MSA

Mars Society Australia

About MSA
MSA Technical
ORC
Jarntimarra
Marsupial
MARS-OZ
SAFMARS
Mars Skin
How you can help

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Goals

Broad public outreach

- Local activities
- National initiatives
- “ Make Mars more real for more people” , engage media
- Increase membership, grow movement

Advocacy and policy development

- Strengthen local public support for Mars exploration
- Lobby for a significant Australian role in Mars exploration

Private activity

- Technical programme
- Grow and facilitate Australian Mars science and engineering community
- Position Australians for roles in multi-billion dollar international human Mars programme

Where’ s our national space programme?!?!

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Goals

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Mars Society (US)

Founded August 1997

Boulder, Colorado

International

50 countries

5,000 members

Rank	Country	Population - 2001 Total	Population - 2001 Growth	Membership Total	Membership Per Million
1	Iceland	281,000	0.67	5	17.79
2	Bermuda	60,000		1	16.67
3	United States	285,926,000	0.89	3430	12.00
4	Canada	31,015,000	0.8	341	10.99
5	Australia	19,339,000	0.99	61	3.15
6	New Zealand	3,808,000	0.73	12	3.15
7	United Kingdom	59,541,000	0.18	177	2.97
8	Malta	392,000	0.4	1	2.55
9	Luxembourg	443,000	1.2	1	2.26
10	Switzerland	7,170,000	-0.06	14	1.95

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Operation Red Centre

Establish Australian node of four-base global network

- Devon Island, Utah, Iceland, Australia
- Year-round field operations
- Operations research using mock-up hardware from other MSA technical projects
- Multi-year, i.e. ORC02, ORC03 etc

Dual role – both important

- Primarily mission operations research
- Secondarily public awareness raising

Goals

- Foster and facilitate Australian and international Mars mission R&D
- Make a local contribution to international mission planning
- Position Australia for a role in future international human missions

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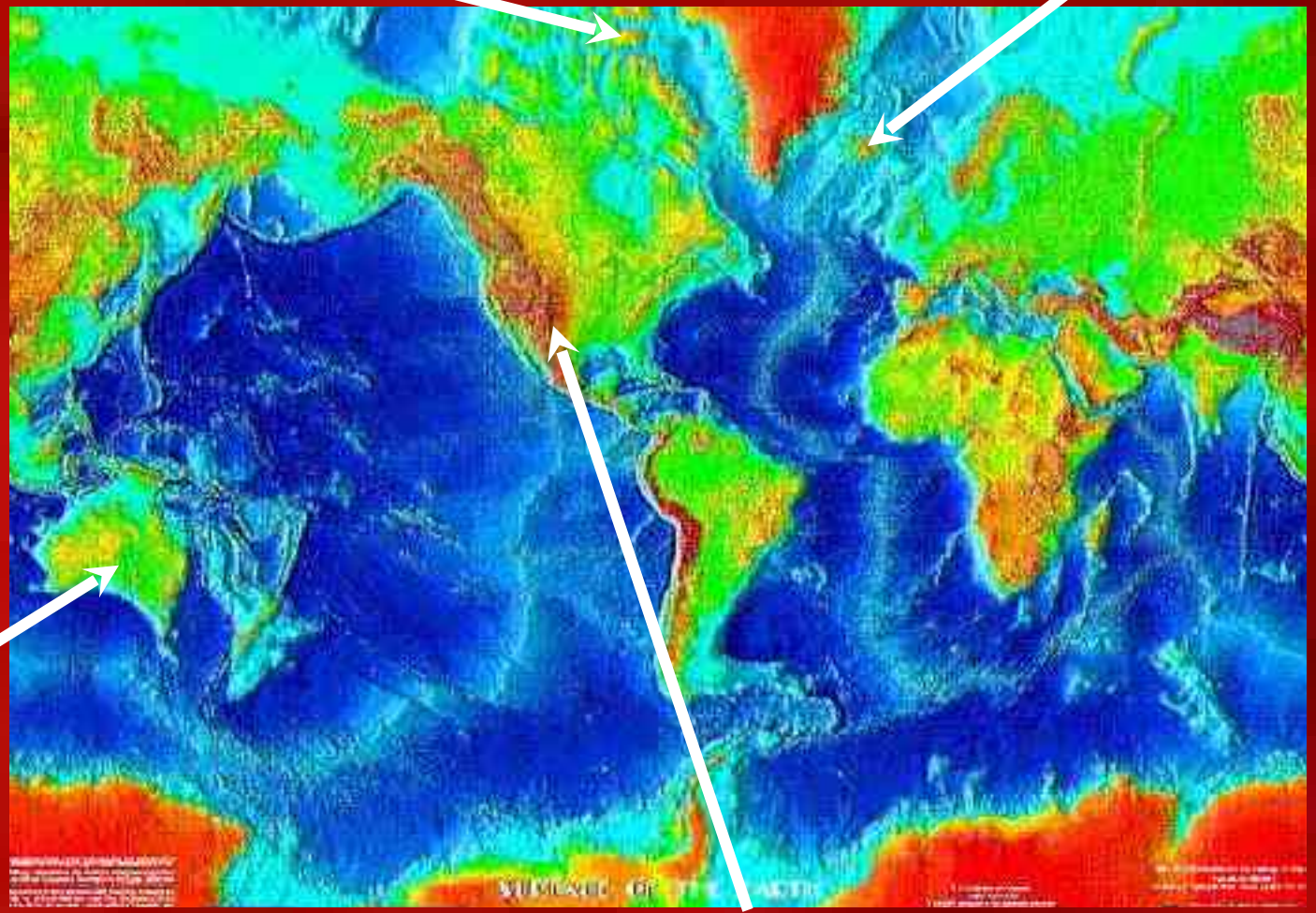
Global Network



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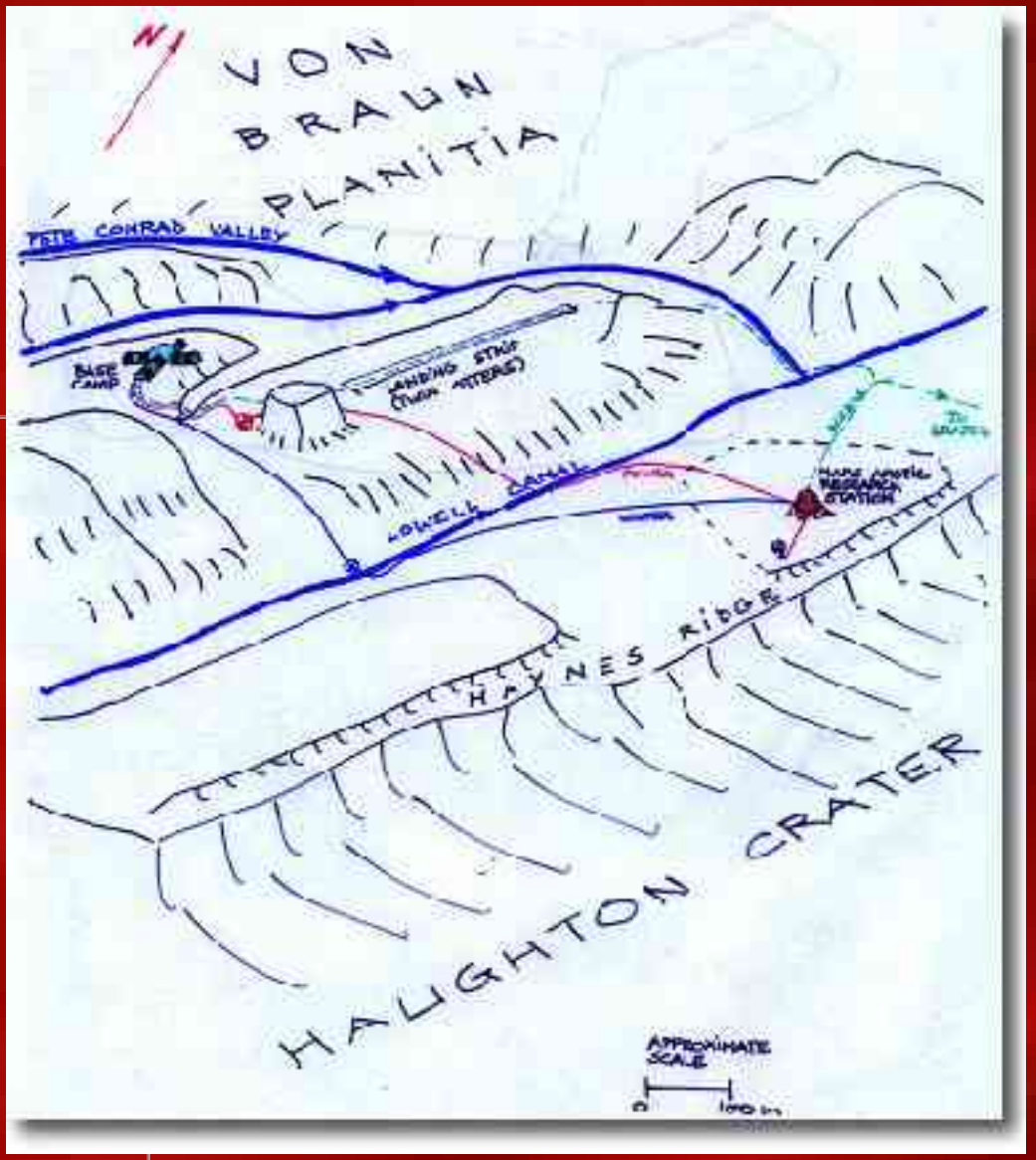
First HMP field work in 1997

F-MARS assembled in 2000 with airdrops

Devon Island

http://arctic.marssociety.org/images/canada.gif



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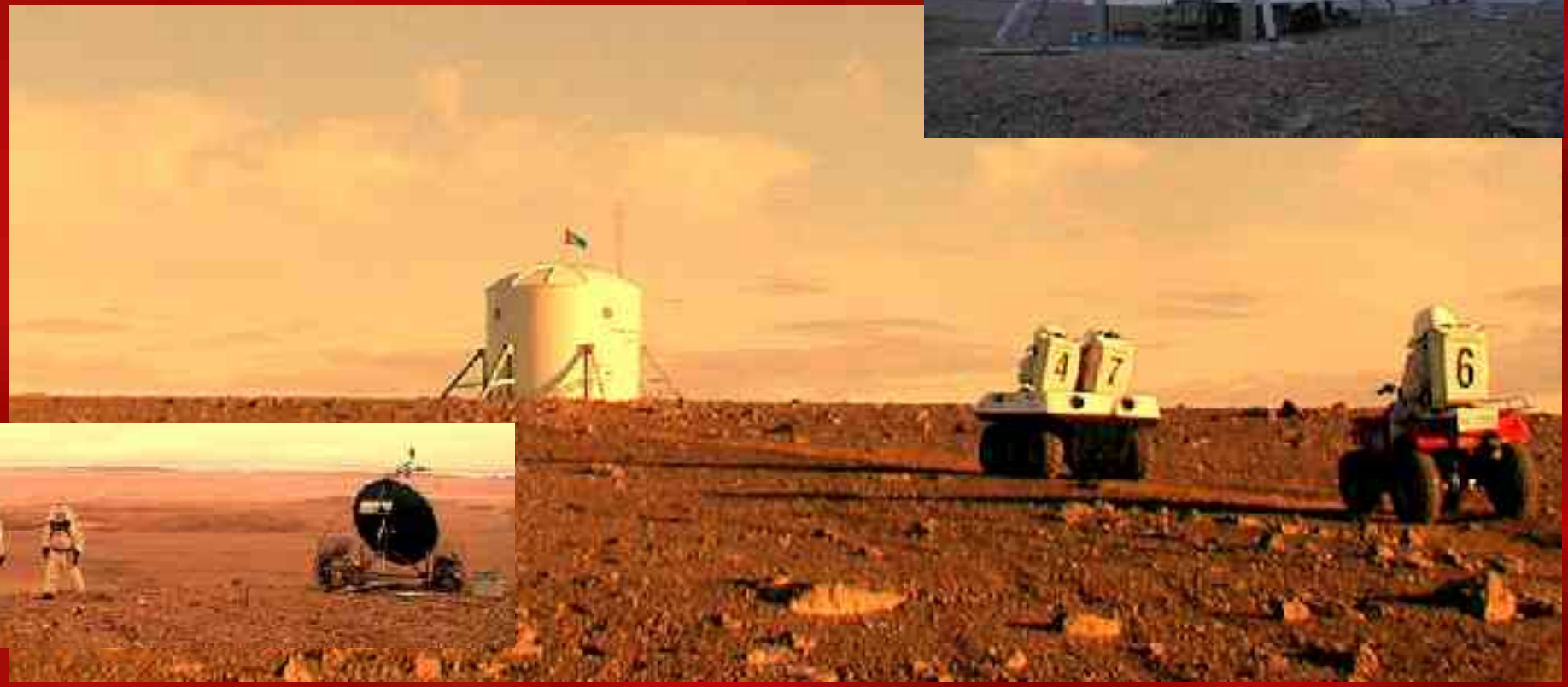
F-MARS

Commissioning 2000

First real field ops, 6 weeks in 2001



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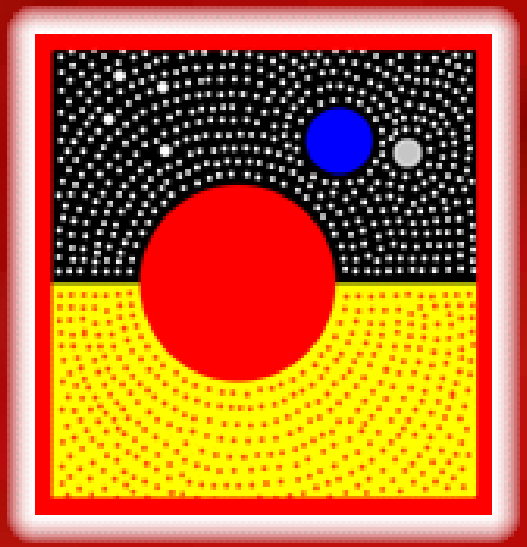

Project Jarntimarra

Field expeditions and sorties

- Into remote areas of continental Australia
- Provides field experience for ORC

Database (JNT-DB)

- ver1A available at website
- Expand Australian localities, then extend worldwide
- Become a primary source of information for international workers

Goals

- Assemble an online database of worldwide analogue sites for scientific and operations research
- Identify potential sites for ORC
- Grow and facilitate an Australian Mars mission R&D community, encourage international researchers to work here

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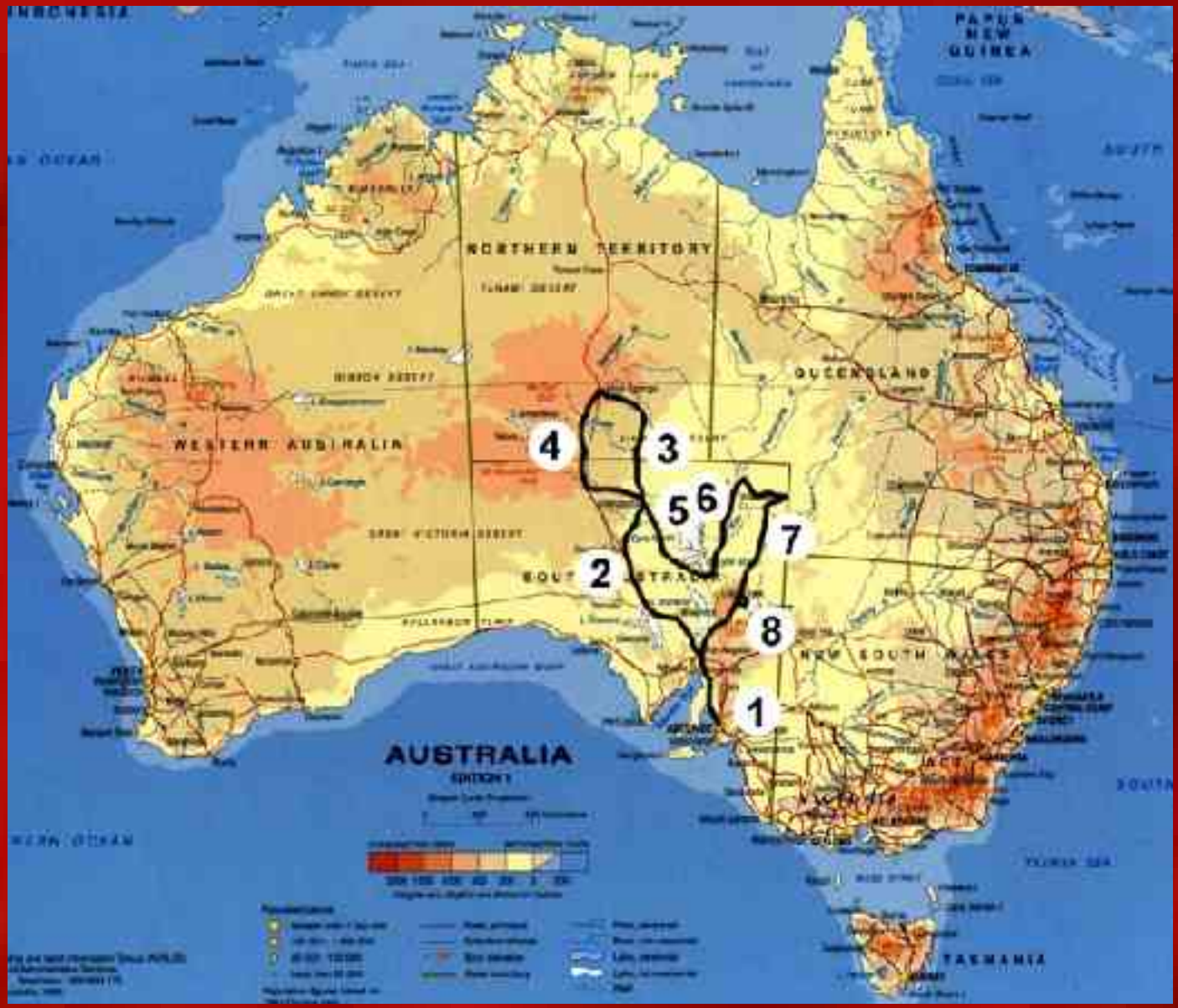
JNT-1



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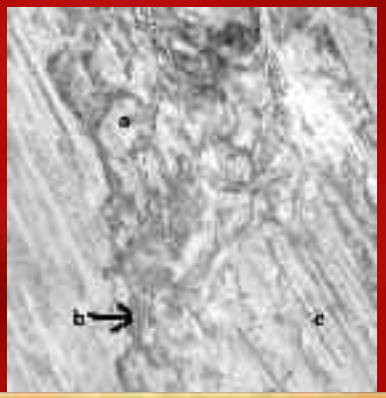
JNT-1

Hale River flood channel



Henbury Craters

“ Presidential pan” from the Imager for Mars Pathfinder (IMP) in Ares Valles

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JNT-1

Who (includes)

Dr Jonathan Clarke, geologist ANU, Expedition Leader and lead scientist

Dr Graham Mann, roboticist Murdoch Uni and lead engineer

Dr Carol Stoker, NASA Ames

Dr Larry Lemke, NASA Ames

Dr Vic Gostin, geologist Uni of Adelaide

Prof Malcolm Walter, Director, Australian Centre for Astrobiology

What

Visual reconnaissance

Photography

Consultation with locals

Sampling of hot artesian bores along Birdsville Track – identify new extremophiles

3 day workshop at Arkaroola to discuss MSA technical programme

Journal paper on Australian Mars analogue sites

Shortlisting of ORC sites based on expedition report

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Project Marsupial

Family of mobility vehicles

- Mobility critical for 18 month exploration of Mars landing areas
- Impetus from international competition

First vehicle

- Human Operations Prototype - HOP
- Preliminary design complete
- Base chassis acquired

Goals

- Provide a key platform for field operations research and for development of niche hardware systems (e.g. sensors)
- Test particular functional designs for mobility vehicles, contribute to future designs
- Investigate crew-crew, crew-machine and machine-machine interactions and produce research papers

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Mars Society Rover Initiative

Other groups

- University of Michigan led Everest
- University of Toronto led ARES

ARES
Analog Rover Experimental System

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HOP Preliminary work

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MARSUPIAL

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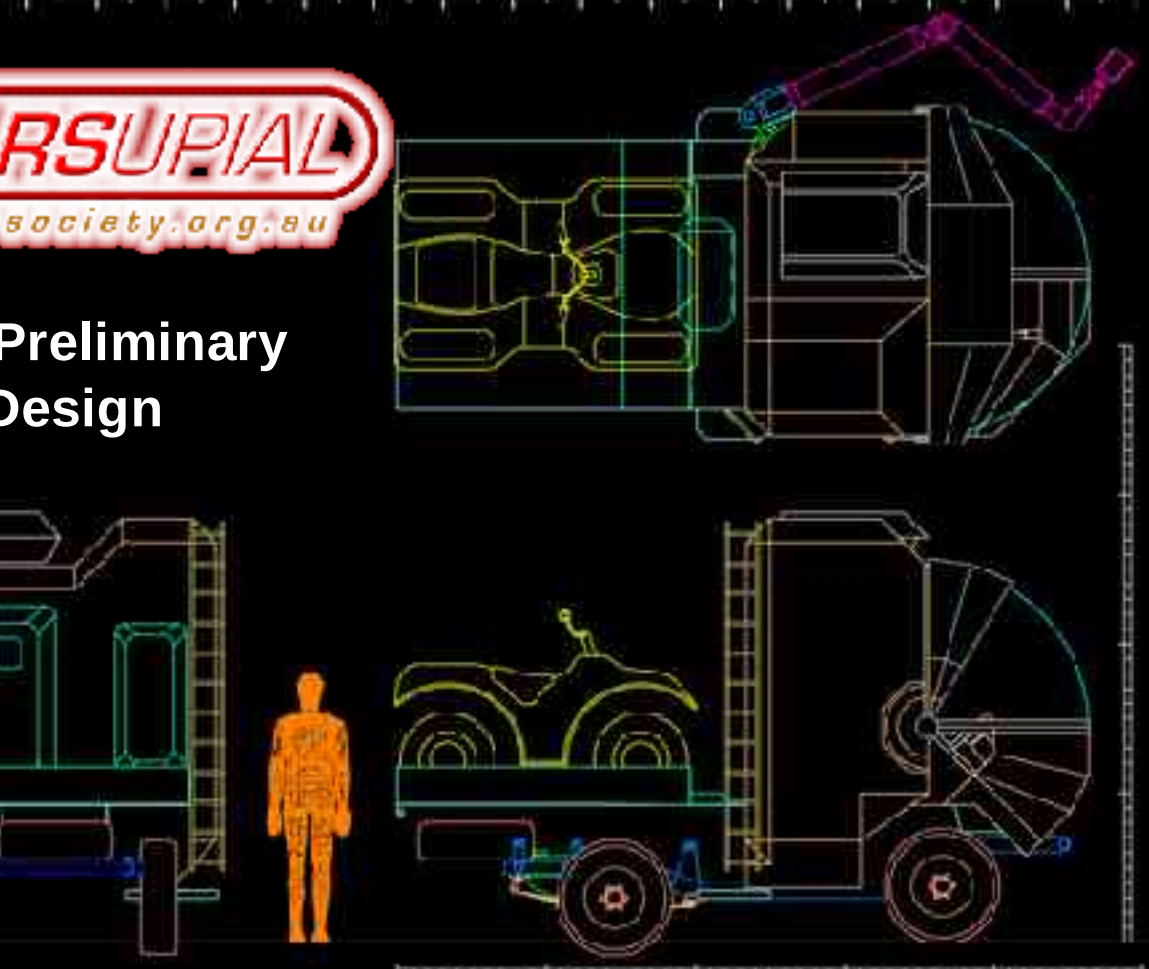
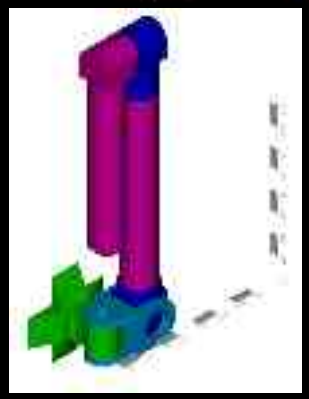
HOP Preliminary Design





100 mm units

Project Marsupial - HOP Utility

General Arrangement - Hidden Line

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Mars Society Australia Inc.

- Comments to tech@marssociety.org.au

MARSUPIAL

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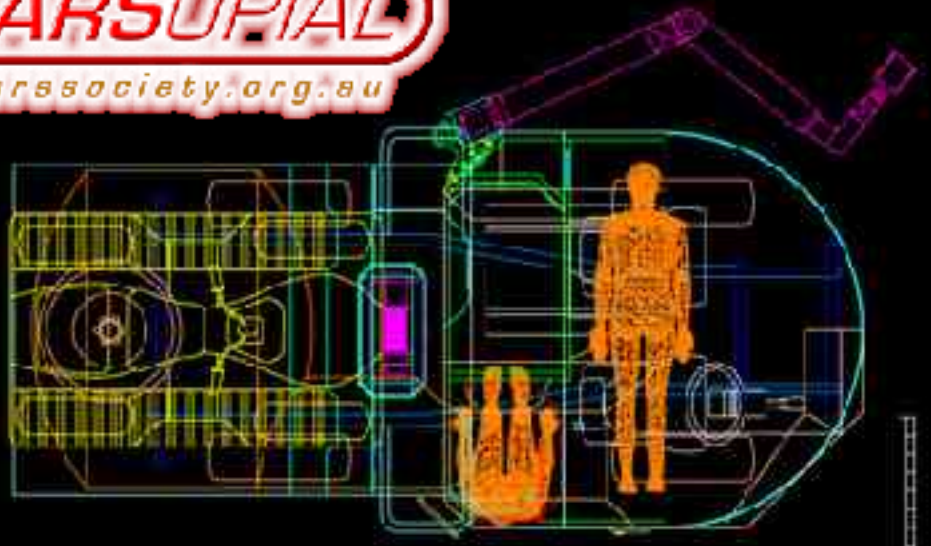

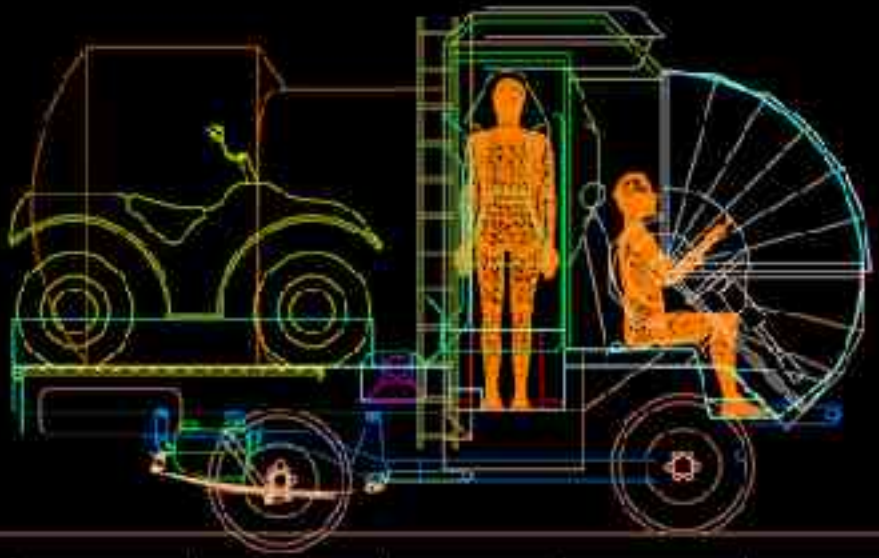

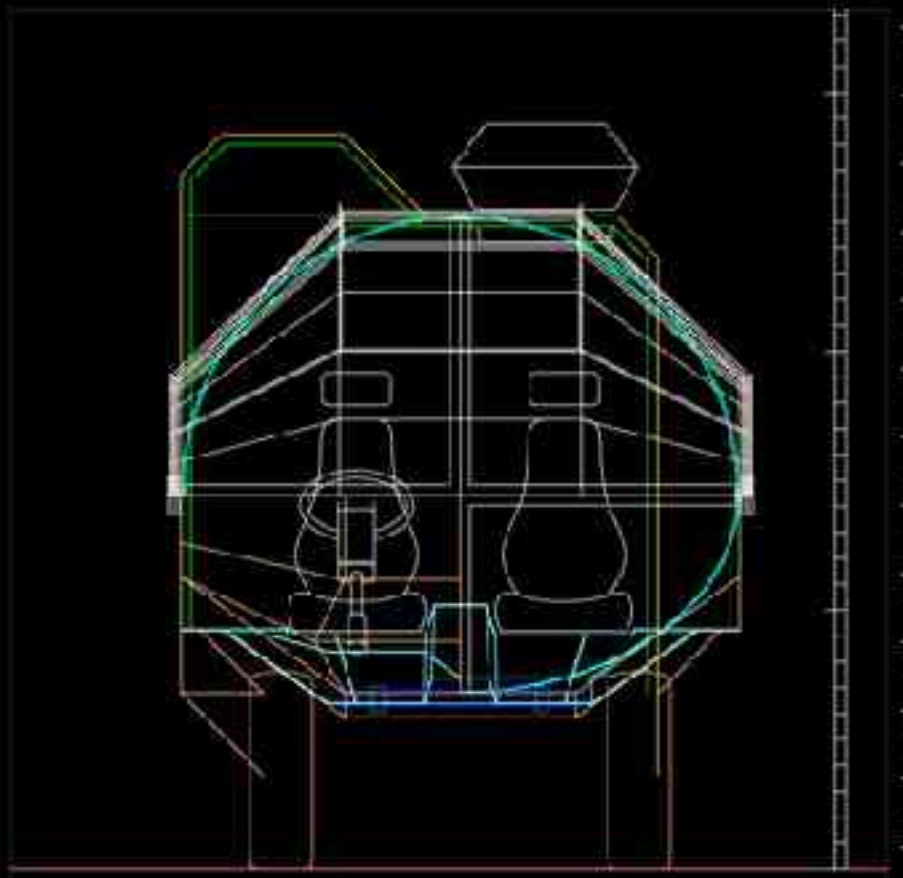

100 mm units

Project Marsupial - HUP Utility

General Arrangement

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1. Comments to tech@marssociety.org.au

All dimensions in millimetres unless specified

Project MARS-Oz

Mars Australian Research Station

Semi-mobile, multiple sites over several years

Basic unit supplemented with subsystems (i.e. solar power, bio-regeneration etc.)

Options

Possibility of obtaining US$150,000 unit from The Mars Society (US), similar to F-MARS, MDRS

Alternate plans considered for custom local design and fabrication

Goals

Centerpiece, MSA mission operations research

Available for international and local workers to undertake wide range of research activities

Platform for R&D of niche mission technologies in partnership with local organisations

Make Mars more real for more people, space-tourism potential

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Mars Direct Design

Top floor living quarters

Station exterior

Bottom floor work area, EVA airlock and storm shelter

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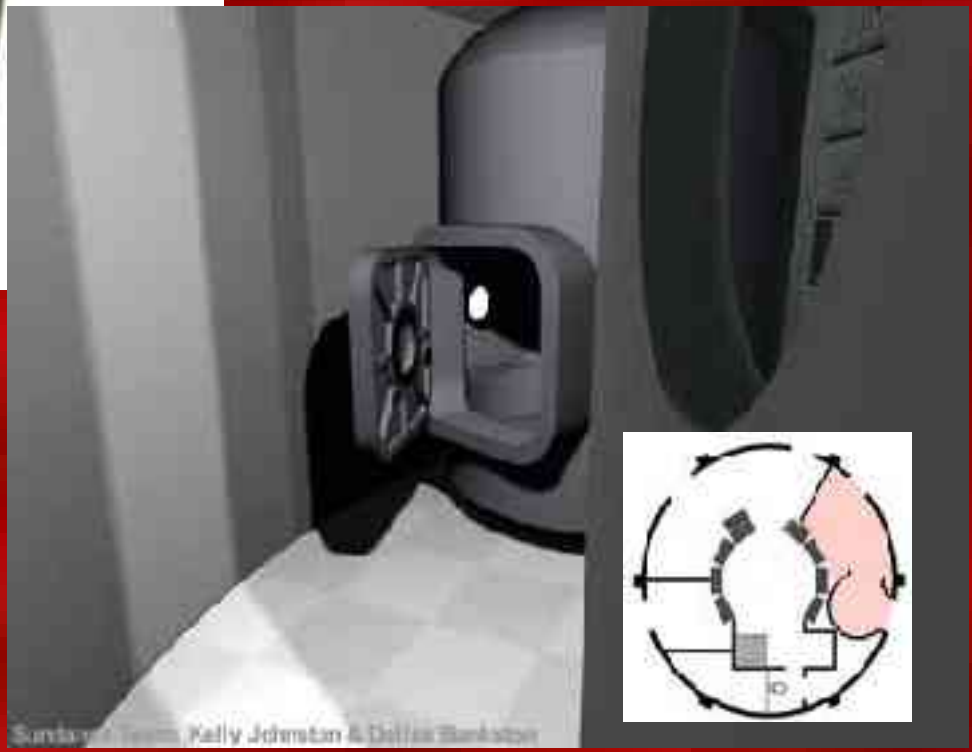
BUnCC – Basic Unified Crew Compartment

Mars Direct Design

Other design features

Single airlock



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MARS OZ

MDRS mock-up

Egress door simulating airlock

MDRS at Kennedy Space Centre

Bottom floor lab

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