. For instance, in April, May, and June, one can see the constellation *Leo*. This group of stars is imagined to take the shape of a roaring lion.

For days and years. Long before the invention of the clock, man relied on the sun, moon, and stars for keeping a record of time. Every time we look at a calendar we are reminded that God planned the stars “for days and years.” The Christian calendar is based on the moon, the sun, and the year Jesus was born. All dates before that year are listed as B.C. (before Christ). All dates after that year are written as A.D. A.D. is an abbreviation from Latin words meaning *in the year of our Lord*. The Hebrew calendar is based on the moon and the year of the Creation.



“Star Picture” Leo the Lion



Try this investigation. Make a star box.

These supplies are needed:

square box with cover
large flashlight
star maps to copy
several sheets of black construction paper
pins



Follow these directions. Place a check in the boxes as you complete each step.

- ☐ 1. Cut a hole in the center of the bottom of the box. It should be just large enough for a flashlight to go through.
- ☐ 2. Draw an eight-inch square on the cover of the box. The center of the box cover should be the center of the square. (See Figure 3.)

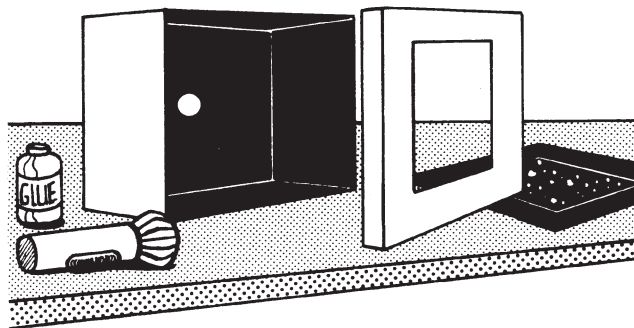


Figure 3

- ☐ 3. Cut out the square.
- ☐ 4. Glue or tape the cover on the box.
- ☐ 5. Cut several sheets of black construction paper the size of the cover.
- ☐ 6. Mark off an eight-inch square in the center of each sheet of paper.

- ☐ 7. Use a star map and place dots in the square to show one of the constellations. The Big Dipper would be a good one to do first.
- ☐ 8. Punch a small hole through the paper at each dot.
- ☐ 9. Pin the sheet of paper to the top of the box.
- ☐ 10. Turn the box on one side.
- ☐ 11. Make the room as dark as you can by pulling shades and turning off lights.
- ☐ 12. Hold the flashlight through the hole in the box.
- ☐ 13. Turn the flashlight on.
- ☐ 14. If the charts do not show clearly, make the holes a little larger.
- ☐ 15. Make several different charts. Ask your teacher if you may demonstrate your charts to someone. Let him guess the names of the constellations.



Match these items.

- | | | | |
|-----|-------|------------------|----------------------------|
| 3.1 | _____ | Sirius | a. Milky Way |
| 3.2 | _____ | Star of the East | b. pole star |
| 3.3 | _____ | North Star | c. in the year of our Lord |
| 3.4 | _____ | constellations | d. special "sign" |
| 3.5 | _____ | B.C. | e. Dog Star |
| 3.6 | _____ | galaxy | f. "star pictures" |
| 3.7 | _____ | A.D. | g. before Christ |
| | | | h. the Lion |



Write the correct letter and answer on the line.

- 3.8 The number of stars that can be seen on a clear night is between 3,000 and _____ .
- | | |
|------------|-----------|
| a. 10,000 | c. 5,000 |
| b. 100,000 | d. 15,000 |