Moon’s Impact on earth

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The most dominant theory that is being supported throughout the scientific community is that a moon was formed when an object was smashed into the early earth. Similar to all the other planets earth was also formed as a result from the combination of leftover clouds of dust and gas that were revolving the sun at that time. The solar system in its initial stages was a vicious place. At that time many bodies that were present that were unable to make it to the full planetary system. One of such bodies which was named Theia, collided onto the surface of earth which resulted in the scattering of vaporized particles of the planet’s crust into the space. These ejected particles were bounded together by gravitational forces and formed a body known as moon. The moon hosted by earth is the largest in size in comparison of its planet. This theory is still not valid as it is understood that most of the moon’s crust should be made up of the material of Theia, however the Apollo moon mission suggested different results from it. One other theory is that the moon was a separate body that was formed elsewhere and somehow it was pushed into the orbit of the earth. There is one more theory of fission which suggests that at the beginning of its origin the earth was moving very fast and it threw material out that started revolving around the earth.

**Physical Characteristics**

There are different methods of studying the surface and size of moon which mainly include, telescopically, photographically and spacecrafts. The diameter of the moon is about 2,160 mi which is about 25% that of earth’s diameter. However, the 3/5 density of moon as compared to earth suggests that moon has almost 1/81 times mass that of earth (Whitehouse). The gravitational force of the moon is 1/6 times less as that of an earth. The atmosphere of moon doesn’t have any oxygen and hence doesn’t support any life on its surface. The temperature extremes can range between 125C to -245C at the noon time on the equator and night in the polar region. The terrain of the moon can range from rough and rocky to strewn land. The height of mountains on the surface of moon can range up to 25,000 ft. Such heights are generally comparable to that of heights of Mountains on Earth but are less steep in comparison. The crust of the moon is generally 45 miles thick, which makes the moon a very rigid solid. The internal surface temperature varies from 830C at the core to around 170C near the surface of the moon.

**Phases of the Moon:**

The moon goes through different phases while completing its whole cycle, i.e. from one lunar month to another. Just like we see different telescopic pictures of earth from the space, half of the moon is lit by the sun while the other half is in darkness. We can only see moon because sunlight is reflected back to us from the surface of the moon. During a month the moon complete one revolution around the earth. From observing our solar system, we can conclude that we see only half of the moon that is facing the sun. However, we don’t always see all the lit sides of moon and as the moon rotates, we tend to see the lit side change little by little. These changes when complete a cycle represents a lunar month and are generally known as the phases of the moon.

At the start of the new moon we see the moon that is lined up between the earth and the sun and we don’t see any moon because the brightness of the sun is way more than that of a dim light of the moon. After that when each night the moon starts moving away from the sun, we tend to see moon bit by bit each night. This illumination of the moon continues until it completes its shape and then come back to its original shape.

**Interactions between Moon, earth and Sun**

The interactions between Moon, earth and sun impacts our daily lives greatly. To a general observer the sun appears to show its motion from east to west. The moon and stars also seem to appear in the east and sets in the west. However, all of this is related to the relative motion of Moon, earth and the sun. The rotation of earth indicates that there will be a cycle of daylight and darkness almost a length of the whole day. The sunset and sunrise differ in many locations due to this relative motion between the moon and earth as compared to that of the sun. The changing of weather seasons is also down to this phenomenon. The tilt of the earth around axis meant that one hemisphere is facing the sun more than the other and it results in the changing of seasons.

One other phenomenon that occurs due to the relative motion between sun, earth and moon is lunar and solar eclipse. A solar eclipse occurs when a moon comes directly between the earth and sun, resulting in casting a shadow on the earth by blocking the passage of light from sun. Solar eclipses are generally not that long because of the limited shadow that a moon can cast. On the other hand, a lunar eclipse occurs when earth comes between the moon and sun, this blocks the view of a sun’s reflecting light on the moon.

**Effects on Earth**

The main effect of moon on earth is its impact on the tides wavelength and frequency of occurrence. Tides are usually caused by the gravitational attraction of moon and sun. The moon’s gravity tends to pull the water tides upward towards itself causing it to rise upward in the direction of the pulling force of moon. A high tide is produced when the moons gravitational pull is weak. A region of disconnect also occur, these places occurs directly between the high and low tidal waves (Young). The pull of sun also impacts the earth and tends to cause its own tidal waves. The distance of the sun makes its tidal waves much smaller and weaker. However, when both sun and moon are in line their gravitational pull combines and results in larger tidal waves. During spring times, there are high chances of large tidal waves.

**Moon part in Religion**

In historic views and different current religions as well, moon is considered as rhythmic life and capable of governing an important change ion human life. Special importance is given to the days where moon disappears i.e. the three days of darkness and lunar eclipses. In old mythology it is generally believed that some monsters have slayed the moon and then revived it through magical powers (Tsepkalo). In historic hunting societies and cultures moon was understood to be a male which is dangerous for women at that time. In current day religions moons still play a part in determining the months cycle of Islamic calendar and in Christian religion it is used to determine the exact date of Easter. Easter usually falls on the first Sunday after full moon after March 21. If a full moon is on Sunday, Easter is then scheduled to be celebrated on the next Sunday.

The Phrase The cow jumped over the moon, is rhyme and the source of the famous expression “over the moon” in English language which means delighted, thrilled and happy. The rhyme may as well have a history of more than 1000 years and in the medieval years, there was a famous image of a cat playing a fiddle. Some historians have also connected it with Hathor worship methodologies and different groups of intellectual settings.

**Work Cited**

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