

## STEM in the News

Scientists have recently calculated the age of a massive neutron-star collision that helped to form our solar system. They say that the merger occurred around 100 million years before our solar system was created.

They also say that the collision took place about 1,000 light-years away. That may seem like a long way, but if a neutron-star collision like the one that helped to form our solar system occurred that far away tonight, the entire sky would light up brighter than the sun. Scientists say that they calculated the age from some of the heavy elements like gold, platinum, and plutonium found here on Earth. How interesting that the collision of stars helped create everything that we see on Earth today!

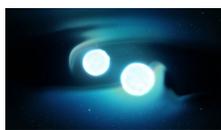


Image © NASA

Source: <https://www.space.com/neutron-star-crash-age-formed-solar-system.html>

## STEM Career Spotlight

Astronomers study certain questions and fields outside the scope of Earth. This includes the study of planets, moons, and our sun! They use telescopes and computer programs to help them learn more about these phenomena. Astronomers must utilize difficult math and are very intelligent in various subjects. The medium wage for an astronomer is \$114,750 per year.

Required education: Doctoral or professional degree

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*“You cannot teach a man anything; you can only help him find it within himself.” Galileo Galilei*

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## STEM in History

Astronomy deals with space and is the oldest of the natural sciences. In the 4th century B.C., three-dimensional models explaining the motion of the planets were created by Eudoxus and Callippus. Around 480 B.C., a Greek philosopher named Thales combined math and Babylonian data to predict the occurrence of eclipses. For the first time in 250 B.C., Eratosthenes and Aristarchus of Greece used basic geometry to estimate the size of the cosmos in Earth terms. Ultimately, astronomy has advanced exceedingly and has become a popular branch of science ever since these times

## STEM Across the Curriculum

A great way to learn more about astronomy is to use math! In this activity, students need to use their brains and maybe a calculator. Find the distance from Earth to each of the planets and/or certain stars and write them down. Now, to find the distance between a planet and another one, subtract both of their distance from Earth together. Now you have the distance! Try to find how much distance you need to travel to go from one planet to another!

## STEM Movies

The *Star Wars* (1977-present) is a sci-fi film franchise that tells the adventures of humans,



aliens, and robots. The series' storyline shows a conflict between two major knighthood orders

called the Jedi and the Sith. *Star Wars* includes astronomy into their movies through the use of galaxies, planets, and many astronomical objects. For instance, many individuals use hyperspace technology to travel between an abundance of planets. One of the planets called *Tatooine* even has a phenomenon where it has two suns. The depiction of astronomy in *Star Wars* series an "astronomically" famous pop-culture phenomenon.

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*"Somewhere, something incredible is waiting to be known."* - Carl Sagan

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## #STEM@ADM Spotlight

Mrs. Peyton is a passionate educator who teaches 8th-grade science. She integrates science into her classes that cover units such as waves and Earth's history. Astronomy is a topic she puts into her lessons with activities such as electronic simulations that depict the Moon's orbit around the Earth. She teaches about objects that move around space and around Earth. Props to Mrs. Peyton for working and teaching students the anomalies of astronomy.

## Famous STEM Person

Steven Hawking was a famous astronomer who had ALS. He is directly responsible for five major breakthroughs in science, and he won the most lucrative prize to be established in science called the Fundamental Physics Prize.

## STEM Challenge

### Straw Rocket Challenge

Materials: Pencil, scissors, tape, soda straw, and meter stick, and print-out template:

[https://www.jpl.nasa.gov/edu/pdfs/strawrocket\\_worksheet.pdf](https://www.jpl.nasa.gov/edu/pdfs/strawrocket_worksheet.pdf)

Steps:

1. Cut out the large rectangle on the rocket template. This will be the body. Wrap the body around the pencil; tape it closed to create a tube
2. Cut out the two fin units. Align the rectangle in the middle of the fin with the end of the rocket body, and tape it on
3. Tape the next fin on the other side of the pencil
4. Bend the part of the fin at 90 degrees so that each fin is at a right angle to its neighbor. Looking at the bottom of the rocket, the fins should look like a +.
5. Twist and pinch the top of the rocket body around the tip of the pencil to create a "nose cone." Tape the nose cone in place
6. Measure the nose cone from its base to its tip, and record the length in their data log and on the rocket itself. It should be about 5 cm tall.
7. Replace the pencil with the soda straw
8. Have students blow into the straw to launch their rocket. (Be careful of others!)
9. Use the meter stick to measure the distance it travels, then have students record the distance.

<https://www.jpl.nasa.gov/edu/teach/activity/straw-rocket/>

## STEM Puzzle

Riddle: I'm filled with gas but I'm not a car; I have many rings but I'm not a jewelry store; I'm a large planet but I'm not Jupiter

ANSWER: Saturn