MARS GOVERNANCE

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In order to assist those who eventually settle Mars, a governance paradigm should be installed in advance. The Mars governance entity would be proactive in three categories of advance planning: (a) that of setting worldwide consensus standards for municipalities on Mars; (b) organizing the terra-forming type of efforts; and (c) assembling the human migration from Earth. A fourth function, one that is actually inherent in the naked existence of such a system for Mars, is that of coordinating with other space governance systems. This would relate to space venue wide issues such as a court system; communications; fiscal and monetary systems; security; regulation of commerce among space venues; and welfare systems . . .perhaps UN membership, also.

GOVERNANCE MODEL FOR MARS

The Case for Mars. We are aware of Mars as having some substantial resources that can sustain human society on the Red Planet: decades of research have contributed to that conclusion. (1) In 1997 that background was organized and published in a seminal book by Dr. Robert Zubrin, *The Case for Mars: the plan to settle the Red Planet and why we must*. (2) In short order that plan is to locate machinery on Mars for the production of oxygen for people and hydrogen and oxygen for propellant, as well as a return trip rocket, living quarters, and rovers prior to the arrival of people. **This is the Mars Direct Plan**. After many exploratory trips a migration is foreseen. Then there would commence a long term project called terra-forming Mars so that the light atmosphere could be made heavier and, then, converted to Earth-like quality, and be made to accommodate a green house effect for growing plants. The net result of this Plan is to have humans live and work on Mars as on Earth.

It is asserted that the prior literature has neglected, or avoided almost completely, a definition of Mars Governance. Perhaps this is a consequence of the esoteric assumption that America could and should extend its leadership into space, a proposition recently proposed as good public policy. (3) The scientists and engineers presume that some organizing agent as NASA will somehow deliver good government, or so it seems. Nowhere do we find any focused, relevant, and realistic definition of our future governance paradigm for Mars beyond NASA Mission Rules.

That political void should be filled with a plan well before settlers arrive. In fact, the lack of a governance plan may be the reason we are unable to settle Mars so far. Clearly the technology has been available for decades. (4) It was not until newsletters of the L-5 society appeared in the late 1970's and early on in the 1980's that a concept of Space Governance emerged: that was the idea of a new Nation in Space. (5) The Case for Mars so far has been bottomed on

USA funding or joint USA and Russian funding. These include the Gingrich, Sagan, and J.F.K. models of American involvement. (6) It is asserted that none of these traditional approaches is adequate to achieve the final result that we foresee and espouse. The nature of the plan is to create a human society on Mars. That automatically suggests a new governance paradigm for Mars. It is not possible to imagine that NASA-JPL, nor any other Earth agency, will be suitable for Mars government for the long haul. The end result of scientific success of our plan for Mars is the existence of self governance on Mars. **No other scenario makes sense as a model**.

This projected eventuality may represent a reason why Earth nations do not care to fund Mars exploration. There is a clear conflict in using USA dollars or Russian rubles, all provided from taxation of citizens of those nations, to build a foreign nation for future settlers from unknown places. Also, other spending priorities are higher.

The proposal is that we put in place a solution to the Mars political void. By dealing with the future governance of Mars well in advance of settlers arriving, we may be able to round-out the Case for Mars as human societal activity, not just an engineering exercise. Stated to the contrary, no case for Mars is complete until the organization of that human element is well defined.

A corollary to this proposal is that we design that new governance entity in form and function to accommodate the physical elements on Mars, our plan to use them for our societal convenience, and our society as it will reside on Mars. In short, a degree of relevance is required.

THE CENTERPIECES OF MARS DEVELOPMENT

There are several central elements of the plan to settle Mars, elements that may be called centerpieces. But for this important phenomenon the engineering would not compel us to try. These are listed below along with a statement regarding relevance for government on Mars. The physical phenomenon, therefore, suggest something about government.

1. Terra-forming. There are three phases of terra-forming Mars and three separate ways to get started. The first phase is increasing the carbon dioxide in the atmosphere so pressure increases substantially. The three ways to do this would be to melt the southern polar ice cap, place CFC's in the upper atmosphere, and cook ice water out of the regolith. (7) Later on, the plan will include converting the carbon dioxide and sustaining a greenhouse effect, all of which could take centuries to achieve Earth-like results. Phase I, however, is predicted to be only 30 years to achieve some substantial results. (8) This activity will affect the whole planet, everyone living on it, and future life that may evolve on Mars, if any. It is clearly a venue-wide project that deserves the attention of a whole planet government. The terra-forming of Mars must become a Mars governance project from start to finish lest the Red Planet turns blue without its political consent, lest objectors to terra-forming have no where to complain, and lest chaos

reigns where cooperation is required in a scientific, engineering, and planning sense.

During Phase I the planet will not be affected much, except for an increase in the amount of carbon dioxide put into the atmosphere. The threat to future evolution is minimal. If a reversal in development plans is made, a return of Mars to its prior status by reversing the processes could be ordered and enforced by Mars government. By the way, there is no other legitimate authority for making such a decision for Mars. Earth nations and the United Nations and space agencies who are concerned about Mars would appreciate having a relevant sort of local government with which to consult.

2. International Habitats. Mars will have habitats, some of which may look like tuna cans. The plan is for these to spread out over a large part of the surface of the planet. It is fairly inferable that an international constituency will be involved. With a diverse society answerable to many different Earth nations, a diverse set of mission rules may be expected to exist. This complex and potentially conflicting scenario is a good reason for space venue governance: the avoidance of chaos and conflict during international cooperation. (9) A contemporary and practical application of this human factors problem exists in the International Space Station. Each module is ruled by the laws of the sovereign state that built it. Therefore, rules of property, contract, tort, and crimes apply in five different ways on one station; e.g., an invention made in the Japanese module is subject to Japanese patent laws only. One made in all five modules would require a Philadelphia law firm to protect it, no doubt. Since the I.S.S. is not a habitat, however, and only the O.S.T. Art. VIII model is available, this is tolerable.

3. Ingress and Egress. Another phenomenon of the plan is that of coming and going and approaches to Mars. The moons and Mars orbits must be controlled by the Mars governance in order to protect and coordinate ingress and egress. Obviously, a planet-wide government is the only way to effectuate this jurisdiction.

One aspect of this concern is the development of a cycler orbit fleet of space ships. These would cycle around Earth and its moon and around Mars and its moons. A regular schedule of transport and commerce would result, accordingly. (10)

This important phenomenon should be regulated by the governments involved. Obviously, Mars government would be needed to design, permit, inspect, and monitor the immense space ships that cycled near Mars and rotated through the Mars outer atmosphere, or in its gravity well. Any lack of governance attention could expose settlers to grave danger from falling vessels. Therefore, there is a need for venue wide rules as to uses of the cyclers.

It is proposed that this Society maintain a standing committee on governance for Mars. (11) No other such committee exists. The resources of the World Space Bar Association, the Lunar Economic Development Authority, and United Societies in Space, Inc. are committed to assist. (12) When ready, this committee may declare its willingness to assert itself as representative of

Mars.

A LEGAL BASIS FOR MARS GOVERNANCE

This brief analysis of the legal basis for Mars governance presumes that the entity that asserts jurisdiction will have minimum contacts with, and persuasive ties to, the Red Planet. The three legs of this argument are as follows:

(a) **That International Space Law is silent on the subject**, (b). That **the United Nation's Treaty provides a procedure** and the substantive requirements for starting a new nation in a territory, and, (c). That the Mars governance **entity may waive the UN procedural provisions in favor of full compliance with the substantive standards** because those procedures are for the sole benefit of new nations.

LEGAL DISCUSSION OF THESE THREE POINTS ARE SUMMARIZED AS FOLLOWS:

1. International Space Law is silent. There are five space treaties now in full force and effect. (13) There are three relevant UNGA resolutions that lend character to these treaties. (14) There may be an important custom and practice that will apply to this situation. (15) None of these feature any sanction against the establishment of a government for Mars.

The closest sanction against extending any sovereignty into space is contained in Article II of the O.S.T., 1967:

"Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use, or by any other means." (16)

Since Article VIII authorizes the carrying of National Sovereignty into space within the space ship, the sanction is not absolute. Also, leading space law authorities do not read O.S.T. Article II as any kind of sanction against new groups or non-nations starting up a governance system at a settlement in space: This kind of new government is clearly anticipated. (17) In the case of settlements that organize in space for self-governance purposes, the legal concern is how to limit the scope of their laws because space legal borders are not easily defined. (18) Perhaps in direct response to this concern, other scholars proposed the "Interlune" concept whereby planet-wide jurisdiction would include all of its usable orbits. (19)

On balance, Article II of the O.S.T. is read as a sanction against the space-faring nations signatory to that treaty from extending their sovereignty into space. This Article was a response to the Cold War. It is clearly not intended to prevent all government in space. Otherwise, the space treaties are silent on the subject.

Likewise, the UNGA resolutions are not helpful they do not address the issue at all. However, one custom and practice may become important: **That is the Sputnik experience**. Russia

changed the law by creating space law never before existent: no one objected to Sputnik crossing national borders. This forty year old practice has matured into the first principle of space law. Similarly, if no material or substantial objection to Mars governance is noted, then it will be formed as proposed as customary space law.

2. The United Nations Charter., 1945, Chapter XII, International Trusteeship System. There are two kinds of provisions that relate to the formation of a new nation in a territory: **substantive and procedural**. A governance paradigm for Mars and the orbits around Mars may be asserted under this chapter. The substantive rules would be contained in the following article:

"Article 76. The basic objectives of the trusteeship system in accordance with the purposes of the United Nations laid down in Article I of the present charter, shall be:

(a) to further International peace and security

(b) to promote the political, economic, social, and educational advancement of the inhabitants of the trust territories, and their progressive development towards self-governance or independence as may be appropriate to the particular circumstances of each territory and its people and the freely expressed wishes of the peoples concerned, and as may be provided by the terms of each trusteeship agreement;

(c) to encourage respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language, or religion, and to encourage recognition of the inter-dependence of the peoples of the world; and,

(d) to ensure equal treatment in social, economic, and commercial matters for all members of the United Nations and their national, and, also, equal treatment for the latter in the administration of justice, without prejudice to the attainment of the foregoing objectives and subject to the provisions of Article 80, (relative to existing contracts are not be canceled or delayed because of trusteeship)". (20)

The proposed rights of Mars settlers as detailed by Dr. Robert Zubrin for the Mars governance paradigm includes all of these principles, as well many that go further. (20) There is nothing contained in the substantive requirements set forth above that would hinder or delay the formation of a territorial government for Mars by the Mars Society. In fact, there is an apparent hand in glove affinity that would suggest treaty authority for same.

3. UN Procedural Aspects may be waived. Article 78 of this treaty provides that the procedures relating to the maintenance of a trusteeship council should be eliminated as soon as the territorial government becomes a member of the United Nations. In the case of Space Governance entities, that may or may not occur soon: there is a novelty aspect that must be overcome. However, if the Mars government tenders its application to join the UN at the inception of its existence, it may be deemed inappropriate to have a trusteeship council monitoring its work. As stated in Article 78, ... "relationship among (nations) shall be based on respect for the principle of sovereign equality. " (22) No member nation will be subject to any trusteeship council procedure.

Furthermore, all of the procedural provisions relate to methods by which the UN and the

security council and all of the standing committees can benefit the new nation in the defined territory. But, the new organization itself can be the administering authority for governance in the Mars territory. (23) Because all of the procedural provisions are for the benefit of the new organization, they may be waived by it. This waiver would also represent a compelling strategy to obtain UN full membership so the full measure of UN participation could be attained sooner rather than later. As a matter of historical reality, trust territory governance has never before been managed by Ph.D. level administrators, such as belong to the Mars Society, nor one so internationally grounded and UN friendly. (24)

There would be no objection to a fair trusteeship agreement and submission to procedural monitoring, if it was available for this purpose. Again, the novelty of this application may be expected to put off the UN trusteeship council, which is almost entirely out of business because it has been successful.

WHEN TO START

The really hard part is to just start it. The other pieces of this puzzle may be expected to fall into place once people understand the model that is being attempted. For example, the committee will expand as needed when necessary and as indicated: there is a large number of diversified experts in the Mars Society, all of whom would participate on request. How, where, why, how much, and what if are all resolvable by the committee as part of its day to day business. The stumbling block is "when."

Let me suggest that there is one time *not* to start. That is right after America or Europe or Russia or Japan land on Mars and declare it theirs. Anytime before that kind of anti-treaty activity occurs is acceptable. (25) Mars governance under Mars Society auspices may represent a trusteeship, but it will certainly represent governance *in absentia*. The government of Charles DeGaul in England for the Nation of France comes to mind. It was in exile but it clearly was legitimate.

The principal reason for starting now is because three parts of the Mars development plan require its existence in order to proceed. The Phase I of terra-forming Mars requires Mars governance because no private financing is likely. As a whole planet project , one that affects the atmosphere itself, only a public authority could manage it. Indeed, any scheme that was not grounded on Mars general obligation bonds, to be distinguished from revenue bonds to build a commercial facility, might be criticized as unmarketable. The full faith and credit of the Red Planet itself is needed to finance this effort over hundred of years.

Also, the decision making function needs to be defined. Only a Mars governance entity can authorize terra-forming of Mars. The random and extra territorial opinion of others are simply not adequate. Nor are they legally material. If legal objection is made, it should be expressed by the filing of public interest litigation. Only the government of Mars could defend that kind of

suit with sovereign immunity at Mars.

Furthermore, there is no reason to wait to commence terra-forming Mars. If a Mars government were in place, the Phase I activity could start immediately. Heating facilities of various designs could be sent to the Red Planet every two years, just like the Mars Direct Plan to locate fuel making facilities. In fact, the general obligation bond proceeds dedicated to terra-forming might add synergy. All of the other equipment could be sent to Mars with the heaters.

Likewise, the international village of tuna settlements need to work out their paradigm well before arrival of the diverse settlers. This is extremely important because we seek a whole world movement and there are many competing philosophies of living on Earth. The transportation of a society into space may be expected to take time. God forbid we have a habitable Mars and no consensus on the rules for living and working in space. This tedious task needs to begin as soon as possible under the auspices of the Mars government.

As to issues of ingress and egress, other outer space governance units need to negotiate with a true representative of Mars. The Lunar Economic Development Authority, Inc., headed by Mr. Mike Duke, could help design cycler orbits, set up rules for trade and commerce, and coordinate monetary and fiscal policy. There is no reason to wait because all of these pieces to the puzzle are waiting to be put where they fit.

CONCLUSION

Governance in space could be divided into hundreds of diverse and lopsided parcels, under the current treaty regime. (26) A more reasonable and productive regime is indicated for our last frontiers. Science and government have a good relationship and we should be proud to carry that tradition forward. Remember that most of modern society is effected by good science. However, virtually everything in our world, here and at Mars, is in some way affected by human governance for our benefit, and for the benefit of future generations of us, here and there.

END NOTES TO MARS GOVERANCE

1.

Representative background publications include:
(a) G. Levin, "A reappraisal of Life on Mars", AAS 86-162, D. B. Reiber, ed., *The NASA Mars Conference*, V. 71, AAS *Science and Technology Series*, Univelt, San Diego, CA. 1988.
(b) N. Horowitz, "The Biological Question of Mars," AAS 86-161, D. B. Reiber, ed., *The NASA Mars Conference*, V. 71, AAS *Science and Technology Series*, Univelt, San Diego, CA., 1988.
(c) R. Zubrin, D. Baker, and O. Gwynne, "Mars Direct: Simple, Robust, and Cost Effective Architecture for the Space Exploration Initiative", AIAA 91-0326, Reno, Nevada, 1991. Also published as AAS 90-168, in *The Case for Mars IV: The International Exploration of Mars* (Mission Strategy and Architectures), ed. T. R. Meyer, Vol. 89, AAS *Science and Technology Series*, 1997, pp. 275-314.
(d) R. Zubrin and D. Weaver, "Practical Methods for Near-Term Piloted Mars Missions", AIAA 93-2089, Monterey, CA., 1993.
(e) B. Clark and L. Mason, "The Radiator Show Stopper to Mars Missions": A Solution, Sept., 1990.
(f) B. Mackenzie, "Building Mars Habitats Using Local Materials," AAS 87-216, *The Case for Mars III*, V. 74, AAS *Science and Technology Series*, Univelt, San Diego, CA., 1989.
(g) T. Meyer and C. McKay, "The Atmosphere of Mars-Resources for the Exploration and Settlement of Mars," AAS 81-244. *The Case for Mars*, V. 57, AAS *Science and Technology Series*, Univelt, San Diego, CA., 1984.
(h) R. Zubrin, S. Price, L. Mason, and L. Clark, "An End to End Demonstration of Mars In-Situ Propellant Production," AIAA-95-2798, San Diego, CA., 1995.
(i) S. Geels, J. Miller and B. Clark, "Feasibility of Using Solar Power on Mars: Effects of Dust Storms on incident Solar Radiation", AAS-87-266, *The Case for Mars III*, V. 75, AAS *Science and Technology Series*, Univelt, San Diego, CA., 1989.
(j) R. Zubrin, "Nuclear Thermal Rockets Using Indigenous Martian Propellants", AIAA-89-2768, Monterey, CA., 1989.
(k) B. Cordell, "A Preliminary Assessment of Martian Natural Resource Potential.' AAS 84-185, *The Case for Mars II*, V. 62, AAS *Science and Technology Series*, Univelt, San Diego, CA., 1985.
(l) C. McKay, J. Kastings, O. Toon, "Making Mars Habitable", *Nature*, 352, 1991, pp. 489-496.
(m) M. Carr, *The Surface of Mars*, Yale University Press, New Haven, Conn., 1981.
(n) H. Keiffer, B. Jakowsky, C. Snyder, and M. Matthew, *Mars*, Univ. of Arizona Press, Tucson, Ariz., 1992.
(o) M. Carr, *Water on Mars*, Oxford Univ. Press, NY, NY, 1996.
(p) A. Clark, *The Snows of Olympus, A Garden on Mars*, WW Norton, NY, 1995.

2.

Zubrin, Robert, with Richard Wagner, *The Case for Mars, The Plan to Settle the Red Planet and Why We Must*, The Free Press, NY, 1996.

3.

Lightman, Alex, "Red, White, and Blue Mars: The Case for American Ownership", Mars Founding Convention Proceedings, 1998, p 78. Also see, Lightman, Alex, "The Star Spangled Sponsor: A win-win Case for US trusteeship of space," *Space Governance* Journal, V. 5:2, 1998, p. 168.

4.

Space Resources, NASA-S.P. 509, 1995, *in passim.*

5.

Arthur Dula, L-5 Society Newsletter.

6.

Zubrin, *ibid.*, p. 292.

7.

Zubrin, *ibid.*, Chapter 9, p. 247.

8.

Zubrin, *ibid.*, p. 267.

9.

O'Donnell, D. J. "Overcoming Barriers to Space Travel", *Space Policy* Journal, V. 10 p. 252, Nov. 1994; O'Donnell, D. J. "Founding a Space Nation utilizing Living Systems Theory", *Behavioral Science*, V. 39, p. 93, (1994); O'Donnell, D. J. "Metaspace", *Space Governance* Journal, V l, p. 8, 1994.

10.

Aldrin, Buzz, Encounter With Tiber, Appendix I describes the cycler orbits.

11.

Mars Society Program Book, Aug. 13-16, 1998, p. 11.

12.

United Societies In Space, Inc., which is a project of the World Space Bar Association, has declared Aug. 4, 2000 AD, as the birth date of the Space Metanation. It founded the Lunar Economic Development Authority, Inc., on Aug. 4, 1997. Mr. Mike Duke is CEO; Dr. Edgar Mitchell, astronaut, is on the Board: and Dr. Buzz Aldrin, astronaut, is adviser.

13.

The Five Space Treaties are:
i) The Treaty on Principles Governing the Activities of States in the Exploration and uses of Outer Space, including the moon and other celestial bodies, known as the Outer Space Treaty of 1967, and cited herein as O.S.T. This is viewed as our constitution of space law by most commentators.
ii) The Agreement on the Rescue of Astronauts, and the Return of Objects Launched into Outer Space, known as the Rescue and Return Treaty of 1968.
iii) The Convention on Registration of Objects Launched into Outer Space, as the Registration Treaty of 1975.
iv) Convention on International Liability for damage caused by Space Objects, known as the Liability Treaty of 1972.
v) The Agreement Governing the Activities of States on the Moon and other celestial bodies, also known as the

Moon Treaty of 1979.

14.

UNGA Resolution #1962 (XVII), a declaration of legal principles governing the activities of states in the exploration and use of Outer Space, 1962 and 1963. It came five and four years before the first space treaty. UNGA resolution on benefit sharing, 1997, reinterpreted much of Article I of the 1967 Treaty 30 years later: It converted benefit sharing to a form of "International Cooperation."

15.

Referring to Sputnik's revolutions in low-earth orbit, commencing in 1957, which began space law with the principle that because no one objected so satellites may cross national borders without gaining permission.

16.

O.S.T. Article II.

17.

Sterns, P. M. and Tennen, L. C. "International Recognition of the Art of Living in Space: The Emergence of Settlement Competence", II SL 22, (1980), p.221.

18.

Fasan, E., "Human Settlements on Planets: New Station, or New Nations", *Journal of Space Law*, V. 22, 1994, p. 47.

19.

Cordell, B., "Interspace-a Design for an International Space Agency", *Space Policy*, V. 8-4, 1992, p. 287. Dr. Harrison Schmidt (astronaut) has several similar unpublished papers that propose similar structure at the moon under the name "Interlune."

20.

United Nations Charter, 1945, Article 76.

21.

Zubrin, R., "The Rights of Mars", Mars Society Program Book, 1998, p. 82.

22.

United Nations Charter, 1945, Article 78. Also note that only member nations at the UN are able to speak under UN rules.

23.

United Nations Charter, 1945, Article 81.

24.

The Mars Society Founding Convention was attended by over 700 registrants. The Society has over 5,000 requests for memberships. Over 200 abstracts were submitted by Ph.D. level participants. All major news media covered the event and all space-faring agencies attended.

25.

O.S.T. Article II principle against extending sovereignty into space.

26.

O.S.T.. Article VIII principle that every space ship may carry its sponsor’s sovereignty into space. This is interpreted to cover the area where it lands.