

## Collisions of the early Earth's atmospheric molecules (H<sub>2</sub>O, CO<sub>2</sub>, N<sub>2</sub>) and solar-wind (H<sup>+</sup>)

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The atmosphere of early Earth was composed of H<sub>2</sub>O, CO<sub>2</sub> and N<sub>2</sub>. Those differs from the components as raw material in the Miller experiment. But, H<sup>+</sup> of 10<sup>9</sup>kg/sec were released from the Sun at 450km/sec. A part of those protons reached the Earth and collided with H<sub>2</sub>O, CO<sub>2</sub> and N<sub>2</sub>. Resultant substances of the reaction with proton such as -NH or -COOH and C<sub>n</sub>H<sub>2n+1</sub><sup>-</sup>, were contributed to the synthesis of biomolecules. The life was born in the environment of the puddle including such a material.

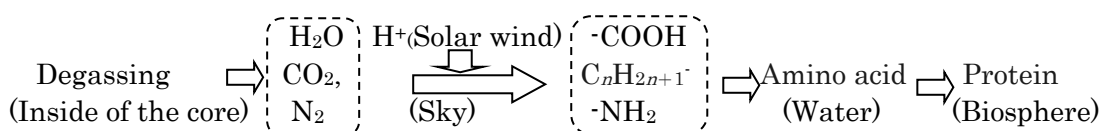


Fig.1 Influence of solar wind on the synthesis of biomolecules

Except for Mercury and Venus, the weight of planet and its rotational cycle are inversely proportional. It shows that the dust orbiting the planet becomes a lump in contact and eventually grows into the planet. If the moon is formed by accumulation of the dust orbiting the Earth, the density of the Moon is lighter than the Earth. The earth grew up to the gas planet taking a long time, and inside of the core became high temperature by high pressure and a differentiation of material took place. As for the gravitational field, Mercury grew via melted state of Na, and Venus grew via melted state of sulfur (S) with dry ice. Earth and Mars grew via the ice, but it became liquid water after nuclear fusion of the Sun began.

The primary gas of H<sub>2</sub> is lost immediately after the starting of the nuclear fusion of the Sun, because very large amounts of meteorites and protons (H<sup>+</sup>) bombarded to the Earth. After that, the ozone which was decomposed from H<sub>2</sub>O by ultraviolet rays binds to H<sup>+</sup> of the solar wind and returns to the water. There is an ionosphere above the sky of the Earth, and H<sup>+</sup> will rotate around the magnetic flux of the Earth, and the magnetic field invades the Earth in the Arctic and Antarctica, and hydrogen ions invade the Arctic and Antarctica. The ozone hole is accompanied by the occurrence of polar stratospheric clouds. We propose the explanation that the main cause of the ozone hole is solar wind.

How did form the sea from the water that is estimated to be weight of 0.024% of the Earth? When meteorites and asteroids hit a planet, the heated ground becomes a magma ocean. The heated H<sub>2</sub>O becomes a vapor water, and the water vapor in the sky becomes a cloud. The water that is cooled down returns to the ground by the rain. Therefore, the amount of water in the sea does not decrease.

The tidal action of the Earth's oceans increases the Moon's orbital radius. Assuming the orbit of the current Moon has been moved from the Earth's geostationary orbit during 4.5 billion years, the Moon will be away from the Earth at 3.74cm/year (3.8cm/year: lunar laser ranging experiment). The eccentricity rate of the orbit of Moon is 0.055. The Moon is orbiting around common center of the gravity with the Earth. So, the rotation period of the Moon coincides with the revolution period of the Moon.

The third law of Kepler may calculate the ratio of the orbit radius from the ratio of the revolution period. It is  $\{(27.3)^2\}^{1/3} = (9.1)$ . The ratio of the actual radius is  $(38/4.23) = 8.98$ . The ratio of the current Earth's mass with the mass at the time when the Moon was in the geostationary orbit and the sea was formed becomes  $(8.98/9.1)^3 = 0.96$  by the third law of Kepler. It is natural to think that the Earth was born before the Sun began the nuclear fusion reaction.