# Development of research on the moon

Abstract

Earth’s moon has been the subject of many experiments and expeditions, because of that have you ever wondered about the moon and moon rocks? The moon and rocks from the moon have been the center of many movies, books, television shows, myths, space expeditions, etc. but many people in society do not know much about the moon. There are many details and facts about the moon and moon rocks, here are a few of them.

To begin, how the moon had formed. Scientist have found that from doing tests on moon rocks that the moon had formed about 4. 5 billion years ago. Though there are different ideas and theories about how the moon had formed the most plausible theory is when a Mars-sized celestial body had collided with the earth instantly eliminating the object that hit the Earth and a part of the Earth. The vapor created from the two bodies rose up and formed particles which then form what people now call the moon. But the crust of the moon did not form then. The crust formed 4. 4 billion years ago when hit by a numerous amount of meteorites. The meteorites had caused the moon to seep lava to seep out of the moon. Then the lava soon dried then creating the crust of the moon.

But, scientists don’t just learn about the moon, the moon has told us things and has helped us discover things about the earth. Scientists have proven, “ The moon affects the earth gravitationally, causing certain motions of the body and also producing tides in its ocean and atmosphere” (The Moon and the Weather). The fact the moon causes tides by using its gravitational pull is not the only thing we have learned from the moon. The celestial body has

also told us about sun activity from the past 4 billion years. When the moon was hit by meteorites and its crust formed while it formed it had permanently saved many accounts of solar activity from the sun. Also, “ Recent research suggests that the Moon’s gravity tugs on Earth’s mantle layer (which sits on top of the outer core). This causes the liquid, outer core to slosh around, helping to generate the energy needed to maintain our magnetic field.” (10 Things: What We Learn About Earth by Studying the Moon) This is important that we keep our magnetic field intact because if it were gone we could be hit by solar wind or other celestial things that could be deemed harmful.

The moon tells us so many things but what is it actually made of? The moon is made of many different things. Scientists have found black specks in moon rocks that have been shown to be basalt, and in that basalt there is the mineral ilmenite or titanium dioxide in some chunks of basalt. But, in the nuggets of basalt ilmenite only makes up 10% of them. Scientists have also found that there are tiny pieces of glass that has survived millions of years in the rocks. Also, the mineral Olivine—better known as a type of peridot or the birth stone of August—is found in the moon rock. There is another mineral found in moon rocks that, “…is termed feldspar and is the pink mineral in granite -a terrestrial rock commonly used for tombstones. Almost surely you have held feldspar in your hand. The familiar household cleansing and scouring powders, such as Ajax, are mostly feldspar.” (What We’ve Learned About The Moon). Other materials found in the moon and moon rocks include, “ pyroxene (a mineral composed chiefly of iron, magnesium, calcium, silicon, and oxygen), and spinel” (What We’ve Learned About The

Moon). And to end, scientist also think that there may be small amounts of nickel in the rocks.

Experts have found out what the moon tells us about earth, but what has moon rocks and the moon it self-taught us on Earth about the moon. When studying moon rocks scientists have found that the rocks are very dry, which leads them to the conclusion that there is little to no water on Earth's moon. This also made them believe that there was never any life on the moon. Also, when studying the moon with seismographs, which are machines that record the seismic properties of something, to listen to vibrations on the moon and have found that there is very small vibrations on the moon. There are many reasons that they have movements some are because things that occur naturally in the moon and some are cause by outside forces like spacecraft of meteorites. Another thing we have learned about the moon is that it magnetic field is smaller than earth's magnetic field. According to What We've Learned About The Moon, written by NASA, " The steady part of the lunar magnetic field, measured at the Apollo 12 site, was about 35 gamma, somewhat more than 1, 000 times smaller than the Earth's field." The Earth's magnetic field surrounding the planet helps protect the world from harmful solar winds by turning them into the soft, gentle breezes we feel on Earth. That means that the moon is more sensitive to the solar winds. Also, by studying things on the moon scientists have found that the is about 30 to 60 miles thick, which means that the moon crust is thicker than the Earth's crust. This makes the moon more " silent" meaning that the moon is less prone to moonquakes—which are earthquakes but on the moon.

Researchers have found so much about the moon but how do they and how have they studied the celestial body and the samples they have taken from it. One of the most remarkable times people have studied the moon was the Apollo Eleven mission when on July 20, 1969, Neil A. Armstrong and Edwin E. Aldrin Jr. landed on the moon. They went to the moon after the Soviet Union sent Yuri Alekseyevich Gagarin into space creating the first man in space. They did this to how that the United States was better than the Soviet Union. Their main mission on the trip was to be the first to land on the moon and to collect samples of soil and rocks from the moon's crust. This is when people had started to study the moon and moon rocks more. In present day, " About 200 scientists in the United States and 10 foreign countries are still studying the lunar samples today. Even though about 840 pounds of lunar samples have been brought to Earth, NASA is still being very conservative in how much is used." (What We've Learned About The Moon) The way scientists study moon rock today and the way they have been for the past decades is by sending rover on to the planet and by putting the samples they took from the times they have collected samples and placing them in to thin, glass slides to study under microscopes. Scientists at NASA and many other research labs and facilities around the world still study the rocks today and many of the rocks they study are the exact same ones that the astronauts from the Apollo 11 mission had brought back with them to Earth.

As shown above, there are many facts about the moon and moon rocks in the galaxy today. But there are many more to be discovered. In today's day and age we know that many more facts about the moon and moon rocks will be discovered, but we will have to wait and see.

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