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WATER IN MARTIAN LAVA TUBES

Abstract

Water in Martian Lava Tubes Svetozar Zirnov, Austin Mardon The Antarctic Institute of Canada Contact:aamardon@yahoo.ca Abstract: This paper outlines the importance of Martian lava tubes, as well as how they may be used as a source of water, when astronauts do not have sufficient amounts of water while on a space mission. Lava tubes are formed from fast moving lava which later on cools and thus constitutes caves which may be used for many various functions, one of which is for the habitation of Mars by future colonists. The inhabitation of another body in space, beside the earth, would serve many various functions, such as protecting humanity in case of a catastrophe, or a natural disaster that may occur on earth, sometime in the future, thus proper exploration of the planet are necessary to ensure its ability to manage human life. Lava tubes may be used for many different functions, such as being emergency shelters, storages for space equipment and supplies, storages for medical supplies, food, and water, among many others. Water is necessary for human survival, a human is not able to live without sufficient amounts of water that the human body must intake every single day. It must be noted that since lava tubes are sheltered environments, they likely hold large amounts of ice, which if melted can be used as water in case of an emergency and lack of water supplies for astronauts on a mission. Lava tubes keep the ice from melting, since in confined spaces the temperature remains fairly constant and cold, as well as confined spaces, are often dark which helps them keep the constant temperatures they do, thus Martian lava tubes must be thoroughly explored and taken into account, since they may be used as a source of water in an emergency situation where astronauts do not have sufficient water supplies in their space missions, or if astronauts decided to stay in the lava tubes, while on a space exploration mission to Mars. References: [1]Dunbar, B. (2009, July 14). Micrometeoroids and Space Debris. Retrieved from https://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Micrometeoroids$_{S}pace_{D}ebris.html$[2]$Cain, F.$ $//www.universetoday.com/19623/temperature-of-the-moon/$[3]$(n.d.).Retrievedfromhttps://space.nss.org/settlem$ $Water, Martian, Lavatubes, Confinedspaces, Ice, Temperatures, Constant, Cold, Exploration, Habitation, SpaceMissi$