



MARS SOCIETY CANADA

LA SOCIÉTÉ POUR MARS DU CANADA

P.O. Box 19015, 360-A Bloor St. West, Toronto, ON, M5S 1X0, Canada

<http://www.marsociety.ca>

Dear Potential Sponsor:

Mars may represent to you, like it does to millions of space, science and exploration enthusiasts worldwide, the next great leap for all humanity. That leap offers many possibilities. The potential for extending life from our world to the red planet. The possibility of finding living or fossil life in the sediments of Mars. The unparalleled technological developments and advances in science brought by the effort to successfully land crews to survive and thrive in a human outpost. The amount of young people it has and will continue to inspire to pursue careers in science, business and engineering by the quest to explore another world. A better understanding for the Earth's long-term climate and how to maintain it through research and ultimately experimentation with the climate of Mars. All these are strong reasons to seek the future where Mars is written in history as a place where human civilization sprouted another branch.

The Mars Society was founded to further the goal of the exploration and settlement of the Red Planet. As the president of the Mars Society of Canada, I have the opportunity to extend to you an invitation to help make history happen. As part of the international Mars Society, Canadians members have initiated our own ambitious, intensive research program. This package describes several projects we have launched and with which we need your help. Among them is our Expedition to the Mars Desert Research Station near Hanksville, Utah, where we will conduct systematic science program in Mars analog studies to understand all the issues of orchestrating a human mission on the red planet.

Like the Jacques Cousteau Society or the National Geographic Society, the Mars Society of Canada requires in-kind and cash donations in order to be successful in its projects and goals. Descriptions of all our MSC projects is followed by a backgrounder of the origins, history and direction of the Mars Society. A list of our current and past sponsors is presented, as well as a list of the numerous media organizations that have publicized the efforts of the international Mars Society and its members worldwide.

To discuss sponsorship arrangements or if you have questions, please contact me at the number below.

Rocky Persaud, President
Mars Society of Canada
416-978-0658
rocky.persaud@utoronto.ca

Sponsorship Opportunities

The Mars Society of Canada is seeking sponsorship, both as in-kind support and cash donations, for all of our exciting, innovative projects. MSC is incorporated as a not-for-profit corporation. Anyone wishing more information is encouraged to contact the MSC president at rocky.persaud@utoronto.ca.

Logos

Organisations wishing to sponsor any of the projects of the Mars Society will have their logo displayed on our website marsociety.ca, in our press releases, and on any equipment or structures where logo space is available. Publicity photographs and video will be obtained and worked into stories by professional media organizations to maximize the sponsor's positive corporate exposure.

In-kind Donations

The Mars Society of Canada welcomes all in-kind donations towards any of our projects. For full information on making in-kind donations, please contact our president. Included in this package is a wishlist of items or areas in which in-kind donations are critically needed. Hardware and software donated to our projects are used by students and faculty from universities, and professionals from industry and government agencies, whom will likely be in positions to be making purchasing decisions now or in the future. An in-kind donation is a great way to promote your product and obtain an endorsement of your company by the people the explorers of the next frontier – our sister planet Mars.

Funding

Not all equipment and parts can be donated. In many cases, we need cash to purchase items directly, to pay for travel costs for crewmembers to the Mars Desert Research Station, to pay for food, fuel, water, power and more.

You don't have to be a high-technology, aerospace, or otherwise specialized company or individual. Any organization can help us make these projects a reality. In fact, donating to our projects is a fantastic way to advertise and support new target groups. Whether you're an individual or corporation thinking about donating \$100, or \$100,000, we'd be happy to work with you. Let us know.

Mars Society of Canada Projects

MSC Expedition One – Organized by the Mars Society of Canada to conduct a 30-day Mission of Investigation in Mars surface tools and technologies, field exploration strategies, field science operations, Mars analog science (geology, biology, geophysics, geochemistry), human factors, telemedicine and crew social psychology. Expedition One will feature two Mars-analog pressurized rovers, two styles of Mars spacesuits, six astronaut field-data-loggers, over 50 "EVA"s (Extra-Vehicular Activity in astronaut lingo means going outside a space capsule), hundreds of hours of video and audio reports, concrete scientific results, massive media coverage, and crews picked from geologists, biologists, engineers, human factors specialists, and other professions from applicants all over the world.

MSC Expedition Two – Organized by the Mars Society of Canada to conduct a 90-day Mission of Discovery holistic simulation at one of the Mars Society's four Mars analog research bases. The initiation of this project is dependent on the successful completion of Expedition One. Further expeditions will be planned according to opportunity and research priorities.

Astronaut Field Data Logger – A project developed by members of the Mars Society of Canada to develop a tool for astronauts in the field to easily collect data such as GPS location, time, photographs and audio-recorded comments integrated together and mapped using GIS software.

The ARES Rover – An engineering project to build an experimental Mars Analog Pressurize Rover for learning about the human factors and operational requirements for having a long-duration surface vehicle on Mars.

The Canadian Mars Research Scholarship – A project to create a charitable organization that will dispense several research scholarships in Mars science and technology for undergraduate, graduate and post-doctoral researchers in Canada. A treasury of approximately \$5 million would create a self-sustaining program that would reap millions in spin-off benefits for Canadians, keep in Canada talented minds interested in Mars exploration, support education, and prepare the nation for participation in international robotic and human missions to Mars.

Radio Free Mars – A project for all Mars enthusiasts worldwide, Radio Free Mars is an internet audio-streaming website that transmits educational, promotional, and entertainment programming using the Shoutcast technology by Nullsoft. Included will be transmission of audio reports from the Mars Society's Mars Analog Research Stations. Advertisers are welcome to inquire about providing commercial spots. Listen at radio-free-mars.org.

Mission Support Centre – the heart of planning, logistics, and scientific, technical and operational support from all the Mars Society of Canada's projects. MSC is partnered with Seneca College at the York University campus to provide this support centre, allowing Canadians to gain the skills necessary to support a real human mission to Mars, and perform the necessary research into protocols and the human factors issues inherent in a remotely supported mission.

The Mars Society

In August of 1998, seven hundred individuals gathered at the Founding Convention of the Mars Society in Boulder, Colorado. Since then the Mars Society has grown to over 3,000 members worldwide, with thousands more subscribed to the organization's main newsletter, and hundreds of thousands of visitors to its websites every year. The Mars Society of Canada is incorporated as its own organization that participates in the international efforts of the Mars Society chapters around the globe, as well as having initiated its own research projects.

The Mars Society was founded to further the goal of the exploration and settlement of the Red Planet. This will be done by:

1. Broad public outreach to instill the vision of pioneering Mars.
2. Support of ever more aggressive government funded Mars exploration programs around the world.
3. Conducting Mars exploration on a private basis.

Why? Mars is within reach! A world with a surface area the size of the combined continents of the Earth, the Red Planet contains all the elements needed to support life. As such it is the Rosetta stone for revealing whether the phenomenon of life is something unique to the Earth, or prevalent in the universe. The exploration of Mars may also tell us whether life as we find it on Earth is the model for life elsewhere, or whether we are just a small part of a much vaster and more varied tapestry. Moreover, as the nearest planet with all the required resources for technological civilization, Mars will be the decisive trial that will determine whether humanity can expand from its globe of origin to enjoy the open frontiers and unlimited prospects available to multi-planet spacefaring species. Offering profound enlightenment to our science, inspiration and purpose to our youth, and a potentially unbounded future for our posterity, the challenge of Mars is one that we must embrace.

Indeed, with so much at stake, Mars is a test for us. It asks us if we intend to continue to be a society of pioneers, people who dare great things to open untrodden paths for the future. It puts us to the question of whether we will be people whose deeds are celebrated in newspapers, or in museums; whether we will continue to open new possibilities for our descendants, or whether we will become less than those who took on the unknown to give everything we have to us. Mars is the great challenge of our time.

In order to help develop key knowledge needed to prepare for human Mars exploration, and to inspire the public by making sensuous the vision of human exploration of Mars, the Mars Society has initiated the Mars Analog Research Station (MARS) project. A global program of Mars exploration operations research, the MARS project will include four Mars base-like habitats located in deserts in the Canadian Arctic, the American southwest, the Australian outback, and Iceland. In these Mars-like environments, we will launch a program of extensive long-duration geology and biology field exploration operations conducted in the same style and under many of the same constraints as they would on the Red Planet. By doing so, we will start the process of learning how to explore on Mars.

Mars Analog Research Stations are laboratories for learning how to live and work on another planet. Each is a prototype of a habitat that will land humans on Mars and serve as their main base for months of exploration in the harsh Martian environment. Such a habitat represents a key element in current human Mars mission planning. Each Station's centerpiece is a cylindrical habitat, "The Hab," an 8-meter diameter, two-deck structure mounted on landing struts. Peripheral external structures, some inflatable, may be appended to the Hab as well.

Each station will serve as a field base to teams of four to eight crew members: geologists, astrobiologists, engineers, mechanics, physicians and others, who live for weeks to months at a time in relative isolation in a Mars analog environment. Mars analogs can be defined as locations on Earth where some environmental conditions, geologic features, biological attributes or combinations thereof may approximate in some specific way those thought to be encountered on Mars, either at present or earlier in that planet's history. Studying such sites leads to new insights into the nature and evolution of Mars, the Earth, and life.

However, in addition to providing scientific insight into our neighboring world, such analog environments offer unprecedented opportunities to carry out Mars analog field research in a variety of key scientific and engineering disciplines that will help prepare humans for the exploration of that planet. Such research is vitally necessary. For example, it is one thing to walk around a factory test area in a new spacesuit prototype and show that a wearer can pick up a wrench - it is entirely another to subject that same suit to two months of real field work. Similarly, psychological studies of human factors issues, including isolation and habitat architecture are also only useful if the crew being studied is attempting to do real work.

Furthermore, when considering the effectiveness of a human mission to Mars as a whole, it is clear that there is an operations design problem of considerable complexity to be solved. Such a mission will involve diverse players with different capabilities, strengths and weaknesses. They will include the crew of the Mars habitat, pedestrian astronauts outside, astronauts on unpressurized but highly nimble light vehicles operating at moderate distances from the habitat, astronauts operating a great distances from the habitat using large long-endurance vehicles such as pressurized rovers, mission control on Earth, the terrestrial scientific community at large, robots, and others. Taking these different assets and making them work in symphony to achieve the maximum possible exploration effect will require developing an art of combined operations for Mars missions. The MARS project will begin the critical task of developing this art.

The Mars Society has identified three prime goals to be met by the **Mars Analog Research Station Project**:

- The Stations will serve as an effective testbed for field operations studies in preparation for human missions to Mars specifically. They will help develop and allow tests of key habitat design features, field exploration strategies, tools, technologies, and crew selection protocols, that will enable and help optimize the productive exploration of Mars by humans. In order to achieve this, each Station must be a realistic and adaptable habitat.
- The Stations will serve as useful field research facilities at selected Mars analog sites on Earth, ones that will help further our understanding of the geology, biology, and environmental conditions on the Earth and on Mars. In order to achieve this, each Station must provide safe shelter and be an effective field laboratory.

- The Stations will generate public support for sending humans to Mars. They will inform and inspire audiences around the world. As the Mars Society's flagship program, the MARS project that will serve as the foundation of a series of bold steps that will pave the way to the eventual human exploration of Mars.

Mars Analog Research Stations will be operated by Mars Society researchers and will be made available to NASA and selected scientists, engineers and other professionals from a variety of institutions worldwide to support science investigations and exploration research at Mars analog sites.

As an operational testbed, the stations will serve as a central element in support of parallel studies of the technologies, strategies, architectural design, and human factors involved in human missions to Mars. The facilities will also bring to the field compact laboratories in which in-depth data analysis can begin before scientists leave the field site and return to their home institutions.

The Stations will help develop the capabilities needed on Mars to allow productive field research during the long months of a human sojourn. The facilities will evolve through time to achieve increasing levels of realism and fidelity with the ultimate goal of supporting the actual training of Mars-bound astronauts.

The Mars Analog Research Station (MARS) project is conceived as a multi-year, phased project to enable distribution of the required budget over a period of time. In addition, phasing the project provides us the flexibility to incorporate design changes and new technologies in response to knowledge gained each field season.

The first step in this plan was accomplished in 2000 with the construction on Devon Island of the **Flashline Mars Arctic Research Station**. In the summer of 2001, Flashline was operated for two months in Mars operations simulation mode. Also, in 2001, several teams around the world began work on analog pressurized rovers that could be used either independently or in combination with Flashline or other MARS project field stations. Work on the first of these other units, the **Mars Desert Research Station** in the American southwest, also began in 2001, with a successful first MDRS field season having been accomplished from February to May 2002. In 2003, two more stations will be established; one in the basaltic and geothermally active deserts of Iceland, and the other in the Australian outback, whose ancient deserts contain fossils which date from the same period when Mars' surface ran with liquid water.

Each of these additional stations offers unique new advantages to the MARS program. Because of its ease of access, the American station is the ideal place to serve as a test bed for equipment that will later be sent to more remote and unforgiving locations. For the same reason, the American station is the best place to begin long-duration isolation experiments. With its geothermally active areas, Iceland best simulates areas on Mars where life might be found today, and thus it is the optimum location to practice Mars exobiology field work. In addition, with its European location, Iceland is well situated to act as a place from which the MARS project can act to inspire the European public with the challenge of the modern age's New World. **Euro-MARS** will be erected in Iceland in the spring of 2003, after being on display during the summer of 2002 at the Adler Planetarium in Chicago. Finally, Australia's ancient fossils are among the oldest records of life on Earth, and as such may mirror the kind of traces that life may have left on Mars. The Mars Society of Australia is currently seeking sponsors to construct **MARS-Oz** in the Lake Frome Plains east of Arkaroola. In learning how to look for such remnants within the constraints faced by Mars explorers, we will be teaching ourselves how to search for the record of the origin of life on our neighboring world.

Sponsors

There have been dozens of sponsors for various projects of the Mars Society, including the following:

Sponsors of Mars Society Canada:

- Seneca@York – Website hosting
- Miranda Innovations Inc. – Cash Donation
- Compaq – Cash Donation for ARES Rover Project
- Queen's University – Cash Donation and technical help for ARES Rover Project
- King Fifth Wheel Canada (a division of Smiths Aerospace) – for ARES Rover
- Toronto Aerospace Museum – donation of space for ARES Rover Project
- Hong Kong Polytechnic – loan of geologic sampling equipment for ARES Rover
- The University of Toronto Institute of Aerospace Studies – site of construction for ARES Rover.
- Lightstorm Entertainment – cash donation for the 3rd International Mars Society Convention stage set design.

Sponsors of the International Mars Society:

- The Discovery Channel – Cash Donation
- Flashline.com – Purchased naming rights to Flashline Mars Arctic Research Station
- The Kirsch Foundation – Cash Donation
- FINDS - The Foundation for the International Non-Governmental Development of Space
- The Musk Foundation – Cash Donation
- Pioneer Astronautics
- SpaceRef Interactive
- Backpackers Pantry – Discount on dehydrated food
- Bushnell – Telescope and Cash Donation
- Generac Power Systems – 20 kW LP Gas Generator Set
- Greenleaf – Cash Donation
- Incinolet – Incinerating toilet
- Life to Mars Foundation – Cash Donation
- Manifold – GIS Software
- Norcold – Refrigerator
- The Plumbers & Pipefitters Union – Cash Donation
- Premier Water Systems – Reverse Osmosis Unit "at cost"
- Sheetmetal Workers Union – Cash Donation
- Cybertteams – internet services

Sponsors of other Mars Society chapters:

- Starchaser Industries Ltd.

Media Coverage

The coverage of Mars Society activities and projects have been extensive in Canada and all over the world, including publications, documentaries, and daily news by the following media organizations:

- Associated Press
- BBC East Asia
- BBC Morning News
- BBC Worldwide
- Calgary Herald
- Canadian Geographic
- Canadian Press
- CBC Morning News
- CBC National News
- CBC Newsworld
- CBC Radio - Quirks and Quarks
- CBS Evening News
- CityTV
- CNN
- CTV / CTV Newsnet
- Danish National Broadcasting
- Discovery Canada
- Future Channel
- GlobalTV
- L'Actualite Montreal
- McLean's Magazine
- Ming Pao Daily News
- National Geographic
- National Public Radio
- NHK Japan
- Popular Science
- Radio Austria
- Radio-Canada
- RDF Channel 4 England
- Reuters
- Scientific American magazine
- Sing Tao Daily
- Space.com
- Space: The Imagination Station
- SpaceDaily
- Spaceref.ca
- The Denver Post
- The Discovery Channel (U.S.)
- The Financial Times
- The Globe and Mail
- The Learning Channel
- The National Post
- The New York Times
- The Phillidelphia Inquirer
- The Times (of London)
- The Toronto Star
- The Washington Post
- VIA Magazine
- Wired
- YES National Magazine for Children

Wishlist

For Expedition One:

- Cash donation – approximately \$25,000
- Food – for 12 people for 30 days.
- Fuel: Gasoline and Propane
- Air travel to Denver International Airport
- Freight shipping
- Van rental (for travel from Denver, Colorado to Hanksville, Utah)
- Computers – laptops/notebooks
- Rechargeable batteries and Battery chargers
- Digital video camcorder (DV format, 8mm or MiniDV)
- Mac laptop with iMovie software & Firewire (IEEE)
- External Shotgun mic, Wide angle lens, Tripod.
- Digital Voice Recorders
- Landsat satellite imagery
- GIS software
- Geophysical instruments
- Geological tools
- Biological lab equipment
- Geochemical instruments
- Webcams
- USGS 1:50,000 scale maps of the area around MDRS

For the Astronaut Field DataLogger Project (currently designed for the following hardware, but we would like to try other brands and designs) seeking to build at least 16 units after the prototype:

- CPU: MZ-104+ PC-104 module 2 serial, 1 parallel, 1 USB, EIDE , 4 mbBios
- Memory: 64MB SDRAM
- Video card: PC-104 VGACRT4
- Analog/Digital: Zircon-MM 8 bit analog I/O
- Sound card: Crystal-MM-HP full -duplex sound blaster audio +5, low power 0.5W
- microphones and speakers
- Display: alpha numeric through serial port LCD4041 4 lines 40 characters for field
- Battery: Sony NP-F960 lithium ion 7.2 volts 3000 maH 4 req. @ ~100
- Batteries Charger: Sony BC-V615
- Hard Disk: 40 GB EIDE
- Flexible keyboard

For the Canadian Mars Research Scholarship Program:

- In-kind legal, banking, accounting, and investment advice
- Cash donations – seeking a total of up to \$5 million.

For Radio Free Mars (on schedule to launch July 4th, 2002):

- Licenses to transmit by audio-streaming digital recordings of music and entertainment programs over the internet.

For the ARES Rover Project:

- Funds
- Raw Materials: Metal, Wood, Plastics, Composites
- Tools: Hand and power
- Construction Facilities
- Frame/Structures
- Suspension
- Steering
- Wheels/Tires
- Ladders
- Roof rack
- Land Anchor
- Storage boxes
- Insulation
- Skin
- Paint
- Power Welding
- Backup Generators
- Fuel Cells
- Batteries
- Electric Motors
- Heating/Air Conditioning
- Water Heaters
- Tanks/Pumps
- Refrigerators
- Flooring
- Doors
- Windows
- Beds / Bedding
- Hygiene Facilities - (Toilet)
- Science Equipment - (Glove box)
- Lighting
- Computers
- Communication - (Radios)
- Web Cameras
- Digital cameras
- Robotics
- Networking
- Microcontrollers
- Sensors/Actuators
- User Interfaces
- Navigation

Join the Mars Society or Make a Donation!

New Membership - The Mars Society Canada

Name: _____
(first, last)

Organization: _____

Billing Address:

(street)

(city)

(province)

(postal code)

Email: _____
(format: something@myisp.com)

Phone: _____
(format: 000-000-0000)

Billing Information

Payment: Cash Cheque Visa MasterCard

The fee is **\$35.00** for any membership prior to September 1st, 2002. After that date regular membership is **\$50.00** and student membership is **\$30.00**.

Donation: Donor \$100 Major Donor \$1000

Visionary Donor \$5000 Other \$ _____
(optional)

Name: _____
(Name as it appears on Card)

Card Number: _____ Exp. Date: _____
(format: MM/YY)

Signature: _____

Please make your cheque payable to "The Mars Society of Canada"
Mail to the address below.