

How life has come from the mars?

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ABSTRACT

The life had travelled from the fourth planet from the sun that is mars. Mars is also called as the red planet because of its red color. According to the theory of late heavy bombardment, in the past around 4 billion years ago there was a heavy rain of comets in our solar system. In that situation one of the comet collided with the mars, this collision formed Argyre crater. Due to this collision, the volcanoes on the mars have erupted and they overflowed the iron containing magma from the core to surface. Thus iron came to surface. The iron reacted with the oxygen that is present at that time and formed rust iron (red color). The heat produced by the collision and volcanoes burned the life (organic molecules) of that time. Mars atmosphere was oxygen-rich and it contained basic elements which are required for the life before 4 billion year. That was disappeared due to the collision. By burning organic molecules we get carbon dioxide, water and heat. That's the reason for high content of carbon dioxide (95.32%) in atmosphere. As the recent research of NASA suggests that there was ocean on mars which is larger than Arctic Ocean. Water of that ocean had gone into space some 4 billion years ago. During the collision some land masses of mars containing life rose up in space and travelled to earth. This was collided. From these Martian meteorites the life came on earth and evolved.

INDEX TERMS

1. Formation of carbon in stars
2. Formation of life on mars
3. Late heavy bombardment effect on mars and earth
4. Eruption of volcanoes on mars
5. Formation of rust iron(ferric oxide)
6. Change in conditions on mars
7. Evolution of life on earth

I. INTRODUCTION

Many Scientist have endeavoring to know the inception of the life on earth. To elicit this data regarding the inception stage of life on earth, many scientists have been facing umpteen constraints. One of them was Professor Steven benner, Prof Benner yielded a enlightened that "This form of molybdenum couldn't have been available on Earth at the time life first began, because three billion years ago, the surface of the Earth had very little oxygen, but Mars did". Prof Benner presented results that suggest minerals containing the elements boron and molybdenum is the key in assembling atoms into life-forming molecules.

The researcher points out that boron minerals help carbohydrate rings to form from pre-biotic chemicals, and then molybdenum takes that intermediate molecule and rearranges it to form ribose, and hence RNA. Now the origin of the life had become an amusing topic to the researchers.

II. RESEARCH ELABORATION

1. Formation of carbon in star:-

In the life cycle of a star, the red giant was the largest stage. In this stage the star turn-off hydrogen fuel then it goes for the helium for the nuclear fusion. In this He+He combine to form the carbon nucleus by the process called as Nucleosynthesis (shown in the figure 2). This process forms a layer of carbon in the red giant stage of a star.

Legend																	
Big Bang (B)				Large stars (L)				Supernovae (S)				Man-made (M)					
Cosmic rays (C)				Small stars (S)													
H (B)	Li (C)	Be (C)	B (B)	C (S)	N (S)	O (S)	F (S)	Ne (S)	Na (L)	Mg (L)	Al (S)	Si (S)	P (S)	S (S)	Cl (S)	Ar (S)	
K (L)	Ca (L)	Sc (L)	Ti (L)	V (L)	Cr (L)	Mn (L)	Fe (L)	Co (L)	Ni (L)	Cu (L)	Zn (L)	Ga (S)	Ge (S)	As (S)	Se (S)	Br (S)	Kr (S)
Rb (S)	Sr (L)	Y (L)	Zr (L)	Nb (L)	Mo (L)	Tc (L)	Ru (L)	Rh (L)	Pd (L)	Ag (L)	Cd (L)	In (S)	Sn (S)	Sb (S)	Te (S)	I (S)	Xe (S)
Cs (S)	Ba (L)	Hf (L)	Ta (L)	W (L)	Re (L)	Os (L)	Ir (L)	Pt (L)	Au (L)	Hg (L)	Tl (S)	Pb (S)	Bi (S)	Po (S)	At (S)	Rn (S)	
Fr (S)	Ra (S)	La (L)	Ce (L)	Pr (L)	Nd (L)	Pm (L)	Sm (L)	Eu (L)	Gd (L)	Tb (L)	Dy (L)	Ho (L)	Er (L)	Tm (L)	Yb (L)	Lu (L)	
		Ac (S)	Th (S)	Pa (S)	U (S)	Np (S)	Pu (S)	Am (M)	Cm (M)	Bk (M)	Cf (M)	Es (M)	Fm (M)	Md (M)	No (M)	Lr (M)	

Figure.1 Periodic table showing the cosmogenic origin of each element.

Every element forms in the star only (as shown in the figure.1). After the stage of red giant the star would transform into the dwarf stage. In this stage the star will blast and it forms supernova, which is end of the star. This supernova wave sweeps up an expanding shell of gas and dust called a supernova remnant. In this each layer of the red giant containing different elements would spread around the blast area. These layers spread up to some boundary.

For example: - outer layer of red giant is hydrogen and helium gas, these layers spreaded from Jupiter to Neptune. So, the carbon layer had spreaded from Venus to Mars. Stars form supernova and then they give birth to the dozens of stars. Then layers spreaded by supernova are the present planets chemical compositions. So, the mother (red giant) of the sun gave carbon to the planets, which is a life forming element.

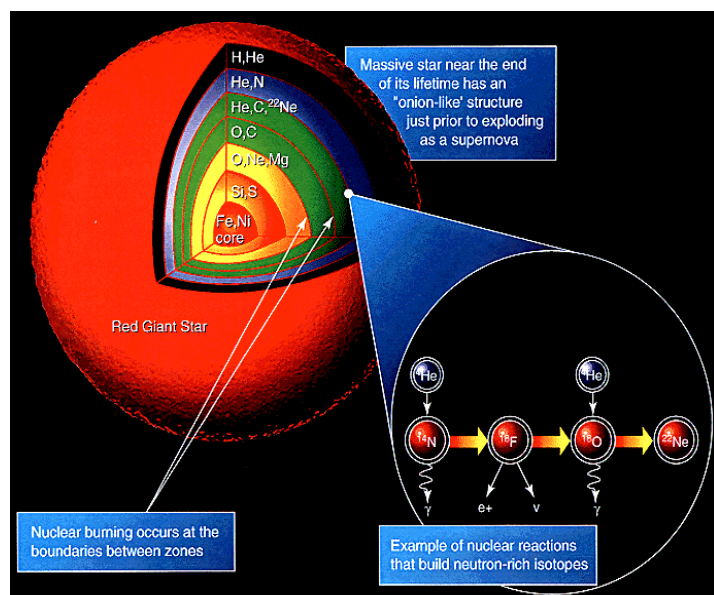


Figure.2 Cross section of a red giant showing Nucleosynthesis and elements formed.

2. Formation of life on Mars:-

As the star scattered the carbon on Venus, Earth and Mars these three planets can support the life. Because of some reasons Venus and earth are not able to support the life. Venus is the second planet from the sun so that it contained more heat that's why Venus did not supported the life. In case of earth, on the earth there was no water and oxygen before 4.1 billion years ago. So, earth didn't support the life. But mars had every condition that is needed for the survival of the organism. Mars had oxygen, ozone layer, and some basic element which support life such as carbon, hydrogen, nitrogen, calcium, potassium, sulfur, chlorine, and magnesium. These elements were shown in the figure.3. The differences between Martian meteorite and the Martian rocks examined by the NASA rover explained that mars had an oxygen-rich atmosphere 4 billion years ago. Mars planet also had a permanent ozone layer in the past 4 billion years ago which became now as a seasonally ozone layer by the collision of a great comet 4 billion years ago this was founded by ESA's mars express orbiter. Recent NASA discovery states that there was ocean on mars which had water more than that of Arctic Ocean on earth 4 billion years ago. Mars also had a solar wind resistant magnetic field but now it was minimized due to the outcome of iron from the core and the Martian core cooled due to expose of core to cool temperatures during collision. According to Prof. Benner, when molybdenum becomes highly oxidized that it is able to influence how early life formed. Analysis of a Martian meteorite recently showed that there was boron on Mars; we found oxidized form of molybdenum was there too. At first, organic molecule formed (monomer) and they grouped together to form polymers and then they formed the first proto cells. They evolved and then species came on the mars before 4 billion years ago.

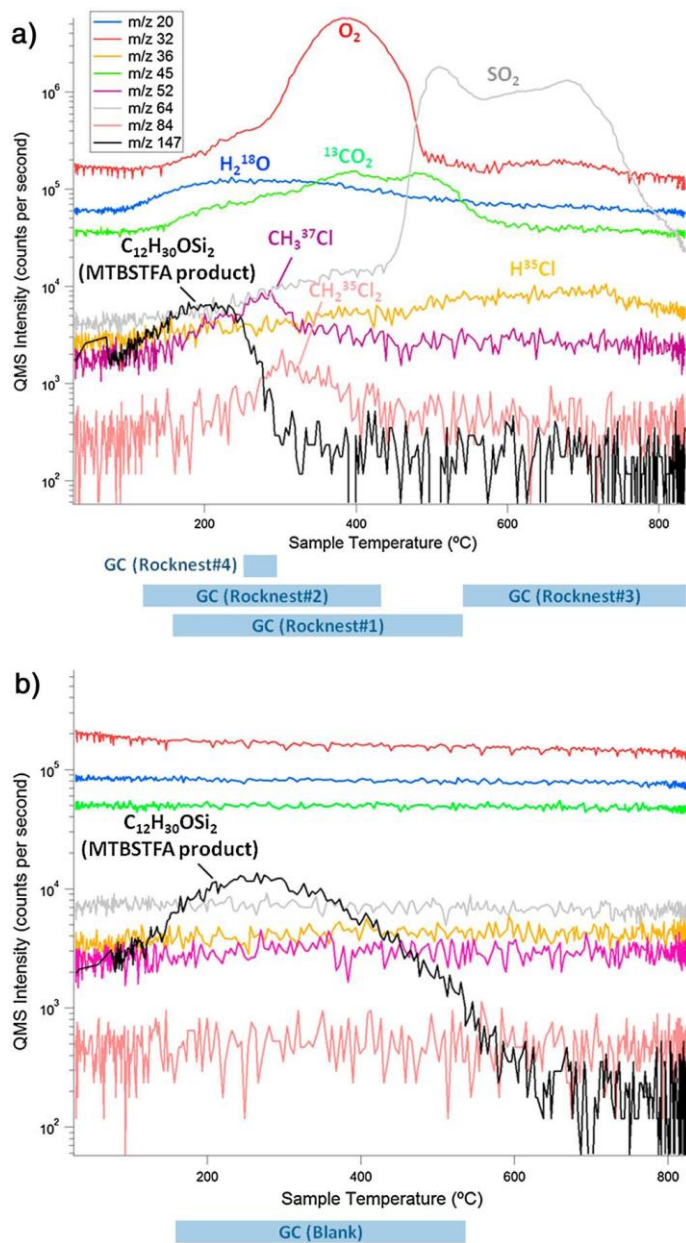


Figure.3 (a) SAM EGA of Rocknest#1 compared to (b) The EGA blank showing selected m/z values plotted in cps As a function of sample temperature during the pyrolysis Run. The hydrocarbon trap temperature cuts used for all of The GC analyses are indicated by blue bars.

3. Late heavy bombardment effect on mars and earth:-

The Late Heavy Bombardment (abbreviated LHB and also known as the lunar cataclysm) is a hypothetical event thought to have occurred approximately 4.1 to 3.8 billion years ago. During this interval, a disproportionately large number of asteroids and comets apparently collided with the early terrestrial planets in the inner solar system.

The LHB happened after the Earth and other rocky planets including Mars had formed and accreted most of their mass, but still quite early in Earth history. Due to this late heavy bombardment the giant comet was collided with the Mars (evidence for the collision is shown in the figure.4). Due to this collision, the atmosphere of Mars which support the life has been destroyed. At this time meteorites of Mars and comet attacked the earth. During this late heavy bombardment Mars lost the atmosphere and Earth gained the atmosphere which is suitable for the survival of life. The Earth gained the water by the volcanoes and the comets. The proof of comets contain water is 'Deep Impact' was a NASA space probe launched from Cape Canaveral Air Force Station on January 12, 2005. This was designed to collide with one of the comet which came near to Earth in 2005 to know that comets have water in them. The collision was successful; as a result many million gallons of water had come out from the comet. Scientist doubted that the water on the Earth had been deposited by the comets during the late bombardment period.

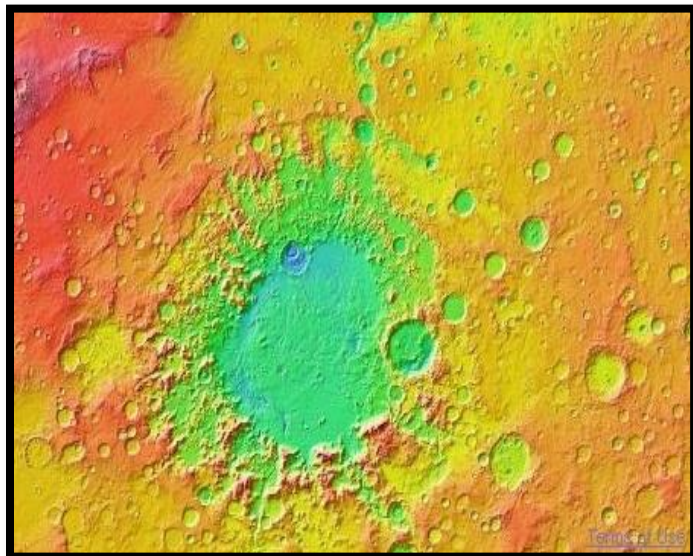


Figure.4 The above image was taken from the Google Mars and it was an elevation map of an Argire crater. This was formed around 4 billion years ago. The big green spot is the image was the collision area of comet.

4. Eruption of volcanoes on Mars:-

During the period of late heavy bombardment (4.1-3.8 billion years ago), one giant comet had collision with the Mars. At the time of collision, the life supporting atmosphere of Mars has been destroyed. The vibrations that are occurred by the collision on the Mars resulted to the eruption of the nearer volcanoes (shown in the figure.5). These volcanoes have high pressure in it. During collision the pressure limit in the volcano has been crossed the limit, so that volcanoes erupted.

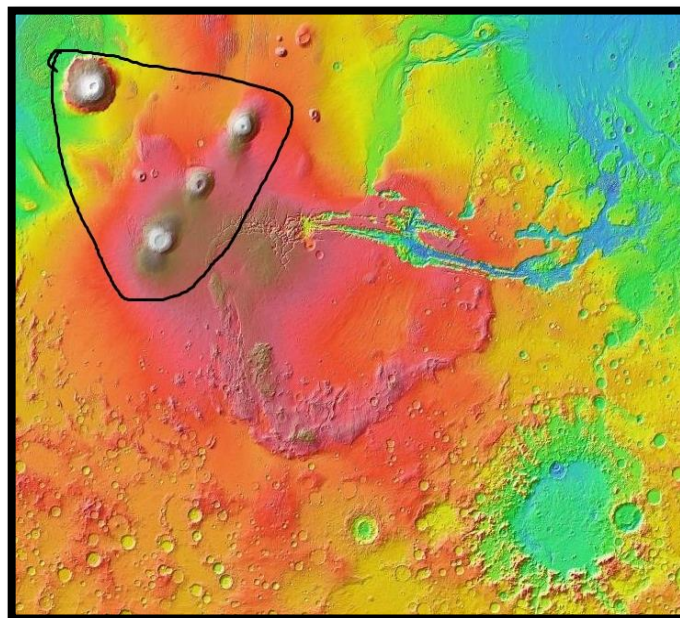


Figure.5 In the above image we can see the nearest volcanoes to the collision area.

These volcanoes after the eruption, they brought up the magma containing iron from the core to the surface. As the magma is coming from the inner core. Inner core contains the high amount of iron in it. This iron was spreaded in the surroundings of the erupted volcanoes (shown in the figure.6).

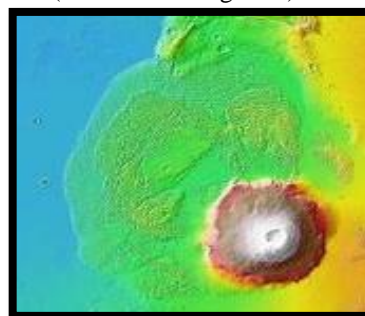
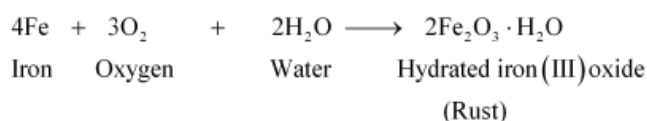


Figure.6 The above image shows the spreaded magma on the surface of Mars by Olympus Mons volcano.

5. Formation of ferric oxide on Mars:-

Due to the eruption of the volcanoes the iron from the inner core was brought-up to the surface. This iron was reacted with the oxygen present at that time to form ferric oxide in presence of moisture in the air. This is an oxidation reaction. The chemical reaction is given below



The present Mars is containing that rust formed by rusting of iron that came from magma. As the rust is the powder it was carried away by the wind and spreaded all over the Martian surface that is the reason for the soil containing high content of iron particles (shown in the figure.7).

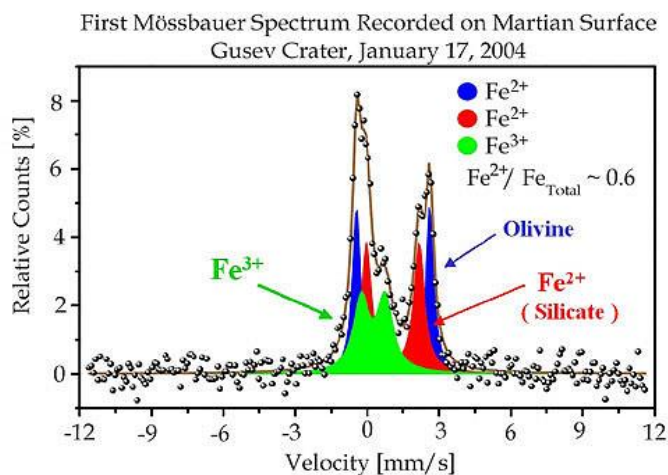


Figure.7 The above graph refers; mars exploration rover finds these contents in its first close-up examination of a patch of soil on Jan.17, 2004.

6. Change in conditions on mars:-

Due to the collision of a great comet with the mars, huge amount of the heat was produced. Due to that heat, the organisms of that time have been burned and extincted. Every organism is made-up of organic molecules. By burning the organic molecules we get water, carbon dioxide and heat. The heat evolved from the collision and by burning of organic molecules led the water to evaporate. That water had gone into the space and some content remained on Martian surface, this water helped to the oxidization the iron brought by the magma. The carbon dioxide evolved by combustion of organic molecules was released into the atmosphere.

That's why; the present Martian atmosphere contained 95.32% of carbon dioxide. Due the deposit of iron from the core to the surface led to weakening of magnetic field on mars. In absence of this magnetic field the high energy radiation entered the mars in form of solar winds. Due to the collision on comet on mars the ozone layer and the oxygen rich atmosphere had been destroyed. At the time of collision, some land masses (Martian meteorites) of the Martian surface rose up into space. Some of these were carried the living life in it. The water present in ocean at that time has been gone into space by forceful collision and evaporation. The Martian meteorites (with life) that rose up into space were travelled in all directions and some of them were collided with the earth. As the first Martian meteorite hit the earth before 4 billion years ago from this life moved Martian surface to earth surface.

7. Evolution of life on earth:-

As the collision occurred on mars a huge land mass (Martian meteorite) rose up into the space. This rock contained spores of bacteria or the seed which is in the stage of dormancy. So far many meteorites are collected which came from the mars.

Out of the 120, mars rocks we have collected so far, some contain promising evidence to support Benner's theory. The below paragraph was the statement given by the Benner was "Analysis of a mars rock recently showed that there was boron on mars. We now believe that the oxidized form of molybdenum was there too. In addition, recent studies show that these conditions suitable for the origin of life may still exist on mars."The fossil record tells us that life first appeared on earth surface is around 3.5 billion years ago.

4 billion years ago, the rocks that are arrived from mars contained the life (organic molecules).Scientists theorize that, simple organic compounds (monomers) slowly formed and combined into more complex compounds (polymers). Then, as sea currents pooled these large molecules by "hotspots" like oceanic shores and hydrothermal vents on the sea floor, they may have eventually combined to form the first protocells. However these building blocks combined, there is growing evidence that the first cells replicated using RNA (ribose nucleic acid)instead of DNA(deoxyribose nucleic acid), and that the switch to DNA replication, which is stable but harder to achieve, happened only much later in the history of evolution. According to the theory of evolution, we and every living being in the world had evolved from the tiny protocells. Repeated formation of new species, change within species and loss of species throughout the evolutionary history of life on Earth can be inferred from shared sets of morphological and biochemical traits, including shared DNA sequences.

III. RESULT

Carbon, which is had come from the stars which is a basic element of the life. Due to unsuitable conditions on Venus and earth, life had not survived and no organic molecules formed. But the mars supported life and formed the organic molecules. During late heavy bombardment (4.1-3.8 billion years ago), life had travelled from the Mars to Earth. This period was very important period for earth because earth gained the life and the atmosphere which supports the life and the lost the atmosphere.

All these situations were happened 4 billion years ago. After this situation, 3.5 billion years ago the life started surviving on earth. By the evolution of these first organisms many new organisms came and many extincted. At present humans and present day organisms were surviving.

IV. CONCLUSION

Late heavy bombardment was the reason for destroy of past life on the mars. That life was vanished by the collision of a giant comet 4 billion years ago. Due to that collision Martian meteorites containing life came to earth. From these rocks the simple organic molecules arrived and they evolved. By evolution the present world had come. So the life on earth has come from the neighboring planet the Mars. According to panspermian theory, "seeds of life present all over the universe". The statement was right because the seed of life was carbon which was produced in all stars that are present in universe.

Same as the mars, our earth also had collision with a giant comet 66 million years ago. After the collision on earth the major species (dinosaurs; for example:-tyrannosaurus Rex) has extincted and the minor species (bacteria; for example:-cyanobacteria) has survived. Similarly the minor species of the mars may be survived till now .They may remain indomitable to us.

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