

THE MARS SOCIETY

FOURTH INTERNATIONAL CONVENTION

STANFORD, CALIFORNIA
AUGUST 23 -26TH, 2001



OPEN THE NEW WORLD

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The Mars Society Inc.
Fourth International Convention
Stanford California, August 23 -26th, 2001

Wednesday, August 22

6:00 p.m. - 8:00 p.m.

Early registration and Dormitory Check-in
Governor's Corner Dormitory Area
Music of Mars (free concert)

Thursday, August 23

8:00 a.m. - 4:00 p.m.

Registration - Dinkelspiel Auditorium Lobby

Plenary Sessions A

Dinkelspiel Auditorium, Capacity 700

9:00 a.m.

Dr. Robert Zubrin - *The Next Step for The Mars Society*

10:00 a.m.

Elon Musk - to be announced

11:00 a.m.

Dr. Mike Griffin - to be announced

Track Sessions

1:00 p.m. - 6:00 p.m.

Track 1A – Robotic Exploration on Mars

Track 2A – Public Policy and Political Action

Track 3A – Martian Culture, Government, Literature and Art

Track 4A – Comp and Comm Systems/Risk Assessment

Track 5A – Can Life Exist on Mars/The Other Hab – MDRS

Dinkelspiel Auditorium, Capacity 700

Annenberg Auditorium, Capacity 350

Cubberly Auditorium, Capacity 400

Bldg 320, Room 105, Capacity 242

Bldg 420, Room 040, Capacity 297

Special Events

6:00 p.m. - 8:00 p.m.

Reception - Lagunita Courtyard

8:00 p.m. - 10:00 p.m.

Panel Discussion - *Building an Ecosystem - Healing the Earth by Means of a Martian Genesis*

Dr. Robert Zubrin, Dr. Chris McKay, Sam Burbank, Kim Stanley Robinson, Gus Frederick - Moderator:
Maggie Zubrin

Free and Open to the Public - Dinkelspiel Auditorium, Capacity 700

Thursday, August 23, 2001
 Afternoon Track Sessions

	Track 1 A Robotic Exploration on Mars	Track 2 A Public Policy and Political Action	Track 3 A A World of its Own: Martian Culture, Government, Literature and Art	Track 4 A Comp and Comm Systems ----- Risk Assessment	Track 5 A Can Life Exist on Mars? ----- The Other Hab - MDRS
1:00 p.m.	G. Frederick - Invasion of the Speleobots	Hirata, C. - Barriers to a Human Exploration Mission	Markley et al - Red Planet: Scientific and Cultural Encounters	Charania, A.C. - Networks on the Edge of Forever	Bishop, J. - The Mineralogy of Mars and the Search for Life
1:30 p.m.	Enos, H. - Gamma Ray Spectrometer	Hurtak and Egan, Legal Implications for an International Mission	Landis, G. - Mars Crossing: Technology in Science Fiction	McGowan, J.F. - Very Low Bit Rate Video	Kuznetz and Gan - On the Existence and Stability of Liquid Water
2:00 p.m.	McGown, R.D. and A.I. - Mars Meteor Survey	Fisher, G. - The Need for Government prior to going to Mars	Schreibman, A. - Visions of Martians in Popular Culture	Chapin, N. - What about the Data?	Shannon, D. - Is an Inorganic Process responsible for Formations in Mars Meteorite
2:30 p.m.	Beyer, J. - A Mission Plan for Mars	Livingston, D. - a Code of Ethics and Standards	Poss, R. – Mars in the Cinema, a Comparative Study	Milliun, J. - A Leveraged Approach to Development	Landis, G. - Halobacteria, a Candidate for Life on Mars
3:00 p.m.	NG, T.C. - Sampling Tools for Mars	Olson and Contursi - Cutting the NASA Umbilical	Mackenzie, B. - Raising the First Children on Mars	Vancil, C. - Private Backup for Deep Space Network	Zubrin, R. - Interstellar Panspermia and Life on Mars
3:30 p.m.	Sylvan, R. - Increased Cost Effectiveness using Human- Robotic Synergy	Lusignan, B. - Universities in the Age of Commercial Space	Erickson, B. - Designing the Laws of Mars	----- Sylvan, R. - Mathematical Analysis Risk of NASA and DOD	Shull, D. - Lunar and Martian Paleontology
4:00 p.m.	Brown, Boyer and Weaver - Unmanned Aerial Vehicles on Mars	Schuman, D. - To Mars through Washington	McKnight, J. - Dispute Resolution in Martian Settlements	Miles, R. - Risk-Adjusted Mission Value	----- Schubert, F. - Design and Construction of the Mars Desert Research Station
4:30 p.m.	Sims, M. - Role of Robotics in Human Settlement	Carberry, C. - Mars Society Political Workshop	Schwennege, P. - The Frontier Thesis and Ideology	Sauer and Sarper - Successful Landing Probabilities	Sklar and Legarde - Scouting the Southwest - a Team Approach
5:00 p.m.	Whitehead, J. - Mars Ascent Propulsion for Robotic Missions	Political Workshop continues	Poss, R. – Rethinking the “New World” Hypothesis	Open	Zubrin, M. and Colgan, M. - the Mars Desert Research Station at Kennedy Space Center
5:30 p.m.	Open	Political Workshop continues	Open	Open	Open

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Friday, August 24

8:00 a.m. - 4:00 p.m.

Registration - Dinkelspiel Auditorium Lobby

Plenary Sessions B

Dinkelspiel Auditorium, Capacity 700

9:00 a.m.

Albert Haldemann - *The Mars Exploration Rover Project*

10:00 a.m.

Dr. Imre Friedmann – *Fossil Traces of Life in the Martian Meteorite ALH84001*

11:00 a.m.

Kim Stanley Robinson - to be announced

Track Sessions

1:00 p.m. - 6:00 p.m.

Track 1B – FMARS Second Field Season

Track 2B – Terraforming/Spacesuit Design

Track 3B – Biomedical Issues affecting Mars Exploration

Track 4B – Mars and Education

Track 5B – Innovative Technologies for Mars Exploration

Dinkelspiel Auditorium, Capacity 700

Annenberg Auditorium, Capacity 350

Cubberly Auditorium, Capacity 400

Bldg 320, Room 105, Capacity 242

Bldg 420, Room 040, Capacity 297

Special Events

7:00 p.m. - 8:00 p.m.

Plenary Panel Presentation - *2001 Field Season at the FMARS*, a Video Journal by Sam Burbank

8:00 p.m. - 10:00 p.m. - Panel Discussion - *A Novel Approach - Mars Novelists Read from and Discuss their Works* (book signing by authors)

Greg Benford, Geoff Landis, Kim Stanley Robinson, Robert Zubrin

Dinkelspiel Auditorium, capacity 700

Friday, August 24, 2001
 Afternoon Track Sessions

	Track 1 B FMARS Second Field Season	Track 2 B Terraforming - Creating an Ecosystem on Mars ----- Spacesuit Design	Track 3 B Biomedical Issues Affecting Mars Exploration	Track 4 B Mars and Education	Track 5 B Notes from the Underground – Innovative Technologies for Mars Exploration
1:00 p.m.	Bos, B. and Smith, P. - Mars Cameras on Devon Island	Frederick, G. - Martian Light Levels	Hill, T. - Tethered Experiment for Mars Operations	Scott, D. - Lewis and Clark's Corp of Discovery as a Model for Mars Exploration	Allen, M. - The Mars Environment Observer Scout Mission
1:30 p.m.	Quinn, K. - Remote Sensing for Human Exploration	Fogg, M. - A Mathematical Model of Terraforming Mars	Swanson, G. - A Model for Minimizing Risk of Sudden Death during Exercise	Mandell, H. - Involving Non- Traditional Customers in the Grand Adventure	Stoker, C. - Robotics
2:00 p.m.	Cockell, C. and Lee, P. – Mars Analog Habitats in an Impact Crater	Warren-Rhodes, K. - Human Impact on the Environment: Applications to Mars	Cuttino, M. - Medical Emergencies on Mars	Dodds, E. - Teaching Space in a Public School Classroom	McKay, C. - AMEBA Scout Concept
2:30 p.m.	Osinski, Lee, et al Impact-induced Hydrothermal Activity	Hoffman, N. - Volatile Inventories on a Frozen "White Mars"	Stenberg, W. - Tooth Loss: an Unavoidable Occupational Health Risk?	Sari, M. - Martians in the Arctic	Zubrin, R. - TBA
3:00 p.m.	Clancey, W. - Exploration vs Problem-Solving	Palermo, E. - Dust Steaks or Water Stains, a Martian Enigma	Savin, C. - Dental Maintenance and Emergency Protocol	Kuznetz, L. - More than Mars...Much More	Lemke, L. - TBA
3:30 p.m.	Lim, D. - High Arctic Lake Sediments, a Tool for Planning for Mars Exploration	----- Anderson, D. - Design and Construction of Analog Suits for FMARS 2001	Coles, D. - The New Human Being	Frederick, G. - Welcome to Pele Base	TBA
4:00 p.m.	Cockell, C. – Martian Polar Expeditions	Barker et al - The Mars Suit External Audio System	Open	Estefan, J. et al - Mars Latin Rover: Educational Program	Open
4:30 p.m.	Jayarajah, C. - Chemical Analysis of the Haughton Crater	Gorguinpour and LeClaire - Berkeley Space Suit Design Team	Open	Salotti, M. - Marsbase, an Educational Simulation Game	Open
5:00 p.m.	Open	Mohanty, S. - Mars Extreme Gear Design	Open	Hussain, D. - The NASA Academy	Open
5:30 p.m.	Open	Open	Open	Rshaid, G. - Mars Mission Simulator	Open

The Mars Society Inc.
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Saturday, August 25

8:00 a.m. - 4:00 p.m.

Registration - Dinkelspiel Auditorium Lobby

Plenary Sessions C

Dinkelspiel Auditorium, Capacity 700

9:00 a.m.

Shuttle Commander and Astronaut Eileen Collins

9:45 a.m.

Dr. Pascal Lee - to be announced

10:45 a.m.

Panel Discussion with the *Flashline Mars Arctic Research Station Crew*

11:45 a.m. (to 12:30 p.m.)

Anna Paulson - *The Michigan Mars Society Rover Project*

Track Sessions

1:00 p.m. - 6:00 p.m.

Track 1C – Mars Analog Rover Design

Dinkelspiel Auditorium, Capacity 700

Track 2C – Advanced Concepts in Propulsion and Launch Options

Annenberg Auditorium, Capacity 350

Track 3C – Human Factors and Crew Selection

Cubberly Auditorium, Capacity 400

Track 4C – Methods of Public Outreach

Bldg 320, Room 105, Capacity 242

Track 5C – Power Production, In-Situ Utilization, and
Mars Base Concepts

Bldg 420, Room 040, Capacity 297

Special Events

9:00 a.m. - 4:00 p.m.

Space Camp Goes to Mars - a Youth Discovery Day

Free and Open to kids ages 8 - 18

Memorial Auditorium

1:00 p.m. - 5:00 p.m.

Mars Society Steering Committee Meeting

Open to Conference Attendees

Bldg 300, Room 300, Capacity 100

6:30 p.m. - 9:00 p.m.

Annual Mars Society Banquet

9:00 p.m. - 11:00 p.m.

Mars Society Open-microphone Membership Meeting

Lagunita Courtyard, seating limited to 500

Saturday, August 25, 2001
 Afternoon Track Sessions

	Track 1 C Mars Analog Rover Design	Track 2 C Advanced Concepts in Propulsion and Launch Options	Track 3 C Human Factors and Crew Selection	Track 4 C Methods of Public Outreach	Track 5 C Power Production, In-situ Utilization, and Mars Base Concepts
1:00 p.m.	Cairns, B. - The Project Marsupial HOP (Australia)	Muscatello, A. - Synthesis of Low-hydrogen Aromatic Fuels for Mars	Fiore, S. et al - Shared Mental Model Theory and Group Dynamics in Extreme Environments	Murphy, G. - From the Red Centre to the Red Planet	Frankie, B. - Dry Reforming: A Unique Flow sheet for Fuel Production
1:30 p.m.	TBA (Toronto)	Ohlandt, C. - Gasdynamic Micro Fusion Space Propulsion using Advanced Fuels	Seedhouse, E. - Early Polar Exploration and its Implications for Crew Selection	Hilton, M. - Listening to Earthlings Talk about Mars	Chamitoff, G. et al - Identification, Display and Optimization of Resources
2:00 p.m.	Fijalkowski, B., Articulated Triad Martian Roving Vehicle (Poland)	Onik, G. - The GBG Heavy Lift Orbital Launch System	Funaro, J. - Crew Composition for Mars Missions	Hidalgo, L. - Yuri's Night	Schneider and Bruckner - Water Vapor Absorption in a Zeolite Molecular Sieve
2:30 p.m.	Burns, J. - Cruising with Big Horns	Dowd, M. - Outline of an Integrated Space Program	Stabb, S. et al - What's New in Choosing Who: Team Assessment and Selection	Davis, S. - Simulating a Martian Settlement on a Computer	Poston, B. - Mars Kites for Human Habitation
3:00 p.m.	Paulson, A. - Volunteers and Corporations Cooperate	Wynter, J. - Self-Launching Payloads: a Novel Approach to LEO	Putman, J. - EEG Biofeedback and Maintaining Functional Integrity	Jacobson, B. - Bringing Mars to Children and Other Audiences	Mackenzie, B. - One Way to Mars, an Early Permanent Settlement
3:30 p.m.	Ohlandt, C. - A review of Power Source Options	Nordley, G. - Access to Mars by Rotating Tethers	Open	Dooley, C. - Lessons Learned by the Louisiana Chapter	Schubert, F. - Infrastructures for the First Base on Mars
4:00 p.m.	Strong, W. - Communications and Computer Systems	Pelizzari, M. - Non-propulsive Access to the Martian Surface	Open	Becker, F. - A Child Once Dreamt of Space	Brown, J. - Technologies to Settle Mars this Decade
4:30 p.m.	Strong, W. - Maximizing Living Space	Gaviraghi - The Pianeta Marte Affordable Mars Mission	Open	Mackenzie, B. - Mars Analog Settlement, Research and Education Center	Braham, S. - Technical Task Force Workshop
5:00 p.m.	Strong, W. - Telemetry and Remote Teleoperation	Lusignan, B. - Single STEP to Orbit, the only way to Mars	Open	Bell, L. - Chapter Projects Workshop	Technical Task Force Workshop continued
5:30 p.m.	Open	Zubrin et al - Progress in Mars Exploration Technologies	Open	Chapter Projects Workshop continued	Technical Task Force Workshop continued

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Sunday, August 26

8:00 a.m. - 11:30 a.m.

Registration - Dinkelspiel Auditorium Lobby

12:00 noon - dormitory checkout deadline

Plenary Sessions D

Dinkelspiel Auditorium, Capacity 700

9:00 a.m.

Hannes Griebel, Dr. Michael Bosch and others - *The Mars Society Balloon Mission: a Low-cost Mars Super-Pressure Balloon Mission*

10:00 a.m.

Dr. Chris McKay - to be announced

11:00 a.m.

A Panel Discussion with the *Flashline Mars Arctic Research Station Mission Support Team*

Track Sessions

1:00 p.m. - 5:00 p.m.

Track 1D – Analog Studies Relevant to Mars Exploration

Track 2D – Human Missions to Mars and Robotic Synergy

Track 3D – The Long Haul – Mobility on Mars

Track 4D – Financing Options/Mars Society Planning

Track 5D – Life Support Technology

Dinkelspiel Auditorium, Capacity 700

Annenberg Auditorium, Capacity 350

Cubberly Auditorium, Capacity 400

Bldg 320, Room 105, Capacity 242

Bldg 420, Room 040, Capacity 297

Special Events

5:00 p.m. - 6:00 p.m.

Closing Plenary - Dr. Robert Zubrin

Dinkelspiel Auditorium, Capacity 700

Sunday, August 26, 2001
 Afternoon Track Sessions

	Track 1 D Analog Studies and Their Relevance to Mars Exploration	Track 2 D Human Missions to Mars and Robotic Synergy	Track 3 D The Long Haul - Mobility on Mars	Track 4 D Financing Options for Mars Missions ----- Mars Society Planning	Track 5 D Life Support Technology
1:00 p.m.	James et al - Exercising Martian Resource Utilization Technologies at Analog Sites	Betts, B. et al - Planetary Society's Mars Outposts Proposal Panel Discussion	Jones, J. - Inflatable Tumbleweeds for Mars	McKnight, J. - Publicly and Privately Financed Polar Exploration	Crocker, J. - A Methanogen Based Bio- Regenerative Life Support System
1:30 p.m.	Strizzi et al - Sun Mars Libration Points and Mars Mission Simulations	Planetary Society Panel Discussion continued	Sims et al - Long Day's Drive: Long Range Rover Exploration of the Martian Arctic	Livingston, D. - Space Tourism after Dennis Tito: Mars and Space Tourism	Gormly, S. - Distributive Life Support Testing
2:00 p.m.	Lusignan, B. - Life on the High Deserts of Earth and Dry Valleys of Mars	Brown et al - Mars Scheme IV: TMS/Caltech Human Exploration Endeavor	Landis and Linne - Mars Hopper for Robotic Exploration	Pioneer, J. - 3 COM Mars - a Coca Cola Bottling Company	Calahan, D. - Algal Turf Scrubbers for Mars
2:30 p.m.	Burns, J. Operational Research on a Manned Mars Rover	Burleson and Mackenzie - Solo to Mars	File, D. - Martian Aircraft and Exploration Concepts	Schreibman, A. - For Adventure and Profit: the Trading Company Model	Frederick, G. Controlled Ecological Mouse Support System
3:00 p.m.	McKay, C. - Analog Studies Workshop	Mickler, S. - Junkyard Mars: Humans to Mars using the Clarke Orbit Junkyard	Joslyn, T. - Mountaineering on Mars	Zubrin, M. - Staying Aloft: Fundraising for Mars Society Projects	Worthington, E. - Detection of P- Cymene by Use of a Bioluminescent Biosensor
3:30 p.m.	Analog Studies Workshop continued	Brandenburg et al - Solaris MET: Low Cost Human Mars Mission	Feonda et al - Mars Scarab Explorer Architecture	Fisher, G. - The Mars Society Measure of Readiness	Coles, D. - Astro Farming
4:00 p.m.	Analog Studies Workshop continued	Seedhouse, E. - Fast-Track using the Theta-Pinch Thruster	Open	Vancil, C. - Mars Balloon Group	Kotliar and Prokopov - Fire Safety System based on Ignition Suppression
4:30 p.m.	Analog Studies Workshop continued	Brown & Hirata - Mars Scheme IV: Trajectory Analysis	Open	Mackenzie, B. - Mars Society Steering Committee and Member Input	Kotliar and Prokopov - Hypoxic Artificial Atmosphere for Spaceships

Vendors and Displays
 Annenberg Auditorium Foyer