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Staking a Claim on the Moon and Mars:

Property Rights in Outer Space

by Alan Wasser

Bob Zubrin should be very proud of the wonderful cover story about Mars that *Newsweek* ran September 23rd. It illustrates the tremendous power of his brilliant vision of human settlement of Mars in the near future.

Also in September, a meeting of National Space Society directors adopted a Mars policy statement supporting Bob's vision. That statement says "An exploration program based upon a permanent human presence on the Red Planet will not only unlock the secrets of possible past life there, but will also establish the rich promise of a human future on Mars." The statement "calls upon the Administration and Congress to set a clear goal of establishing human explorers on Mars by the end of the first decade of the 21st Century."

Unfortunately, in the same month, the White House moved in the opposite direction. It issued a new space policy document which almost seemed to be a deliberate rebuttal to Newsweek and the rest of the groundswell of support for Bob's vision, saying, in effect: "not with the taxpayers' money, you don't!"

The NSS Mars policy avoids specifying funding details, saying optimistically "cost is not really the central issue." But the truth is taxpayers' money is currently our only suggestion, whether directly or through a tax-funded prize.

I believe we need to hedge our bets. Our proposals should include some way to pay at least part of the cost of settlement from something other than taxes; an option that might still produce a settlement on Mars or the moon even if we fail to get full government funding.

We should call for U.S. recognition of extra-terrestrial land claims as a reward for private investment in a settlement and a space line going to and from that settlement.

Although it is now often forgotten, the international law created by the 1967 Outer Space Treaty is not the norm in human history. The right to claim newly settled property has always provided the economic incentive for human expansion. (Would Europeans have settled America if they couldn't claim ownership of the land they settled?) In this case, immediately re- saleable property deeds are the only possible "product" that can be profitabl brought back from space at currently foreseeabl launch costs. There could be a privately funded set tlement on Mars or the moon if we could restore th historically normal condition by establishing a rul of law something like this:

Any private entity (presumably a consortium o companies) which establishes a permanently inhab ited base on Mars or the moon or an asteroid, witl guaranteed regular transportation shuttling betwee the base and the Earth, open to any paying passen ger, immediately acquires full legally recognize and saleable title to hundreds of thousands of squar miles around the base.

The land grant for the first such base on th moon would need to be no less than the size o Alaska which, at even $10 an acre, would be wortl almost four billion dollars. That should be bi enough to allow the winning consortium to begi earning back their expenditure immediately by sell ing off pieces of it, but would still be less than 4% of the moon's surface. On Mars the land gran would have to be more like the size of the Unite States, worth about 23 billion dollars at $10 pe acre. If those turn out to be insufficient to pay fo settlement, there is plenty of room to enlarge th grants.

Of course, the establishment of the space trans port service, which would enable the consortium t win the land grant in the first place, would dramati cally increase the value of the land by making i accessible. As with the land grants that paid fo building America's trans-continental railroads, vas wealth would be created (out of thin vacuum, so t speak) by giving formerly worthless land real value

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and an owner.

There are many ways in which extra-terrestrial property rights might be instituted. The least difficult would be to get a member of Congress to introduce legislation saying that, while the U.S. makes no claim of national sovereignty, until and unless a new treaty on outer space property rights is adopted, all U.S. courts are to recognize and defend the validity of a land claim by any private company (or group of companies) which met the specified conditions.

The legislation should urge other countries to adopt similar laws and should instruct the State Department to try to negotiate a new treaty making the same rules international law. The U.S. law could encourage other nations to pass similar laws by limiting the recognition of claims to entities based in countries which offer reciprocity to U.S. companies. The law could pledge to defend extra-terrestrial properties by imposing sanctions against aggressors.

Since it would not require any appropriation, such legislation might pass as a minor revision of property law, without much publicity, which is probably best considering the "giggle factor" problem. After it was enacted we could start publicizing it, probably by getting someone to announce an attempt to meet the conditions and make a claim.

That White House space policy document, which removed support for a taxpayer funded human Mars mission, did offer something that helps the land grant idea. It says: "The United States rejects any claims to sovereignty by any nation over outer space or celestial bodies, or any portion thereof... The United States considers the space systems of any nation to be national property..." Although it is not talking about land, that supports the legal principle that there can be "property" in space, even without a claim of "national sovereignty". This is a necessary legal premise for establishing the right of settlers to claim private ownership of extra-terrestrial land, without the need to amend or violate the 1967 treaty, which prohibits "national sovereignty" but says nothing at all about "land ownership".

The framers of the '67 treaty understood that perhaps it should not be permanent. They allowed any nation to opt out on one year's notice. Some suggest the U.S. should exercise that right, for the whole treaty or just the "national sovereignty" provision. While I would be happy to see that happen, many people love the treaty for its other provisions, and it is not worth fighting them. A better alternative would be the opposite approach; to accommodate the provision by requiring that claimants be consortia of companies (or citizens) from several different countries. To bring the UN on board, it could even be required that at least one of the partners in each consortium be from a developing country.

If we could get something like this enacted into U.S., and preferably international, law the space race would quickly resume , this time among consortia of private companies. After the first announcement of an attempt to set up a lunar base, others, all over the world, would say, "we can't let THEM claim the moon, WE must get there first". Fear of competitors is still the best motivator.

Although neither has realized it yet, such a law would be a huge plum Congress could give the aerospace companies, without costing the taxpayers anything. Imagine if it led to a consortium of respected companies, headed by, say, KKR or Mitsubishi, asking Boeing, Lockheed Martin and McDonnell Douglas for bids on a rocket capable of shuttling back and forth to the moon or Mars.

Once competition began, companies all around the world would seek their governments' help and investment, perhaps reestablishing a healthy spirit of national competitiveness in space, despite the ban on national sovereignty.

The recent report from the Clementine team finally put to rest one of the most common arguments against the use of land grants as an incentive for privately funded space settlement; the argument that there is no such thing as "valuable property" on the Moon.

Think of private ownership, officially recognized by the US government, of a Lunar Land Grant the size of Alaska, including that crater of permanently frozen water and the mountain on its shore with the almost permanently sunlit top, (which Ben Bova, in his wonderful new book "Moonrise" was kind enough to call "Mt. Wasser"). Such a land grant would be worth a fortune right now, with no way to get there. How many times more than that would such a land grant be worth once there really was a privately owned settlement on the mountain, with a space line going back and forth open to any paying passenger.

Another problem is the feeling, left over from the socialist value system, that property ownership in space is somehow immoral...that space development should be a case of "from each according to his ability, to each according to his need". Of course, that doesn't work in space, either.

Even the Newsweek article gives a tiny nod to the idea of private property on Mars. It includes the phrase: "Now people are listening. It's too soon to apply for a

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mortgage on your own little acre in the Valles Marineris. But..."

Activists are not qualified to solve the technical problems or raise the financing for a space settlement. What we can do is influence governmental actions to restore an environment in which opening the frontier will make investors a healthy profit. After many years of studying the question, I'm convinced this is the way to do that; the way WE could make a real difference? ■

Upcoming Boston NSS Events

Thursday, January 9, 7:30pm

"Challenger Learning Center and Project Aries"
by Bruce Matson, Challenger Learning Center

The CLC brings the excitement, wonder, and science of space exploration to school children of all ages. Bruce Matson shows how they do this with a simulated Space Shuttle mission to Comet Halley. Matson will also discuss Project Aries, a cooperative project with Harvard Smithsonian to educate children on astronomy. This includes hands-on demonstrations.

(Note that this meeting is on the second Tuesday of the month, not the first.)

Thursday, February 6, 7:30pm

"Future Life on Mars"
by Bruce Mackenzie, NSS/SSI

Whether or not life existed on Mars in the Past, life CAN exist on Mars in the future. What might it be like to build a settlement on Mars? Can it be done without bringing everything from Earth? Come see photos of dozens of real buildings which could be built on Mars, using local materials. To contain the costs, we must make maximum use of local building materials with minimum processing: dirt, rock and brick. We should also use simple building techniques, so that the tools can be simple and reliable, and so we can improvise quickly.

Space Calendar

by Ron Baalke

January 1997

Jan ?? - Clark LMLV-1 Launch
Jan ?? - USAF Titan 4B Launch (1st Launch of Titan 4B)
Jan ?? - VSOP-Muses-B Launch (Japan)
Jan ?? - Apstar-2R Long March Launch
Jan ?? - Indostar 1 Launch (Indonesia)
Jan 01 - Mars Pathfinder, Trajectory Correction Maneuver #1 (TCM-1)
Jan 03 - Earth at Perihelion (0.983 AU From Sun)
Jan 03 - Quadrantids Meteor Shower Peak
Jan 04 - Galileo, Orbital Trim Maneuver #18 (OTM-18)
Jan 09 - Jupiter Passes 0.8 Degrees from Neptune
Jan 10 - Galileo, Solar Conjunction Begins
Jan 10 - Asteroid 1991 VK Near-Earth Flyby (0.0749 AU)
Jan 11 - 210th Anniversary (1787), William Herschel's Discovery of Uranus Moons Titania and Oberon
Jan 12 - STS-81 Launch, Atlantis, 5th Shuttle-Mir Mission, SPACEHAB
Jan 12 - Comet Shoemaker-Levy 4 Perihelion (2.02 AU)
Jan 12 - Mercury Passes 2.7 Degrees North of Venus
Jan 16 - GPS-2 Delta 2 Launch
Jan 16 - Asteroid 3 Juno Occults 9.3 Magnitude Star
Jan 20 - Galileo, Europa Flyby (Orbit 5)
Jan 20 - Comet Hale-Bopp Crosses the Orbit of Mars
Jan 21 - Asteroid 1994 PC1 Near-Earth Flyby (0.0651 AU)
Jan 22 - 5th Anniversary (1992), STS-42 Launch (Columbia), International Microgravity Lab
Jan 23 - Iridium-2 Delta 2 Launch
Jan 24 - Asteroid 16 Psyche Occults 7.7 Magnitude Star
Jan 24 - Mercury At Its Greatest Western Elongation (24 Degrees)
Jan 25 - Asteroid 1989 UQ Near-Earth Flyby (0.2286 AU)
Jan 27 - 30th Anniversary (1967), Apollo 1 Fire
Jan 28 - Nahuel-1A/GE-2 Ariane 4 Launch
Jan 28 - Galileo, Solar Conjunction Ends
Jan 28 - Mars Occults 7.2 Magnitude Star
Jan 29 - Minuteman III Launch
Jan 30 - Comet 1996 R2 (Lagerkvist) Perihelion (2.4783 AU)
Jan 31 - Mars Pathfinder, Trajectory Correction Maneuver #2 (TCM-2)
Jan 31 - JCSAT-4 Atlas-2AS Launch
Jan 31 - Possible Mercury Occultation of SAO 187956 (9.3 Magnitude Star)

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