



COLONIZATION

A PERMANENT HABITAT FOR THE COLONIZATION OF MARS

*A thesis submitted in fulfilment of the requirements of the degree of Master in Engineering Science (Research) in
Mechanical Engineering*

BY

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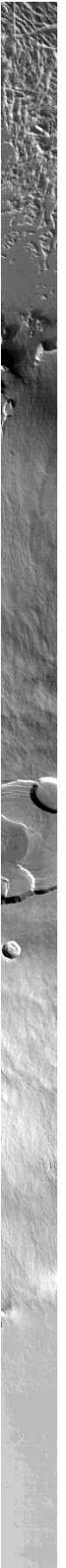
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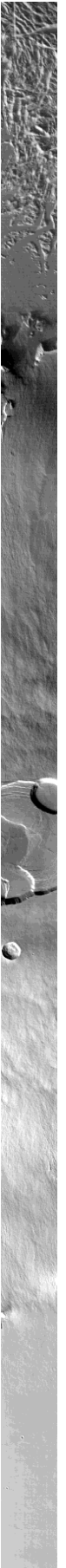


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ABSTRACT

The information contained in this thesis explores the viability of the development of a habitat for the human habitation of Mars using current technology supplemented with limited additional research, primarily in the fields of sustainable, self sufficient life support and human health.

The key aspects of habitat design identified and explored within this document include the habitat's location, design, construction method, facilities, power supply; material and consumable sources, and life support systems. Each is discussed in detail, including available alternatives, advantages and disadvantages.

Many aspects of design will have interrelated dependencies, each of which must be considered and explored in any habitat design. As an example of such interrelationship, the habitat location (e.g. polar versus equatorial) will affect many considerations, including power supply requirements, construction methodology, life support system details, and water and fuel source options.

The body of this report contains a solid foundation of many important aspects to be considered in a Martian habitat design. However, it is recognised that many of the subject areas are contained within rapidly developing fields. This primer is designed to allow designers to appreciate the complexities of habitat design and currently available options.

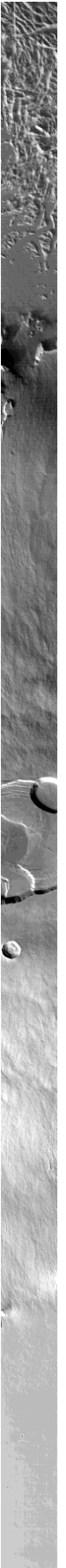
STATEMENT OF ORIGINALITY

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Signed: _____ Date: 18 July 2009

Matthew Hender



KEY MAP OF MARS

The map below is a simple map identifying many of the key features of the Martian surface. It may aid the reader as reference whilst reading the following sections. A more detailed series of maps is included in Appendix A, which can be used where further information is required.

