

How Do Galaxies And Planets Form?

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Description:

I am researching how planets form with a focus on how the earth formed. I will explain what research tells us about the formation of planets and the solar system.

Introduction and Background:

I am specifically doing research about how planets form. Understanding the planets and the bodies of our solar system helps answer questions about how it reached its current planet stage, and how the earth fits into the solar system.

In the Previous years, the Romans knew that the planets, Mercury, Venus, Mars, Jupiter, and Saturn existed. The planets were moving in the sky differently than the stars. Stars move in a consistent pattern, while planets move in a non-consistent pattern that the Romans could see with their eyes. It was not until the 1600's, when the telescope was invented by a smart man named Galileo Galilei. The use of the telescope helped the community learn about astronomy because of a lens. People like Isaac Newton started making new and improved versions of the telescope. He made the lens better by changing the angle of the lens to a concave mirror. This made the telescope smaller and easier to use. In 1781, William Herschel looked through a telescope and he found another planet, Uranus. His telescopes allow astronomers to view the planet's orbits, where they discovered Neptune in 1846. No one knew Netpune existed until astronomers found that Uranus had a different orbit. Understanding the history of planets helps us understand questions that we have about the solar system. We can ask how these planets and galaxies formed, or if there are any other planets that have

life on them. I am interested in this topic because I like astronomy and the study of space and in this project, I ask how galaxies and planets form.

Body of Paper

Have you ever wondered when and how the earth formed? Ancient civilizations wondered about this and many people have studied these facts. First, the solar nebula was the rotating, flattened disk of gas and dust from which the solar system started. Then, the Earth formed over 4.543 billion years ago out of a mixture of dust and gas around the young sun. It grew larger thanks to countless collisions between dust particles, asteroids, and other growing planets, including one last giant impact that threw enough rock, gas, and dust into space to form the moon. It is believed that the sun and the planets formed at about the same time, about 4.543 billion years ago. They formed from a cloud of gas and dust called solar nebulae. A shock wave from a nearby Supernova explosion probably initiated the collapse of the solar nebula. A Supernova is a dying star that is the biggest explosion us humans have ever witnessed. This happens when a star is at least five times the mass of the sun. The formation of the planets in the solar system is complicated and astronomers are improving technology to be able to study our galaxy and how planets and stars formed.

Do you know how scientists are getting information about the solar system? Scientists are getting their information from The Hubble Space Telescope. Hubble is very special because it can travel 5 miles per second. It can travel from the east coast (New York) to the west coast (California) in 10 minutes. It is better than a telescope because it is in space and can take pictures of other galaxies billions of light years away. It takes digital photos and uses radio waves to send it back to headquarters (The

Amazing Hubble Telescope). Scientists are also getting their information from astronauts. Astronauts use satellites to communicate with people on earth. There are also robots on Mars that have satellites attached to them that send information to the astronauts (Communicating with Missions). This helps us collect valuable information on where, when and how planets and galaxies are formed.

Have you ever wondered if us kids will ever live on another planet one day? Scientists are studying life on other planets. One specific planet called TOI-715 b stuck out to scientists because they thought this planet had a certain form of life. According to Robert Lea, this planet has an atmosphere and possesses water and land. It is much smaller than the earth, but scientists believe it is possible it could have life. NASA (The National Aeronautics and Space Administration) wants to “Implement a sustained and affordable human and robotic program to explore the solar system and beyond.” This is a part of their mission statement where they want to use robots and humans to explore the universe. It may be possible one day for us kids to explore another planet.

The earth is a special place, but there are so many special places in the solar system. I learned how the galaxies and planets formed over billions of years. I learned how scientists have made improvements over the years in how they study the solar system. I learned what scientists are hoping to discover in the future. The solar system tells us about how we formed and if it is possible to have another planet with life on it.

***Collisions: An instance of one moving object striking against another.**

*** Impact: the action of one object coming forcibly into contact with another.**

*** solar nebula: The rotating disk of gas and dust that gave rise to the solar system approximately 4.6 billion years ago**

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