

Erosion on the earths moon, venus and mercury

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Erosion on the Earth's Moon, Venus and Mercury

There is very less erosion on the planet Venus's surface. Some scientists claim that the planet is not as old as other planets, thereby offering less time for erosion to occur. " A paucity of surface features usually indicates a young surface, not an old one, because there would be less time for cratering to occur." (Tim, 1994 cited in [www. talkorigins. org](http://www.talkorigins.org), 2003). However the cold temperature of the Venus compliments the concept of it being young. Had the planet been a new one, it would have been far hotter than what it is now because of the tremendous amount of energy released as a result of its birth. Its solid surface and thick crust also support this idea. The right reason why there is so less erosion observed in the surface of Mercury and Venus is that unlike Earth, these planets have no tectonic plates. Since there are no tectonic plates to move with respect to one another, therefore, there remains no room for the energy from the Mantle to escape. Instead, Venus goes through a repetitive process that makes the temperature of the Mantle rise to a critical point, beyond which the crust melts, though it takes quite long for it to renew itself, thereby dissipating all of the stored heat in the Mantle. Besides, Venus has no moons to produce tidal effect and accordingly, no erosion results because of a lack of moons' gravity. Erosion on the moon is very less / negligible because there is no wind or precipitation to cause erosion.

Why is the planet size and distance from the Sun important for having an atmosphere?

A planets size and its distance from the Sun play a very important role in deciding the atmosphere a planet would have. Let's take the example of the

planet Earth. Earth is the fifth-largest planet among all and it is two planets (Mercury and Venus) away from the Sun. Unlike many other planets, the huge size of Earth leaves a lot of room for the heat to accumulate in its interior i. e. the core of Earth. The accumulated heat forces the tectonic plates to slide past one another so that the heat can be dissipated outside the earth into the atmosphere.

“ Earth's geological activity also affects the average temperatures. As a simple example, if there is a massive volcanic eruption that sends large amounts of dust into the atmosphere, then the dust could block sunlight thereby cooling the Earth.” (Pandian, 2002).

Earth maintains such a distance from the Sun that would make life possible on Earth unlike other planets which are located at such a distance from the Sun that would either make them too hot or too cold for life to be possible on them. Besides, Earth's large distance from the Sun helps in the formation of the Ozone layer around the Earth which serves to prevent the UV rays incident on the Earth from causing any harm to all sorts of living creatures on Earth. Also, the ions in the Solar plasma are deflected by the magnetic field of Earth, thereby protecting life on Earth.

References:

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