

A MULTI-GOAL MARS ANALOGUE EXPEDITION (EXPEDITION TWO) TO THE ARKAROO LA REGION, AUSTRALIA

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The Mars Society Australia (MSA) selected the Arkaroola region as its prime Mars analogue area as an outcome of its Jarntimarra-1 (JNT-1) Expedition in 2001. The survey team used a careful selection process that recorded information on the site name, date visited, coordinates, ownership, access, risks, maps, geology, climate, flora/fauna, history, analogue value and references. Comparative judgments with respect to MSA's specific needs were made on a separate assessment sheet with a list of 9 scientific, 8 engineering, 7 logistic, and 8 visual criteria. The Arkaroola region was selected from a short list of six regions, and provides a range of features that can support a diverse range of analogue studies.

The area was revisited in August 2004 over a period of 26 days by a team of 26 researchers and support personnel from Australia, Canada, the United States, and France. The expedition was the second (hence "Expedition Two") carried out under the auspices of the Mars Expedition Research Council (MERC), as part of the MERC's planned series of 15 progressive research expeditions. MERC is an international group of researchers whose goal is to carry an evolving iterative series of expeditions designed to research key steps towards the goal of human Mars exploration. The previous expedition in the series was to the Mars Desert Research Station in Utah in February-March 2003, some of the research on Expedition Two was based on experience and results gained on the previous expedition.

There were six main themes to the expedition: **Field Science** – Collecting baseline geological and biological data on the field area and its Mars analogue significance. **Field Engineering** - Trials of the MarsSkin 3 analogue Mechanical Counter Pressure suit. **Exploration Operations** – evaluation of exploration methodologies, data collection and data loggers, and a site database, and selection of the site for MARS-OZ. **Human Factors** – psychological profiling of an international, multi-disciplinary team of expeditioners and research on cognitive function, leadership philosophies, and crew social interaction. **Outreach** - The expedition had extensive television, radio, newspaper and Internet coverage. **Education** – The expedition interacted with students from the International Space University's Summer School Program and undergraduates from the planetary science course at the University of Technology, Sydney.

The expedition was a major success and collected a large volume of baseline data on the area that will assist in planning future work in the area. There was significant outreach through education and the media, and considerable experiment was gained in expedition planning that will aid in future expeditions by MSA. Also the expedition was able to select the prime site for the MARS-OZ simulated base, in the eastern foothills of the Flinders Ranges.

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