Martian Lava Tubes: A Resource that should be mapped today for use as habitation structures when we go to Mars. Austin Albert Mardon, Antarctic Institute of Canada, (Director, Post Office Box 1223, Main Post Office, Edmonton, Alberta, CANADA. T5J 2M4. amardon@shaw.ca)

Discussion. The author has proposed that manned habitation that is permanent should be Martian lava tubes that are altered so that they can be used. The first stage before that is to launch in-depth mapping and scientific exploration of the locations and structural characteristics of Martian lava tubes. Many analogue terrestrial lava tubes exist on Earth that have been mapped and scientifically studied over the years. With the extensive orbital remote sensing that has occurred of Mars surface over the last generation it is possible to map out Mars lava tubes that show surface characteristics and evidence. Lava tubes are structural different under the Mars's surface due to different geochemical, weathering and gravity environments. The first stage before the possibility of using a lava tube as a tunnel that could have other structures or even be pressurized is to find out where they are on the Mars. Then of course dedicated robotic missions would have to be made and they would have to be examined for the potential lava tubes feasibility as a base structure. Many scenarios show the first base on the Mars being on the surface but these structures in some cases if they were sealed could be pressurized and used without any construction and any buildings that might be constructed or transported to the lava tubes would not have to withstand the harsh environment of Mars as they would already be under the surface of the Mars protected within the selected altered tubes.

Conclusion. Their would be little hardware cost in mapping out Martian lava tubes and examining the literature and research done over the last generation lava tubes to see if Martian lava tubes could be used for the structural skeleton for future Martian permanent first stage manned stations on Mars.