Mars Mission Essay, Research Paper

The planet Mars has always been interesting to me, because it is such a big mystery to everyone. It is important the astronomer today learn more about Mars for one day that could be our home planet . Space exploration has always been huge, what problem there might be, how long it would take, and what would make it safe. Therefore to prepare for all of those things, you must first research your destination.

The net Mars is an interesting and mysterious planet. It is often referred to as the Red Planet. The rocks, soil, and sky all have a red hue on account of rust. Mars is the fourth planet from the sun at about 141 million miles (228 million kilometers) and the last terrestrial planet from the Sun. Mars follows closely behind Earth but is comparatively smaller, with about half the diameter of Earth (6,794-km) and about one-tenth of Earth s mass (6.419 x 1023 kg). Thus the force of gravity on Mars is about one-third of that on Earth. Mars is probably the planet we know the most about since it is so close to Earth, though what we know now is not even close to everything about the planet. As time goes on, our knowledge of this mysterious planet will expand.

The atmosphere of Mars is quite different from that of Earth. It is composed primarily of carbon dioxide with small amounts of other gases. The six most common components of the atmosphere are Carbon Dioxide at 95.32%; Nitrogen at 2.7%; Argon at 1.6%; Oxygen at 0.13%; Water at 0.03%; and Neon at 0.00025 %. Martian air contains only about 1/1,000 as much water as our air, but even this small amount can condense out, forming clouds that rise high in the atmosphere or swirl around the slopes of towering volcanoes. Local patches of early morning fog can form in valleys. At the Viking Lander 2 site, a thin layer of water frost covered the ground each winter. There is evidence that in the past a denser Martian atmosphere may have allowed water to flow on the planet. Physical features closely resembling shorelines, gorges, riverbeds and islands suggest that great rivers once marked the planet.

Mars is smaller and, because of its greater distance from the Sun, cooler than the eearth. It has seasons similar to Earth’s because the tilt of its rotational axis to the plane of its orbit about the Sun is about the same as earth’s. Interestingly, unlike Earth the significant elliptical shape of the Martian orbit means that the seasons on Mars are also affected by varying distance from the Sun. In the case of earth, because of its almost circular orbit, our seasons result simply from the tilt of the earth’s rotational axis.

The average recorded temperature on Mars is -81. F (-63. C) with a maximum temperature of 68. F (20. C) and a minimum of -220. F (-140. C). Barometric pressure varies at each landing site on a semiannual basis. Carbon dioxide, the major component of the atmosphere, freezes out to form an immense polar cap, alternately at each pole. The carbon dioxide forms a great cover of snow and then evaporates again with the coming of spring in each hemisphere.

Although it is much smaller, Mars does have the same surface land area as Earth. Other than Earth, Mars posses the most highly varied and interesting known terrain in our solar system. The surface of Mars is a very hostile place; however, it is more like Earth s surface than any other planet in our solar system. Much of the Martian surface is rough and full of craters, but expansive flat plains and smooth hills can also be found. Unlike any other planet, there is a striking difference between the northern and southern hemispheres of Mars; one is extremely rough and old while the other is young and relatively smooth. The southern hemisphere is scattered with ancient craters of all sizes and is also elevated by a several kilometers, which creates a visible boundary. On the opposite end, the northern hemisphere consists of a wider variety of geological features, but is obviously smoother and much younger. There are large volcanoes, a great rift valley, and a variety of channels.

Mars has been the subject of much discussion lately, mostly because of the bacteria-like material found in a piece of a meteorite from Mars in 1996. Before space exploration, Mars was considered the best candidate for harboring extraterrestrial life. Astronomers thought they saw straight lines crisscrossing its surface. This led to the popular belief that irrigation canals on the planet had been constructed by intelligent beings. Another reason for scientists to expect life on Mars had to do with the apparent seasonal color changes on the planet’s surface. This phenomenon led to speculation that conditions might support a bloom of Martian vegetation during the warmer months and cause plant life to become dormant during colder periods. In July of 1965, the Mariner 4 transmitted 22 close-up pictures of Mars. All that was revealed by these pictures was a surface containing many craters and naturally occurring channels, but no evidence of artificial canals or flowing water. Finally, in July and September 1976, Viking Landers 1 and 2 touched down on the surface of Mars. The three biology experiments aboard the landers discovered unexpected chemical activity in the Martian soil, but provided no clear evidence for the presence of living microorganisms in the soil near the landing sites. According to mission biologists, Mars is self-sterilizing. They believe the combination of solar ultraviolet radiation that saturates the surface, the extreme dryness of the soil, and the oxidizing nature of the soil chemistry prevent the formation of living organisms in the Martian soil. The question of life on Mars at some time in the distant past remains open.

Mars is a planet full of mysteries just waiting to be discovered. It could perhaps hold the answer to questions we have been asking ourselves for years, such as the origin of life on earth. Is it possible that in the past there was water running on Mars, and when the end came, the beings there moved to earth? The answer is yes, for when we are dealing with space, anything is conceivable. We must keep our minds open to anything, for as we continue to search the space around us, we will continue to make new discoveries. The best way to say this is to use a quote from Star Trek, Space: The final frontier.

In conclusion the environment of mars is very different from our planets, therefore a lot of preparation must be established before we can safely put a human on mars. In the near future there will be technologies that will solve all of our problems, and there is no question that space exploration will only go further in to the future.

Sources

Encarta 99, Microsoft

http://www.bigchalk.com/

http://seds.lpl.arizona.edu/nineplanets/nineplanets/mars.html

http://mars.jpl.nasa.gov/

320