

"Towards an Earth-Moon Economy - Developing Off-Planet Resources"

Moon Miners' Manifesto

& The Moon Society Journal

www.MMM-MoonMinersManifesto.com



A Desert Castle in Ancient Khorezm in the arid, sandy plains of central Uzbekistan:

A model for the (Mars dust) retaining walls hiding a modern Martian hotel? Why not be playful?

MMM's Annual Mars-Theme Issue (March is for Mars) Feature Articles:

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Coming Up. Yuri's Night and Earthday



About Moon Miners' Manifesto – “*The Moon - it's not Earth, but it's Earth's!*”

- **MMM's VISION:** “expanding the human economy through off-planet resources”; early heavy reliance on Lunar materials; early use of Mars system and asteroid resources; and permanent settlements supporting this economy.
- **MMM's MISSION:** to encourage “spin-up” entrepreneurial development of the novel technologies needed and promote the economic-environmental rationale of space and lunar settlement.
- **Moon Miners' Manifesto CLASSICS:** The non-time-sensitive articles and editorials of MMM's first twenty years plus have been re-edited, reillustrated, and republished in 23 PDF format volumes, for free downloading from this location: http://www.MoonSociety.org/publications/mmm_classics/
- **MMM THEME Issues:** 14 collections of articles according to themes: [.../publications/mmm_themes/](http://www.moonsociety.org/publications/mmm_themes/)
- **MMM Glossary:** new terms, old terms/new meanings: www.moonsociety.org/publications/m3glossary.html
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- **The National Space Society** is a grassroots pro-space member-ship organization, with 10,000 members and 50 chapters, dedicated to the creation of a spacefaring civilization.
National Space Society 1155 15th Street NW, Suite 500 Washington, DC 20005 (202) 429-1600 – www.NSS.org
- **The Moon Society** seeks to overcome the business, financial, and technological challenges to the establishment of a permanent, self-sustaining human presence on the Moon.” – Contact info p. 9.
- **NSS chapters** and **Other Societies** with a compatible focus are welcome to join the MMM family. For special chapter/group rates, write the Editor, or call (414)-342-0705.
- **Publication Deadline:** Final draft is prepared ASAP after the 20th of each month. Articles needing to be keyed in or edited are due on the 15th, Sooner is better! – **No compensation is paid.**
- **Submissions by email** to KokhMMM@aol.com – Email message body text or MS Word, Text files, and pdf file attachments or mailed CDs, DVDs, or typed hard copy [short pieces only, less than 1,000 words] to:
Moon Miners' Manifesto, c/o Peter Kokh, 1630 N. 32nd Street, Milwaukee, WI 53208-2040

In Focus Mars – Do we go to explore? – or to make it a 2nd Earth? “Governments will not take us to Mars. They will follow us there”

By Peter Kokh

That quote comes from me. It is what I believe, because that is how it has always been throughout human history. Individuals decided to settle the Americas, Australia and New Zealand. Governments tagged along, and eventually those old country governments were overthrown as settlers decided to govern themselves.

Many, if not most space enthusiasts, look to the government to take the lead. Governments follows. Governments will not take the risks, especially democratic societies and that refers to all political parties and splinter groups. Those of us who see our mission to bring life to the rest of the Solar System cannot expect a democracy of people content to stay where they are and who want governments to reserve all funding for domestic uses. We need to find ways to do so on our own, ways that seem impossible until we realize that democracies of people determined to stay where they are, will not pave the way. Unfortunately, many pro space settlement supporters cannot yet get that into their head. Consider the growing opposition to “foreign aid” of all kinds.

“Space is too expensive and there is nothing in it for us”

For past articles, Visit http://www.moonsociety.org/publications/mmm_classics/ or [mmm_themes/](http://www.moonsociety.org/publications/mmm_themes/)

Too expensive? Agencies and Governments make it so. It is their way to retain control. Even those well-intentioned politicians not enslaved to their "constituencies" lack the vision. Exploration yes, sending people? No!

The space movement itself is deeply fractured between

- **Those who would explore but not settle (Antarctica paradigm)**
- **Those who would explore to find out how and where to settle (Plymouth paradigm)**

We work together when we can find common ground, as a matter of expediency. But **those of us who would settle, must never let the explorers lead us.** Why not? In the long run, a land that is settled will be far more thoroughly explored by its own settlers than it could ever be by a few explorers who, curiosity satisfied, go back home to write their memoirs.

I have had the deepest admiration for Robert Zubrin since he first contacted me in 1988. It was I who encouraged him to run for the NSS Board. It was I who gave him a plenary session at ISDC 1998 in Milwaukee to announce the formation of the Mars Society. And I feel privileged to have been on two crews at the Mars Desert Research Station in Utah in 2005 and 2006;

That said, I have my differences, not just with Zubrin, but with many others, maybe with most others.

- 1) **We have to know much more about Mars** so that we can pick a "right place" to settle with access to all critical resources (not yet known) including underground aquifers and/or buried glaciers and areas especially rich in uncommon but vital elements and ores needed for rapid industrialization **with the goal of being able to survive any cut-off of supplies from Earth.** We need to pick a site from which expansion is most practical.
- 2) A crew in an **easily shielded outpost on Phobos** and/or Deimos could teleoperate armadas of robotic explorers all over Mars to find out what it would take humans on the surface many generations to discover. And this may include, if not the choice of our first surface settlement, but the choices of what areas are most favorable both as to resources and as to strategic positioning in a Mars keeping in mind the goal of rejuvenation of the planet. Mars Direct gives too little consideration as to choice of site, and to prior telerobotic exploration. Yes, they could do this from an unshielded station in orbit: of course, they could always import shielding up from Mars, or down from Deimos, or most expensively from Earth. The option, of course, is to arrive in a fully shielded vehicle.
- 3) We need a **tentative global plan** that means a good grasp of what resources are where, and what advantages are where. Otherwise we risk creating settlements that will soon become ghost towns and ruins.
- 4) In the long run, we need to have a **patient and effective way to modify the Martian environment to meet Mars "halfway,"** not terraforming Mars – our only experience is in "deterraforming Earth – that is, not trying to make Mars another Earth, but "rejuvenating Mars" – restoring its once more favorable environment for life.
- 5) We need an **accelerated population grown program:** women could arrive pregnant and not by the men who are coming along. Why? Because "explosive" **expansion of the gene pool** must be a top priority in establishing a New Earth on Mars that could survive a collapse of civilization on Earth and all support from Earth, should it last generations, a possibility which our untamed economic expansion is making more likely by the day.
- 6) Men and women should have **strong incentives to stay and to pioneer,** not to go back to Earth to tell those they had left behind "all about it." What we can do on Mars will be limited to person-power, and thus an explosive population policy is needed, one with rapid industrial and occupational diversification as a goal. We need to have a "critical mass" to meet the minimum needs of self-sufficiency, no matter what is happening on Earth, and we need that critical mass as soon as possible. And we need to do maintain respect for the environment.
- 7) Yes, **all this is risky. Our ancestors understood that, and did not hesitate.** We can best honor them by following in their footsteps.
- 8) **Explorer-Scouts go to get information only, to visit and leave only footprints behind.** That is not a goal that is in the character of Homo Sapiens since we first began moving "Out of Africa" thousands of generations ago. In the process we became an Intercontinental species. Now it is time to become an Interplanetary species, spreading across a new kind of ocean to new kinds of shores beyond.
- 9) **Just as the settling of the Americas brought Europe back to life** and invigorated culture there, settling new worlds – the Moon and Mars to begin with – will revitalize civilization and culture back here on our home planet.

A big Caveat:

We must not fall into the trap of "holier than thou" **planetary protectionists** who believe in the value of sterility. Life is "the" value in the universe. It is our vocation, as people of Earth to spread life to worlds where it could not, will not arise on its own, but once implanted, can thrive. But also to worlds where it may have started, but then died out or remained trap at a very primitive level. Our arrival and slow improvement of global living conditions, might allow primitive native life to resume diversification and evolution to a higher level. Humans from Earth would not mean obliteration of primitive life forms on Mars, but a new chance to realize its potential. Humans are the reproductive sex organs of planet Earth. We can spread life, and give stalled life forms anew chance to reach their potential. **"Earth is not sick, she is pregnant."** That must be our mantra.

Yes, "Mother Earth!" Not only Mother to us Earthlings, but Mother to life to come throughout the solar system, and yes, someday beyond, "to the stars!" – "Ad Astra!"

Most likely we are not alone in the universe, just rather rare in both space and time from any other self-blossoming worlds. If we fail in this vocation to spread life, we can take some comfort in our disappointment that surely out there, there will be worlds whose peoples took up this vocation to spread life beyond. **There is no value in sterility, or in preserving it. Life is the only value! It is our calling to spread it.**

The political process is such that many of the people we elect reflect the general ignorance of the public at large – the lowest common denominator. Democracy has the high risk of becoming a rabbleocracy. Keep in mind that most Politicians do things for political reasons, not because they make sense. They work for those that fund them. They distort the truth to fit that reality. We cannot leave the fate of mankind, or of its spread beyond Earth to elected politicians. And NASA? It does what politicians decide for non-germane reasons. Yes, we can be proud of NASA's achievements, but yet ashamed of its institutional cowardice.

While territorial expansion certainly had its hand in mankind expanding to six of the seven continents, the seventh only tentatively, the people who decided to leave their homeland to settle elsewhere did go for reasons of their own and could care less what governments wanted.

"Governments will not take us to Mars or anywhere else in the Solar System." PK

We may all be Martians! "Life came to Earth on a Martian Meteorite"

By Peter Kokh

http://www.marsdaily.com/reports/We_may_all_be_Martians_999.html

Florence, Italy (SPX) Sep 03, 2013: New evidence has emerged which supports the long-debated theory that life on Earth may have started on Mars. Professor Steven Benner believes that an oxidized mineral form of the element molybdenum, which may have been crucial to the origin of life, could only have been available on the surface of Mars and not on Earth. "In addition," said Professor Benner, "recent studies show that these conditions, suitable for the origin of life, may still exist on Mars." Benner is with The Westheimer Institute for Science and Technology in Gainesville, Florida, US.

"It's only when molybdenum becomes highly oxidized that it is able to influence how early life formed. This form of molybdenum couldn't have been available on Earth at the time life first began, because three billion years ago the surface of the Earth had very little oxygen, but Mars did."

The research Professor Benner presented at the Goldschmidt conference tackles two of the paradoxes which make it difficult for scientists to understand how life could have started on Earth.

- The 'tar paradox'. All living things are made of organic matter, but if you add energy such as heat or light to organic molecules and leave them to themselves, they don't create life. Instead, they turn into something more like tar, oil or asphalt. "Certain elements seem able to control the propensity of organic materials to turn into tar, particularly boron and molybdenum, so we believe that minerals containing both were fundamental to life first starting. Analysis of a Martian meteorite recently showed that there was boron on Mars; the oxidized form of molybdenum was there too."
- The second paradox is that life would have struggled to start on the early Earth because it was likely to have been totally covered by water. Not only would this have prevented sufficient concentrations of boron forming – it's currently only found in very dry places like Death Valley – but water is corrosive to RNA, which scientists believe was the first genetic molecule to appear. Although there was water on Mars, it covered much smaller areas than on early Earth.

"The evidence seems to be building that we are actually all Martians; that life started on Mars and came to Earth on a rock. It's lucky that we ended up here nevertheless, as certainly Earth has been the better of the two planets for sustaining life. If our hypothetical Martian ancestors had remained on Mars, there might not have been a story to tell." ##

Editor: The hypothesis that life started on Mars then hitched a ride here on a meteorite is not new. If it is confirmed someday beyond doubt, it will certainly start people thinking of themselves as Solarians, people of our Solar System, and that the whole System is ours to occupy over time. And the drive to send people to Mars to explore and possibly to settle, will become a "**Back to Mars**" movement.

For most people, Earth is all there is. "Earth is the World." At one time Africa was the world. The realization that we are Solarians and that it is our calling to spread our presence throughout the Solar System could be a powerful philosophical force in coming decades. PK

“Desert Castle Architectures” for Hotels in rural Mars

Imagineering by Peter Kokh

Throughout the deserts of the Middle East, Central Asia and North Africa, one finds ancient “Desert Castles” whose façades could be replicated on Mars as shielding retaining walls made of AAC (Autoclaved Aerated Concrete) protecting resort hotels made of modern pressurized module complexes.



Once on Mars, we might as well have fun!

(We upped the “sepia” tones to render more “Mars-like” skies)

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MMM Platform for Mars, V.3

MMM sees the following developments as part of “the critical path” to a successful opening of a permanent human frontier beachhead on Mars.

- **Mars Permafrost Explorer** — The opportunity to pre-test such a probe in Earth orbit to improve knowledge of terrestrial tundra resources, makes this an easy sell. We have already found some buried glaciers. We need to map such resources planet-wide to get an idea of how much of Mars can be settled.
- **An Ice Cap Lander** – to land on the residual ice sheet after the seasonal frozen CO₂ ice layer has sublimated?
- **Ground Truth Permafrost Tappers** – Orbital surveys calibrated by scattered on site drill cores. Only by actual on site taps can we tell either the percentage of water content or its freshness or salinity. Making a water/ice map of Mars is priority # one if we are going to pick settlement sites rationally. is impossible. Water is necessary resource number one.
- **Mars Lavatube Explorer Orbiter** – We can pre-test a deep-penetrating radar probe in Earth orbit to improve our knowledge of lava flow terrain, and bthe start of a Mars global map showing lavatube country, outside of the Tharsis plateau and the great shield volcanoes.
- **Mars Lavatube Entrance Robotlc Probes** – The recent development of JPL’s “Axel” rover that can winch itself down a crater rim, makes it possible to explore Mars lavatube entrances
- **Geochemical orbital mapper** — reflight of Moon Mineralogy Mapper (Chandrayaan-1) over Mars. We have some general ideas about the boundaries of geological provinces. We need more details.
- **Geochemical ground truth probes** — to determine abundance, methods of production, etc.of elements and/or minerals that will be the basis of a materials industry and thus of manufacturing.
- **Mars topographic map** with accurate elevations: from which basin and watershed divides can be traced along with their overflow dam points. From this potential primitive and immature drettainage patterns can be sketched, avoiding siting outposts in future flood plains. We need contour lines much better than a hundred meters apart – close enough to show ocean shores if ever there were oceans and close enough to map future rivers and lakes in a wetter Mars so that we do not put settlements doomed to be flooded out some time in the future.
- **Antarctic Mars Training Camp Base** in one of the cold “Dry Valleys” like **Wright** or **Taylor**. A facility for testing survival gear and methods developed for the Mars frontier. This area has a more Mars-like climate and seasonal temperature range than Devon Island.
- **Mars Analog Program II** – MDRS II on site where government restrictions allow the following
 - ✓ One-floor Modular Marsbase that can grow – or a horizontal 2 floor cylinder set in a trench, then covered with trenched material “shielding” for real thermal management and “radiation protection” as well as extended seasons – through the winter and through the hot summers
 - ✓ Modular biosphere contributions in each module: primary treatment of toilet wastes, living “green” walls and room dividers to maintain fresh air and contribute to food needs
 - ✓ Experiments: using Mars regolith simulants to pre-develop Mars-appropriate building and manufacturing materials (first we need more accurate analysis of Martian soils without retrn samples
 - ✓ Compare productivity of teleoperation with Mars-Deimos equivalent time delay (0.2 seconds) vs. Earth-Mars equivalent time delay (6-40 minutes)
 - ✓ Experiment to find the smallest crew that has all needed frontier talents with redundancy
 - ✓ “Redhousing” Experiments Breeding “Mars Hardy” plants in compressed (0.1 atm) Mars Air (CO₂).
 - ✓ Predevelop a Mars atmosphere chemical feedstocks industry” with simple methods to mass produce as many useful compounds as possible our of Mars’ air (carbon, oxygen, hydrogen, nitrogen).
- **Mars IN Situ Research**
 - ✓ Detailed plans for Mars atmosphere derived Startup Industries and products: **Carbon, Oxygen, Nitrogen** along with soil (regolith) minerals that are commonplace anywhere. Stockpile before crew arrival
 - ✓ basalt based technologies
 - ✓ automated equipment to make and stockpile building products from local regolith: bricks, blocks, slabs, sand bags, etc.
 - ✓ test 3-D printing to build up an inventory of parts and replacement parts before the first crew arrives.

PLEASE SEND US your suggestions for probes that should be sent to Mars to help make a rational plan for human settlement. to: mmm@moonsociety.org – subject “Platform for Mars”

A Partial list of Logical Lunar Analog Research Directions (some will apply to Mars Analog programs as well)

Peter Kokh 10/31/2009 – http://www.moonsociety.org/moonbasesim/proposals/analog_research_program.html

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CHRONOLOGICAL INDEX to MMM THEMES: MARS

http://www.moonsociety.org/publications/mmm_themes/mmm_t Mars.pdf

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- MMM #113; Marsandback, No! – Marstostay, Yes!; MMM Mars Policy Statement; Yolk Sac Logistics; Pantry Stocking on Mars: "More to Mars;" 12 Dwarfs/Pygmies need as much consumables as 4 "full size" humans and can get much more done.
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Yuri's Night & Earthday make a Pair – Some Thoughts

By Peter Kokh

What do these two special anniversaries have in common? They both focus our attention on our home world in a way that makes us reflect on how we are treating our home planet. Yuri Gagarin's first flight into space and first orbit of Earth drew our attention to the unique specialness of our tiny home world – a world we all share in a way that bonds all of us together irregardless of manmade boundaries.



A few years later when the **Apollo 8 astronauts** circled the Moon and took photos of Earth, the whole planet, hanging there in the blackness of space, it made us all aware that despite our ethnic, political, linguistic, economic, and other differences, we must all share a special world, one that our new found powers to alter our environment, on purpose or through disregard, suddenly make us aware of our custodial burden, or is it a privilege, to hand over our priceless ecosphere to our children as we would want our elders to do if roles were reversed.

Yuri's daring journey, short as it was, made us aware of **how small our world is**, as did photo of Earth from far away. Nineteen years after Yuri's trip, in April 1970, the world's first Earthday was celebrated. Some of us are old enough to remember that. Those of us who realize how fragile our world is, and who care not just about the health of the economy we hand over to our children but as much about the environmental health of the biosphere we hand over to them, reflect on Earthday, about small victories, areas of deterioration, and more. If the Republicans care only about the economy we hand over to the next generation and Democrats only about the state of the environment we pass on, then both should hang their heads in shame. **Our children deserve not just a healthy economy, not just a healthy biosphere, but both.** To those who only look at one or the other, we say **"grow up!"**

You will see at the bottom of the front page and at the start of this article, that I have tried to express in graphics a more holistic approach to Earthday. I have a book about mythologies that labels them as patriarchal or matriarchal. Hey, we need both! Yuri's Night and the Apollo missions out to the Moon and back, made us aware that our "local environment" includes the Moon, and beyond that, the rest of the Solar System.

Our Econosphere has already expanded out to Geosynchronous Orbit (seven times as wide as Earth) where orbit-to-home TV and other kinds of satellite services have created an economic province of its own, generating **over \$300 billion dollars of activity annually**, and that is rising. Resources and products from the Moon can be shipped down the gravity well to Geosynchronous orbit for a small fraction of the fuel cost of shipping them up the steep gravity well from Earth' surface. This fact will allow us to use materials from the Moon to construct power beaming relays and solar power satellites in GEO as well as huge platforms to collocate many satellites in each of the 180 available GEO slots, 2 degrees apart, providing power, robotic repair services and more.

Thus the Econosphere will expand beyond GEO to include the Moon, and then asteroidal resources. Then Space, what lies beyond our atmosphere, will become part of our "greater environment." We might dub this marriage **"Mother Earth and Father Sky."** Indeed, some of our pre-modern cultures and religions reflected this inseparable dynamic between maternal Earth goddesses and paternal Sky gods.

Lets put these two remembrances together. It is not in the interest of **Mother Earth** that we overlook the services of **Father Sky**. We need to engage maternal environmentalists with those of us who are paternal environmentalists and show how together we can do much more to preserve our precious **"yinyang"** homeworld.

For instance, I regularly point out that settlers on the Moon or beyond will live in small closed biospheres, living "downwind and downstream" of themselves. They cannot allow their tiny biospheres to become polluted less they have to abandon them. They will learn how to live right, and those lessons can be put into effect "down here" to help stabilize and clean up our precious planet. Yes, in theory us Earthlubbers could learn all these tricks by ourselves. But in reality, we won't, because the dire consequences of not doing so will harm our descendants but not ourselves, so we will put it off, and off, and off. It does us, and our children and grandchildren no good to believe that if we hand over to them a healthy economy that will be enough. Nor does it do us, and our children and grandchildren any good to find environmental remedies that leave the economy in a shambles. Let's all cut the senseless rhetoric, be honest for once, and work to hand down a Greater Earth with both a healthy economy and a healthy biosphere expanding **starwards!** **"Of stardust thou art, and to the Stars thou shalt return."** PK

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From Africa
to the Moon,
the Human
Epic, told in
footprints,
Continues
to the Stars!



Our Goal is
Communities
on the Moon
involving
large scale
industrializa-
tion and
private
enterprise.

The Moon Society Journal Section (pages 9–12)

About the Moon Society

Objectives of the Moon Society include, but are not limited to:

- **Creation** of a spacefaring civilization, which will establish communities on the Moon involving large-scale industrialization and private enterprise.
- **Promotion** of interest in the exploration, research, development, and habitation of the Moon, through the media of conferences, the press, library and museum exhibits, and other literary and educational means
- **Support** by funding or otherwise, of scholarships, libraries, museums and other means of encouraging the study of the Moon and related technologies
- **Stimulation** of the advancement and development of applications of space and related technologies and encouragement their entrepreneurial development
- **Bringing together** persons from government, industry, educational institutions, the press, and other walks of life for the exchange of information about the Moon
- **Promoting** collaboration between various societies and groups interested in developing and utilizing the Moon.
- **Informing** the public on matters related to the Moon
- **Provision** of suitable recognition and honor to individuals and organizations that have contributed to the advancement of the exploration, research, development, and habitation of the Moon, as well as scientific and technological developments related thereto.

Our Vision says it all – “Who We Are and What We Do” – www.moonsociety.org/spreadtheword/whowhat.html

We envision a future in which the free enterprise human economy has expanded to include settlements on the Moon and elsewhere, contributing products and services that will foster a better life for all humanity on Earth and beyond, inspiring our youth, and fostering hope in an open-ended positive future for humankind.

Moon Society Mission: to inspire and involve people everywhere, from all walks of life, to create an expanded Earth–Moon economy that contributes solutions to the major problems that challenge our home world.

Moon Society Strategy: We seek to address these goals through education, outreach to young people and to people in general, competitions & contests, workshops, ground level research and technology experiments, private entrepreneurial ventures, moonbase simulation exercises, tourist centers, and other means.

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Interested in having input? Any member may ask to join the Leadership Committee and attend our Management Committee meetings held twice monthly. You may even express opinions. Decisions are often made by consensus, so this input has value. Write president@moonsociety.org

From Moon Society President Ken Murphy

I recently had the privilege of serving for the first time as Physics & Astronomy judge at both the Dallas and Fort Worth Regional Science & Engineering Fairs. This is something I've been doing in Dallas for years, and only recently have begun judging, on the west side of the metroplex. The quality of work that can be produced at these events is astounding, but the quality can also reflect underlying maladies in our educational system that can be addressed by space advocates.

What I'm suggesting is that Moon Society chapters and members consider arranging a special space scholarship at their local science fairs. Here in Dallas, NSS of North Texas and Dallas Mars Society gave almost \$500 this year, combined, in scholarship money to students who had produced space projects. Winners included a team of students looking at construction of facilities on Mars using materials on location [in situ], and a team looking at the effects on flight of different fin sizes and shapes on rockets.

This is a great way for the membership of The Moon Society to encourage interest in lunar development in your communities ñ by providing scholarships for those projects. Your president is a firm believer in incentives, and cash is one of the best incentivizers around. So much so that I'm proposing that The Moon Society provide matching funds to chapters and members who raise money for scholarships locally.

For past articles, Visit http://www.moonsociety.org/publications/mmm_classics/ or [mmm_themes/](http://www.moonsociety.org/publications/mmm_themes/)

The Moon Society – Lunar Frontier Settlement – www.moonsociety.org p.2

The Moon Society has looked at providing scholarships to college students for lunar studies, and has developed an application process to do so. However, the policy has foundered on the question of paying for promises versus paying for results. It's not in our best interest to fund projects that don't materialize. If we can work out an appropriate mechanism then I believe this is a project we should support.

I'm also looking at revisiting the idea of the Lunar Laboratory projects as an outreach tool. These are short science projects focused on particular aspects of lunar studies, which we'll sell online like the theme issues of MMM. There are lots of things to do to advance the cause of lunar exploration and development. Let's get moving!

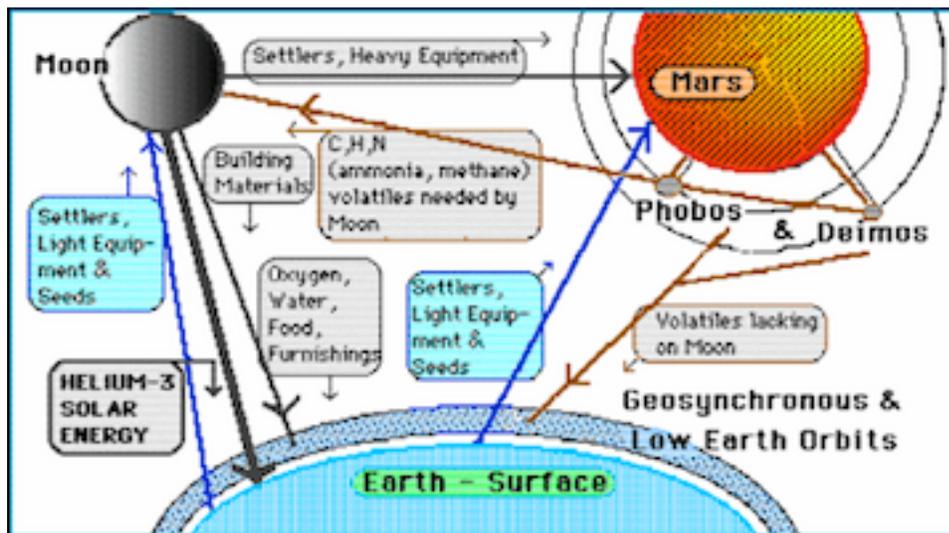
Resources for Moon Society Chapter "Moon/Mars" Advocacy and Projects

Existing Publications developed for Moon Society exhibit at Mars Society Convention 2004, Chicago:

- **Mars is in Our Field of View** (tri-fold brochure)
<http://www.moonsociety.org/spreadtheword/pdf/mars.pdf>
- **Lunar & Mars Frontiers will have Much in Common:** (one-side flyer)
http://www.moonsociety.org/reports/mars_conv2004/Moon_Mars_Similar.pdf
- **Moon Society–Mars Society Collaboration & Joint Project Areas:** (one-side flyer)
http://www.moonsociety.org/reports/mars_conv2004/MS_TMS_Collaboration.pdf

Additional Resources:

- **Collected MMM "Mars articles" through MMM #263**
http://www.moonsociety.org/publications/mmm_themes/mmm_t_Mars.pdf <http://www.moonsociety.org/mars/>
- **"The Triway to Space"** <http://www.moonsociety.org/spreadtheword/triway.pdf>
- **The Triway to Space Declaration** <http://www.thespacereview.com/article/2078/1>
- **Earth–Moon–Mars Trade Routes**



Note: Mars has nothing to export to Earth that cannot be sent less expensively from the Moon, But Mars can produce exports needed on the Moon at less expense than sourcing them from Earth. such as liquid methane and liquid ammonia (possible products from Phobos and/or Deimos – if – they are found to be captured carbonaceous chondrite asteroids (now in doubt.) This means that it will be more difficult to settle and develop Mars without lunar settlements as a trade partner..It is in the interest of Mars to have a strong Earth–Moon Economy to tie into.

- Our ultimate goal is to spread human settlements throughout the Solar System – and beyond..
- Each world we settle will bring out new possibilities and develop new potential in humanity
- We should work with other space–focused groups including the pro–Mars and pro–Asteroid communities. We are more likely to get political support if “we have our act together” and show that the various support groups complement one another and fit together in one space–ward movement. We are also more likely to get broader public support if we have a unified vision.
- That also means working with “Earth Firsters,” the environmental movement. Expansion into space will develop better ways to keep Earth green and healthy. We will learn more with each new world we bring into the human realm. ##

For past articles, Visit http://www.moonsociety.org/publications/mmm_classics/ or http://www.moonsociety.org/mmm_themes/

Bring fresh life to your chapter though “Meet-up”

By Peter Kokh

President Milwaukee Lunar Reclamation Society (NSS/TMS Joint Chapter)

This year, **Yuri’s Night** falls on Saturday, **April 12th**, conveniently, the same day the Milwaukee Lunar Reclamation Society will have its regular monthly meeting.

We have not succeeded (despite trying) in holding a public outreach event in some years. We are looking on Yuri’s Night as an opportunity. Our meetings are 1–4 pm in one of the Mayfair Mall Community Rooms (usually G110, sometimes G150) but coincidentally, by sheer happenstance, we learned that we could reserve a room 1–9 pm. G110 had something scheduled for that date 6–9 pm, so we arranged to use G150 for the whole period.

Of course, we have listed our party on the Yuri’s Night page, which could bring us some new people.

But we decided to get more aggressive and establish a **Milwaukee Space Exploration Meet-up** (www.meetup.com/Milwaukee-Space-Exploration-Meetup) and within a few days had hooked half a dozen more.

On a roll, we also put up a new one page site: **Space Milwaukee**: www.Space-Milwaukee.com – on this site we list and link to our chapter, the SEDS chapter at UW–Milwaukee, all the local astronomy clubs (4), the various planetariums, NASA research at UWM and Marquette University, local amateur rocket clubs, etc. We are hoping that through this page, more “kindred spirits” in the Milwaukee area will learn about each other and start collaborating.



We were an extremely active chapter from our founding in the fall of 1986 through our ISDC in Milwaukee in 1998. It has been all downhill ever since. We are gambling that these initiatives will bring new life (and new members) to our chapter. We will give a report in the May MMM on the results of our Yuri’s Night event, our Meet-up, and our Space–Milwaukee.com page.

Stay tuned. Meanwhile, check out Meet-up in your area

And why not check out www.Space-Milwaukee.com and find all the space and astronomy related organizations and activities in your area, and put up a similar site. It’s free and convenient if your chapter website is hosted by www.moonsociety.org/chapters/ – all you have to do is secure a domain name such as www.space-yourtown.com that calls up your page (use URL gripper) and see what happens. You can get a domain name without extras for from \$10–15 per year, or less! If you’ve never done something like this, the people at Office Max or Office Depot will be glad to help. (It’s easy)

This is not the 1990s or 2000s anymore! There are **new tools** out there that we can use. With these tools, we stand to be much more successful in our outreach activities. With Meet-up etc. all you need is an occasion and a meeting space. Here are some outreach opportunities:

- April 12, 2014: Yuri’s Night – anniversary of Yuri Gagarin’s first human flight to orbit Earth
- April 20, 2014: **Astronomy Day** (local astronomy club plans?)
- April 26, 2014: **Earth Day** (“Space: what’s in it for Earth?”)
- July 20, 2014: Anniversary of **Apollo 11 first Moon Landing**
- September 6, 2014: **International Observe the Moon Night**
- October 4–10, 2014: **Space Week**
- December 15, 2014> “End of the Beginning” – Anniversary of departure of last Apollo crew (#17) from the Moon

It may be too late for the April opportunities, but other occasions remain. Pick and choose!

Facebook and/or Twitter?

Many of us are on **Facebook and/or Twitter** – Try and organize an event on either! Its a lost cause! These sites are not ideal for organizing anything, IMHO!

Meet-up is a place to find people with shared deep special interests.

(It’s about time that the Moon Society Chapters–Coordinator {me} got off his duff and learn some new tricks!)

PK


 March Chapters & Outposts 2014
OUTPOSTS (2 or more local members in search of more)

Bay Area Moon Society, CA Outpost – South San Francisco Bay – <http://www.moonsociety.org/chapters/bams/>
 Contact: Henry Cates hcate2@pacbell.net Meeting the 1st Tuesday of the Month at Henry's home

Moon Society Nashville Outpost – Contact: Chuck Schlemm – cschlemm@comcast.net

MOON SOCIETY CHAPTERS

Moon Society St. Louis Chapter – <http://www.moonsociety.org/chapters/stlouis/>

Contact: Robert Perry surfer_bob@charter.net – Meetings 2nd Wed monthly at Buder Branch Library, 4401 S. Hampton, in the basement conference room – Next meetings – **APR 9 – MAY 14 – JUN 11**

February 6th Meeting Report: Paul Baldwin, Christine Nobbe, Jim Merriman, and Bob Perry of the St. Louis Chapter of the Moon Society and the St. Louis Space Frontier, a chapter of the National Space Society, jointly participated in "Science Night" at Selvidge Middle School with 3 tables with displays about space and the future. There were many aerospace businesses in addition to clubs like ours for the students and their families to browse.

Our two chapters held a joint meeting at the Bruder Branch Library on February 12th with Stephen Block, Dave Dietzler, Bob Perry, Rufus Anderson, Barry Branham, Philip Newell, Jim Merriman, and Paul Baldwin attending.

Bob used his laptop and Rufus's projector to give a Power Point presentation on comets in general and comet P45/Honda-Mrkos-Pajdusakova in particular. Sorting the 163 near Earth comets by inclination, aphelion, and perihelion, P45 is a good candidate for capture and utilization by a future space faring civilization. The volatiles, especially water, carbon dioxide, and ammonia will be quite valuable. The comet could be turned into S.S.S. DaKosKova, a Steam Space Ship. Four long, well anchored columns in the pattern of a tetrahedron would support a sealed skin around the ship. Pivoting jets would be at the tops of the columns to effect despin and orbit modification using comet materials for the exhaust. After relocation to a favorable orbit it might become the center of solar system commerce. Of Course, this will be a decades or even a century long project. The future will be interesting. ##

Greater Fort Worth Space Chapter c/o Patricia Ferguson tricia3718@gmail.com

JOINT MOON SOCIETY–NSS CHAPTERS

Phoenix NSS–TMS Joint Chapter – <http://nsspheonix.wordpress.com/> – c/o Mike Mackowski.

Meeting 3rd Saturdays monthly at HSGP Community Center, Mesa, 627 W. Rio Salado Parkway.

February 15 Meeting Report: There were about 15 people in attendance, including several new members. Some of the new folks came via our Meet-Up announcements, others came via outreach contacts from SEDS or AIAA. The speaker, Dr. Dave Williams of ASU, gave an overview of robotic exploration of the solar system, focusing on rovers on the Moon and Mars, with some speculation on where the next rovers will explore.

We discussed future events, particularly Yuri's Night. There will be no Space Access Conference) this year, and an attempt to invite the local SEDS chapter ran afoul of their academic schedule that makes it difficult for many SEDS members to participate on April 12. A good meeting with some new people and new ideas.

Tucson L5 Space Society – <http://www.tucsonspacesociety.org/> Now serving Moon Society Members

Contact: Al Anzaldua – Meets monthly, every 2nd Saturday, 6:30 PM **MAR 8, APR 12, MAY 10, JUN 14**

Clear Lake NSS/Moon Society Chapter (Houston) – <http://www.moonsociety.org/chapters/houston/>

Contact: Eric Bowen eric@streamlinerschedules.com – Meeting 7 pm in the conference room of the Bay Area Community Center at Clear Lake Park – Even # months:

Milwaukee Lunar Reclamation Society (NSS/Moon Society) – (Publishers of Moon Miners' Manifesto)

<http://www.Milwaukee-Lunar-Reclamation.org> [new] Contact: Peter Kokh kokhmmm@aol.com

Mayfair Mall lower level Garden Suites East Room G110 – 2nd Saturdays 1–4 **APR 12 – MAY 10 – JUN 14**

At our March 8 meeting we will plan our **Yuri's Night Party for April 12th** (room G150) 1–8 pm and hope to meet some new people from our new www.meetup.com/Milwaukee-Space-Exploration-Meetup site and our new www.Space-Milwaukee.com site – NEWS:

<https://news.marquette.edu/news-releases/nasa-selects-marquette-satellite-to-launch-into-space/>

Perhaps we can get an involved student to make a presentation on "Golden Eagle One" at our Yuri's Night event.

Moon Society members who live in other areas are encouraged to check to see if there is a National Space Society chapter nearby. If two or more Moon Society members join an NSS Chapter, that Chapter could be listed as a joint chapter (if the so wish). Here is where to check: http://chapters.nss.org/a/lists/#US_Chapters

For past articles, Visit http://www.moonsociety.org/publications/mmm_classics/ or [mmm_themes/](http://www.moonsociety.org/publications/mmm_themes/)

GREAT BROWSTNG LNKS

SPACE STATIONS

<http://www.space.com/24651-cubesats-launch-space-station-planet-labs.html>

www.nasa.gov/press/2014/february/nasa-announces-fifth-round-of-cubesat-space-mission-candidates/

www.orlandosentinel.com/news/politics/os-space-station-extension-20140107_0,3847257.story

COMMERCIAL SPACE

www.nasaspaceflight.com/2014/02/affordable-habitats-more-buck-rogers-less-money-bigelow/

ASTRONAUTS + SPACE TECHNOLOGY

<http://www.dnaindia.com/india/report-gslv-launched-successfully-increasing-india-s-clout-in-outer-space-technology-1945988>

EARTH

<http://www.space.com/24770-urthecast-space-station-cameras-image-test.html>

MOON

http://www.space-travel.com/reports/NASA_Extends_Moon_Exploring_Satellite_Mission_999.html

http://www.space-travel.com/reports/Is_Yutu_Stuck_999.html

<http://www.space.com/24789-moon-meteorite-impact-brightest-lunar-explosion.html>

http://www.space-travel.com/reports/NASA_bets_on_private_companies_to_exploit_moons_resources_999.html

<http://www.space.com/24736-google-lunar-xprize-bonus-prize.html>

http://www.space-travel.com/reports/Lunar_ownership_laws_a_future_necessity_999.html

MARS

<http://www.space.com/24660-nasa-france-mars-lander-2016.html>

<http://www.space.com/24575-fresh-mars-crater-nasa-spacecraft.html>

ASTEROIDS

http://www.nss.org/legislative/positions/NSS_Position_Paper_Planetary_Defense_2014.pdf

<http://www.space.com/24737-nasa-asteroid-capture-mission-targets.html>

<http://www.space.com/24779-sample-return-spacecraft-penetrator-tether.html>

OTHER PLANETS + THEIR MOONS + THE SUN

<http://www.space.com/24779-sample-return-spacecraft-penetrator-tether.html>

http://www.spacedaily.com/reports/A_global_map_of_Jupiters_biggest_moon_999.html

http://www.huffingtonpost.com/2014/02/18/solar-orbiter-prehistoric-paint_n_4805815.html

<http://www.spaceweather.com>

www.space.com/24827-kepler-space-telescope-exoplanet-bonanza-explained-infographic.html

GREAT VIDEO LNKS

<http://www.space.com/24814-huge-peanut-asteroid-2006-dp14-nasa-video.html>

<http://www.geekosystem.com/supercritical-water/> Includes VIDEO

<http://www.space.com/24254-cygnus-spacecraft-captured-by-space-station-video.html>

www.space.com/24396-spacecraft-hull-crawling-robots-are-these-their-ancestors-video.html

www.space.com/24253-spaceshiptwo-s-3rd-powered-flight-soars-to-new-heights-video.html

<http://www.space.com/24786-bam-38-000-mph-space-rock-slams-into-moon-video.html>

<http://www.space.com/24567-5-second-asteroid-touch-enough-for-sample-return-video.html>

<http://www.space.com/24779-sample-return-spacecraft-penetrator-tether.html>

<http://www.space.com/24830-715-new-worlds-how-they-were-found-video.html>

www.space.com/24859-no-limits-canada-s-astronauts-climb-test-fly-and-explore-video.html

For past articles, Visit http://www.moonsociety.org/publications/mmm_classics/ or [mmm_themes/](http://www.mmm_themes/)



Marshall Mike Moondust and the Sinister Selenian Subterfuge

[MMM Fiction by George von Mond]

MISSED PREVIOUS INSTALLMENTS? The whole series is now online, Chapters I–XIV (1–14):

<http://www.moonsociety.org/publications/fiction/MMMSSS.pdf>

Chapter XV

Marshall Mike Moondust stood with the rest of the Tychoville Central Lunar Guard in one of the city's community centres, the only space large enough to serve as an ad hoc War Room. A holographic projector had been hastily moved in, and everyone was looking at a 3D map of the terrain surrounding the city. The equipment was a direct descendant of the holographic air traffic control systems that had revolutionized air transport in the first half of the 21st century by liberating the controllers from 2D screens.

Tychoville itself was still growing within the crater. The main part of the city was found buried deep in the central peak, with various large tunnels leading to strategic areas at the rim. The terrain in Tycho is brutal, with numerous fissures, mounds and large blocks, it being too young to have been worn smooth by space weathering.

"Their most likely route is around Maginus and up through Street crater, indicated Mike. That would put them on high ground on the southern rim, but not the highest. What do we have in the way of defensive weaponry?"

"Not much," indicated Marshall Clavius. "We have a decent amount of mining charges. The plasma torches we use for excavating the tunnels could probably be adapted to some end. Don't know what we could do with the lasers – they're designed for lidar, not offensive use. The main advantage we have is the terrain. If we can deny them access to the tunnels they'll have to come overland, and that works to our advantage!"

"Agreed," concurred Mike. "There are several hundred surface vehicles with unknown armaments. They'll be on the south rim of Tycho in about six hours if my estimates hold up. Here's what we're going to do!"

As Mike had predicted, the first scouts of the invasion force showed up on the crater rim six hours later. They tended to be dunebuggy type vehicles, excellent for bouncing around on the lunar terrain and trailblazing the smoothest path for those following. Several broke off to each flank to start scouting around the rim, while the remainder started moving down the long scarps to the crater floor. Innumerable hidden eyes watched their progress, but did nothing.

There was bigger prey afoot.

Several hours later, the main force arrived and began taking up position on the crater rim. A number of the vehicles had industrial lasers on them, and these quickly took aim at the communications arrays atop the central peak. Brief flashes of light on each antenna were the only warning of the silent storm of plasma and debris that quickly followed. Other vehicles had what appeared to be catapults mounted on top, which started lobbing rocks onto the crater floor to probe the defenses. Still others had railguns mounted atop, which began peppering the central peaks with small puffs of dust.

What appeared to be troop carriers started moving towards the facilities on the crater rim, which were known to be connected by tunnels to the heart of the city. They were counting on the Lunies not wanting to sacrifice their own infrastructure. What they quickly learned was that the citizenry of the Moon had other ways to protect themselves. What the first team of invaders didn't realize was that the airlocks had been rewired for both doors to open when the inner door was activated. The interior had also been pressurized to a score of atmospheres, with lots of debris piled just inside the inner door. The explosive release took out dozens of the mercenaries in a rather messy way.

Vehicles were beginning to move down the slope to the crater floor, carefully picking their way through the terraces and scarps formed when Tycho was created. Still there was no response, and troops anxious for plunder and pillaging began accelerating towards the central peak. The early hours of the lunar day sent long shadows across the terrain, shadows black as a void. Vehicles of all shapes and sizes marched like ants in a swarm down the crater wall and across the floor. It was only when the bulk of the force had moved into the crater that the invaders met their first active response.

For past articles, Visit http://www.moonsociety.org/publications/mmm_classics/ or [mmm_themes/](http://www.moonsociety.org/publications/mmm_themes/)

Just below the rim of the crater, a long line of dust and rocks burst silently into the air. The showering of debris rained slowly down onto the advancing vehicles, but it was only long moments before the real nature of the response was revealed. With majestic slowness, large walls of rock began silently slumping down towards the crater floor, seeking a new equilibrium after the shock of the mining charges. Tychoville had done an extensive geological study of the crater looking for resources, and knew exactly where to plant the charges for maximum effect.

As the kilometers of dust and rock slid down towards the crater floor it buried scores of the invading vehicles, crushing them with impunity. Those vehicles in the vanguard of the attack quickly accelerated away from the avalanche of gray powder slowly falling towards them. In their carelessness, many more were lost when they crashed into unforeseen fissures, or were pierced by the plasma torches cunningly hidden in the shadows of the rocks. Still more marauders were destroyed when they encountered impromptu mines created with mining charges. All the mines had to do was puncture the hull to be effective, and were designed accordingly. Not everyone took vacuum discipline seriously, and the Moon was happy to exact the toll.

Within the space of an hour the bulk of the invading armada of vehicles had been rendered incapacitated or destroyed. The face of Tycho had been reshaped in its defense, and even astronomers on Earth could see the changes. A cloud of electrostatically suspended particles was flowing across the crater, obscuring the desperate fight taking place there.

Still, over a hundred vehicles remained, and mercenaries started pouring from the crippled vehicles to advance on the central peak. The citizens of Tychoville weren't the only ones fighting for survival. The mercenaries knew now that their only hope to survive would be in the capture of the city and its air supply. Here the malefactors knew their advantage ñ they had guns, which everyone knew were culturally taboo on the Moon, and the Lunies didn't. The Lunar Guard had flechette pistols with glass darts, but simple body armor rendered them largely useless. The rest would have knives and sharp sticks at best. It would be a glorious slaughter thought the man who now found himself in charge of what was left of the invading force. Quickly taking stock of the forces available to him, Captain Max Min of the Earth Primacy forces began formulating his plan for the final assault on Tychoville. Checking his watch, he turned to the south to scan the rim of the crater. There! New gleams were glinting against the backdrop of the void. His reinforcements were here, and he was on the doorstep of a defenseless city. Black thoughts of vengeance for his fallen comrades filled his head as he stood before the main airlock of Tychoville.

Can Marshall Mike Moondust save the city from the marauding horde?

Tune in next month for the next thrilling chapter!

“ISDC 2014 – “A Space Renaissance”

Los Angeles, CA – May 14–19, 2014

<http://isdc.nss.org/2014/>

Sheraton Gateway Hotel at LAX Airport



<http://www.starwoodhotels.com/sheraton/property/overview/index.html?propertyID=344> Visitor's Guide to Los Angeles – <http://lacity.org/visitors/index.htm>

<http://isdc.nss.org/2014/speakers-all.html> – <http://isdc.nss.org/2014/schedule.html> [tracks]

For past articles, Visit http://www.moonsociety.org/publications/mmm_classics/ or [mmm_themes/](http://www.moonsociety.org/publications/mmm_themes/)



“The Survival Imperative: Using Space to Protect Earth”

By William E. Burrows – Reviewed by Ken Murphy

www.outofthecradle.net/archives/2006/09/the-survival-imperative-using-space-to-protect-earth/

Published in 2006 by Forge Books (a Tom Doherty Associates press, like Tor Books), it weighs in at 350 pages of content plus several appendices. No errors noted.

Mr. Burrows, a [professor of Journalism at NYU](http://www.outofthecradle.net/archives/2006/09/the-survival-imperative-using-space-to-protect-earth/), is one of the better known chroniclers of the space age, and his book “This New Ocean” is a particularly well known title. In “[The Survival Imperative](#)”, Mr. Burrows picks up on the growing theme of “Space for the benefit of Earth”, and lays out a very compelling case for why our efforts to develop the space frontier are not merely a luxury, but rather a necessity if we value the continuity of our civilization into the indefinite future.

In the first chapter, “Hell on Earth”, Mr. Burrows lays out the entirely plausible scenario of a ‘string of pearls’ cometary impactor laying a line of destruction from the Indian subcontinent to the Great Lakes in North America. The scenario is that the impactor is a ‘blindsider’ [my term], coming up out of the Sun’s gravity well where our telescopes can’t espy them and at a speed that makes the $F=ma$ formula not our friend. In the aftermath, the Indian subcontinent becomes a nuclear inferno, 3.5 million people die in NYC, and the chaos that ensues as social order breaks down and a cloud of impact debris and radioactive fallout begins to spread over the planet. It is not a fun chapter, though Mr. Burrows lays it all out in a calm and journalistic manner. It’s not a ‘Doomsday scenario’ harangue, but more a documentation of what would occur. Nevertheless, the particularly sensitive in spirit might want to avoid that chapter.

In the next, “Let there be light”, the author explains how we already have most of the tools we need to start addressing these risks in an effort to mitigate them. (Only a fool believes that risk can be ‘eliminated’). ‘Light’, in this context is the light of knowledge, that wonderful human achievement that underlies our civilization and has provided us the means to create these tools. He also explores how the light of knowledge can be turned into a tool of darkness.

He continues on that theme in “Target Earth”, as he lays out the myriad self-inflicted ways in which humanity can do itself in, as well as how Mother Earth has her own particular indifference to our existence. This is another tough chapter, made worse by the fact that these are the things we do to ourselves. But he also starts laying out how we’ve started deploying space tools to help us address these risks.

In the next chapter, “The Once and Future Space Program”, the author walks us through a brief history of modern space, from Tsiolkovsky’s first realistic treatments on the subject to the modern mess that is NASA as an institution. In the next chapter, “A beehive called Earth”, he lays out the how we’ve developed our cislunar assets: the communications, reconnaissance, spy, TV, radio, GPS and other satellites, and how these assets have changed our lives. Next up is the people in “The Ultimate Frequent Flier Program” where Mr. Burrows explores some of the concepts that have been promulgated for people to go into space to stay. He ends by calling for a Planetary Protection Program as the overall mission and strategy for NASA’s efforts.

My favorite chapter is of course “A Treasure Chest on the Moon”. It is here that he lays out his case for an [ARC on the Moon](#), an archive of our civilization, or better, a back-up hard drive of our knowledge. I saw a presentation of this by Mr. Burrows at an NSS-NYC meeting back in 2000 back before I left for [ISU](#). Ever since I’ve been convinced of the merits of the idea, though I think the asteroid watch is a much more important idea and its that one that made it into my “[25 Good Reasons to go to the Moon](#)” (#14 – Neighborhood Watch”). It’s also the last chapter of the book, “The Guardians”. Here is where he makes his case that the only way we can ensure that our civilization doesn’t slip into animalistic barbarism in the event of catastrophe is to spread the pieces of our civilization around not just our planet, but also our Solar system. Part of that is providing tools for a better understanding of our home environment.

This is a book that should be required of our policymakers, and encouraged of our public figures. Someone should send a copy to Oprah. This book lays out a compelling need for, and a way to address, a program of protecting our home planet from threats both internal and external. It is not a ‘doom and gloom’ handbook, but rather a rational laying-out of what the current situation is in this regards. It’s actually optimistic in that he rightfully acknowledges that the United States can play a significant technical and leadership role in this project, though really it is a global project (and we haven’t necessarily been showing ourselves to be playing well in that regard). The author has done a lot of homework, as demonstrated in the extensive bibliography, and also includes some documents that have previously been sent to policymakers in an attempt to draw their attention to this important aspect of our existence on this planet.

This one gets a Full Moon rating. KM



Safe Is Not an Option by Rand Sindberg

Interglobal Media LLC, 2013 softcover, 240 pp., illus. ISBN 978-0-9891355-1-1 US\$19.95

Review By Jeff Foust Monday, January 20, 2014

<http://www.thespacereview.com/article/2435/1>

Here is the MMM Editor's choice quote (by Sindberg) of what is at stake:

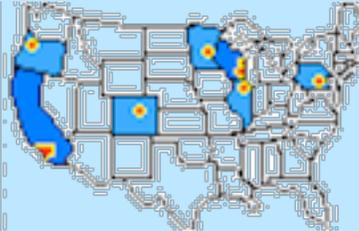
“Exploration and settlement, as well as the development of new modes of transportation, have historically been risky, with countless fatalities. Space, should be no different, but the same tolerance of risk—and death—seen in the past is missing today, at least in government-funded programs.”

Editor's take: In the present discussion of what risks are tolerable in human missions to Mars, NASA is scared silly of politicians, who have lost the frontier spirit entirely, and are gutless wonders. They sell the American public short. We citizens all know that some risks must be taken. There would be no people of non native descent in the Americas today, if this were not so. Nor would there be any firemen or policemen, all of whom face a risk of death as great or greater than will our Mars explorers. As for citizens who fear the risks, no one is asking them to go!

What is the answer? A free enterprise space pioneering enterprise, where the only people to whom an answer need be given are those doing the exploration and frontier blazing themselves, not gutless politicians, afraid of voter backlash. One way or another, “people” – “humans” will go to Mars, and beyond, and eventually settle. We are a frontier people from the start. Pioneering new lands, crossing dangerous rivers, mountains, and oceans is “what we do.” Some will die. But more significantly, some will succeed and go on to flourish in new lands. Everyone reading this is the descendant of someone who took “unreasonable risks.”

People of Earth will make our ancestors proud. Yes, we will try to reduce risks in affordable ways. Beyond that, we will just go anyway, as did the Polynesians, the Eskimos, the Inuit, etc., etc., etc. PK

NSS Chapters that share Moon Miners' Manifesto



Space Chapter HUB Webiste: <http://nsschapters.org/hub/>

Feature Page: Project Menus Unlimited <http://nsschapters.org/hub/projects.htm>

CALIFORNIA



OASIS: Organization for the Advancement of Space Industrialization & Settlement
Greater Los Angeles Chapter of the National Space Society
 PO Box 1231, Redondo Beach, CA 90278

Events Hotline/Answering Machine: 310-364-2290 – Odyssey Ed: Kat Tanaka odyssey_editor@yahoo.com

<http://www.oasis-nss.org/wordpress/> - oasis@oasis-nss.org – Odyssey Newsletter www.oasis-nss.org/articles.html

Regular Meeting 3 pm 3rd SAT monthly 20 – MAY 18 – JUN 15 – JUL 20

SAT MAR 15 3 pm OASIS Board Meeting at home of Bob Gounley and Paula Delfose 1738 la Paz Rd, Altadena

SAT April 19, 2013, 3 pm OASIS Board Meeting, Home of Gareth Powell and Lisa Kaspin-Powell,
 3206 Summertime Lane, Culver City

For past articles, Visit http://www.moonsociety.org/publications/mmm_classics/ or [mmm_themes/](http://www.moonsociety.org/publications/mmm_themes/)

WISCONSIN

**MLRS – Milwaukee Lunar Reclamation Society**

PO Box 2101, Milwaukee, WI 53201 – www.Milwaukee-Lunar-Reclamation.org (new)

Ad Astra per Ardua Nostra = To the Stars through our own hard work!

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• James Schroeter (414) 333-3679 – james_schroeter@yahoo.com

TREASURER/Database – • Robert Bialecki (414) 372-9613 – bobriverwest@yahoo.com

(• Current Members of the MLRS Board of Directors)

Meeting place changes for some dates: March 8, May 10, June 14th meetings in room G110 1-4pm

Our April 12th Meeting will be in **G150 1-8 pm - a Yuri's Night party** cosponsored by **Milwaukee Space Exploration Meet-up** www.meetup.com/Milwaukee-Space-Exploration-Meetup/ and www.Space-Milwaukee.com
We will have displays, music, films, and pot-luck refreshments. This will be our first “extended hours” meeting.

<https://news.marquette.edu/news-releases/nasa-selects-marquette-satellite-to-launch-into-space/>

WISCONSIN

**SSS – Sheboygan Space Society**

728 Center St. Kiel, WI 54042-1034 – www.sheboyganspacesociety.org

c/o Will Foerster 920-894-1344 (h) astrowill@frontier.com

SSS Sec./Tres. c/o B.Pat Knier dcnpatknier@gmail.org

DUES: “SSS” c/o B. P. Knier, 22608 County Line Rd, Elkhart Lake WI 53020

Meetings are at The Stoelting House, 309 Indian Hill, Kiel WI 53042 - 3rd Thurs even # months

NEXT MEETINGS: APR 18 - JUN 20 - AUG 15 - OCT 17 - DEC 14 (SAT in Milwaukee)

>>> **Spaceport Sheboygan** (formerly in the Armory Building) has moved to **802 Blue Harbor Drive**, on the South side of the river. This building is owned by Blue Harbor Resort. The annual event is on the **2nd weekend in May**.

COLORADO

**DSS: Denver Space Society fka Front Range L5**

1 Cherry Hills Farm Drive, Englewood, CO 80133

Eric Boethin 303-781-0800 eric@boethin.com – Monthly Meetings 6:00 PM on 3rd Thursdays, 7 pm
Englewood Public Library, Englewood, CO 80110 – 1000 Englewood Parkway, First Floor Civic Center

NEXT MEETINGS: MAR 21 – APR 18 – MAY 16

OREGON

**ORL5 – Oregon L5 Society – <http://www.OregonL5.org>**

PO Box 86, Oregon City, OR 97045

(LBRT – Oregon Moonbase) moonbase@comcast.net

Meetings 3rd Sat. each month at 2 p.m. - Bourne Plaza, 1441 SE 122nd, Portland, downstairs

Regular Meeting 3 pm 3rd SAT monthly – APR 20 – MAY 18 – JUN 15 – JUL 20

ILLINOIS



CSFL5: Chicago Space Frontier L5 – 610 West 47th Place, Chicago, IL 60609

MINNESOTA



MSFS: Minnesota Space Frontier Society – <http://www.mnsfs.org>
c/o Dave Buth, 433 South 7th St. #1808, Minneapolis, MN 55415

PENNSYLVANIA



NSS-PASA: NSS Philadelphia Area Space Alliance – 928 Clinton Street, Philadelphia, PA, 19107
c/o Earl Bennett, Earlisat@verizon.net - 856/261-8032 (h), 215/698-2600 (w)
<http://pasa01.tripod.com/> - <http://phillypasa.blogspot.com>

The NSSPASA Report for February 2014

Meeting locations and times; For March and April we will meet at our regular meeting place at the Liberty One food Court toward the 17th street side of the building between 1 and 3 p.m.. The March meeting will be on **March 8** (snow date the next day) and **April 12**.

In May we have a conflict between two locations: The Super Science Festival in Trenton will happen at the same time as the **Science Carnival on the Parkway** in Philadelphia. Both run at almost the same time and are far enough apart that we will have to divide our forces. More below.

We had our regular reports at the meeting and I will report on them to our group website. I will highlight several points in this report for now:

Changes to our bylaws: Mitch Gordon, our Vice President, has authored, and brought for a vote, changes that will allow **non dues paying members** to participate in voting for various activities and to be part of the activities teams. This would include public outreach at the Science Festivals, public demonstrations at these events and helping with judging at the Science Fairs. As mentioned above we will have a presence at both public outreach events in April and the additional members will be useful.

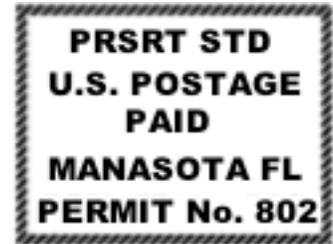
Background and reasoning: We have a number of people who attend our public meetings now who are financially distressed. They are very interested in the positive future that expansion into the solar system represents. Some of these members had been dues paying in the past and may come back again. Others are retirees with limited incomes. Thus bringing them in will be good for them and helpful for our overall goal with people who are willing to put time, which they have, into beneficial activities for everyone. The new rules are: to become an associate member you must attend at least three meetings during the year and can then be voted in by the current membership at that time. Copies of the new bylaws should be posted on our site in the near future.

Activities notes: Mitch is working on a public outreach event for February or March in University City with the Drexel University as the most desired location (Barnes and Noble for the University actually). And in the last week: we judged at the George Washington Carver Science Fair and our people, Mike and Dennis, selected Krish Chawla for his work on the effect of various color filters on the output of a solar panel. Krish is a fifth grader at the St. Mays' Inter Parochial School. Among our gifts, as part of The James H. Chestek Award, where a gift certificate for anything he might want to build (under \$50.00!) from Shapeways, a Make Magazine special issue on Printers and Scanners, a backyard rockets kit, and \$50.00 cash. He was very happy!

Our next scheduled event is judging for the senior level Fair which I will report on in March.

Other activities: due to the two event schedule for May we will try to **create more display material and exhibits involving small satellites and habitats.** Submitted by Earl Bennett

Moon Miners' MANIFESTO
 Milwaukee Lunar Reclamation Society, Inc.
 PO Box 2102, Milwaukee, WI 53201-2102



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- LUNAR RECLAMATION SOC. (NSS-Milwaukee) • \$15 low “one rate” to address above
- MINNESOTA SPACE FRONTIER SOCIETY • \$25 Regular Dues
- OREGON L5 SOCIETY • \$25 for all members
- O.A.S.I.S. L5 (Los Angeles) • \$28 regular dues with MMM
- PHILADELPHIA AREA SPACE ALLIANCE
 - Annual dues with MMM \$25, due March or \$6 per quarter before the next March
- SHEBOYGAN SPACE SOCIETY (WI) • \$15 regular, • \$10 student/teacher/friend • \$1/extra family member
- Individual Subscriptions outside participating chapter areas: • \$15 USA • \$25 Canada;
 - US \$55 Surface Mail Outside North America – Payable to “LRS”, PO Box 2102, Milwaukee, WI 53201

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