

# The Final Frontier: A Proposed Legal Order for an American Space Settlement

Are we not now . . . living in a period of deceptive quiet—the first few seconds, relatively, of the Space Age? In our daily lives few of us are much aware of Space Age problems that demand intelligent answers. . . . Only now are we beginning to realize the vast economic and social implications of the Space program for the multitude of us who have no present intention of riding a rocket to the moon or Mars.<sup>1</sup>

## Introduction

A pilgrimage to the stars may seem a remote possibility, but in fact, the United States will soon establish a permanent human presence in space.<sup>2</sup> The United States can no longer ignore the effects this settlement will have upon life on Earth, or upon an American future in space. The United States should begin to address the potential problems arising from space settlement by designing a legal system which will circumvent the chaotic effects of space anarchy.

Current federal policy, which encourages private investment and participation in space exploration and settlement,<sup>3</sup> reflects the importance of private resources to the development and expansion of a space community. Yet, before private participation can occur, the federal government must lay a foundation upon which space settlement can be realized—a foundation which accounts for an environment that differs radically from the Earth.

Since space exploration and settlement can be viewed as an extension into space of the boundaries of nations on Earth, space settlement will also have international ramifications. Developing an appropriate American system for governing space activity requires consideration of both international and domestic political structures and how they affect

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1. E. LINDAMAN, *SPACE: A NEW DIRECTION FOR MANKIND* 115 (1st ed. 1969) (quoting Joseph A. Beirne, President of the Communications Workers of America).

2. See *infra* notes 19-27 and accompanying text for a discussion of NASA's plans in space.

3. 42 U.S.C. § 2451(c) (Supp. IV 1986) provides: "The Congress declares that the general welfare of the United States requires that the National Aeronautics and Space Administration . . . seek and encourage, to the maximum extent possible, the fullest commercial use of space."

space exploration and settlement. This Note will focus primarily on the United States settlement in space and its implications for a legal system there.

The federal government's authority over space settlement can be analogized to its authority over treaty matters,<sup>4</sup> federal property and territory,<sup>5</sup> interstate and foreign commerce,<sup>6</sup> national defense,<sup>7</sup> and the high seas.<sup>8</sup> These constitutional powers permit the federal government to protect national security and the United States interest in improving life on Earth.

This Note discusses the constitutional implications of American settlement in space. Part I discusses the benefits of space exploration and settlement, current regulation of space activities, and the probable characterization of an American space settlement. Part II examines the territorial expansion which has led the United States to exploration and potential settlement beyond the Earth's atmosphere. Part III then considers and analyzes constitutional grants of power which would permit Congress to design a governing order in space. It also considers alternative judicial systems for meeting the unique needs of a space community. Part IV discusses the negative implications of state regulation of space activity and its interference with federal interests in the area. Part V sets forth a model which analogizes the space station to a federal territory, and proposes that Congress enact a Federal Space Code to govern space activities and establish exclusive federal jurisdiction over claims arising under that Code. This Note concludes that exclusive federal control over space development is crucial for the protection and enforcement of federal interests in the area.

## I. Space Exploration and Settlement

### A. The Benefits of Exploring Space

Years of research have revealed the potential benefits of activity in space. In recent years, nations have viewed space as a new frontier,<sup>9</sup> in part to provide relief for problems found on Earth, such as overpopulation and scarcity of resources. Since many of the resources located and used on Earth are also found in space, exploration and development of space promises rich rewards for humankind.

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4. See *infra* notes 99-120 and accompanying text.

5. See *infra* notes 121-146 and accompanying text.

6. See *infra* notes 147-156 and accompanying text.

7. See *infra* notes 157-167 and accompanying text.

8. See *infra* notes 168-176 and accompanying text.

9. See, e.g., Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, *entered into force* Oct. 10, 1967, preamble, 18 U.S.T. 2410, T.I.A.S. No. 6347, 610 U.N.T.S. 205 [hereinafter *The Outer Space Treaty*].

The microgravity atmosphere of space can enhance productivity and efficiency in the manufacturing of goods, permitting results which are presently unattainable on Earth.<sup>10</sup> For example, a recent experiment demonstrated the possibility of producing "more than 700 times the material that could be extracted from similar Earth-based processing, with a fourfold increase in purity[,] . . . enabl[ing] production of advanced pharmaceuticals for more effective treatment of many diseases."<sup>11</sup> These improvements could signify better and less expensive consumer products.

Technology originally developed for NASA's space program has already provided new products and processes on Earth. These secondary applications include breathing systems for firefighters,<sup>12</sup> the production of a fire resistant textile ingredient,<sup>13</sup> computer software programs which provide industries with important data resources,<sup>14</sup> energy systems design programs,<sup>15</sup> remote sensing systems,<sup>16</sup> and even a new line of athletic shoes.<sup>17</sup> Thus, the result of space research has been to improve life on Earth, even before space settlement has been achieved.

## B. Plans for Space Settlement

Over the next fifty years,<sup>18</sup> the United States government hopes to implement the following plans: construction of a "low cost Earth-to-orbit cargo vehicle and a companion passenger craft,"<sup>19</sup> a space station,<sup>20</sup> a full-scale lunar manufacturing facility,<sup>21</sup> and a Mars spaceport.<sup>22</sup> NASA's transportation vehicles will be used to carry people and material

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10. See NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, SPINOFF 1986, at 42 [hereinafter SPINOFF].

11. *Id.* at 44. See *id.* for details on the capability of splitting matter for pharmaceutical purposes.

12. *Id.* at 50-53.

13. *Id.* at 54-56.

14. *Id.* at 72.

15. *Id.* at 79.

16. *Id.* at 110.

17. *Id.* at 84.

18. *Id.* at 33.

19. *Id.* at 32.

20. *Id.* The United States has signed agreements with Japan, Canada, and the European Space Agency (ESA) member nations, see *infra* note 34, to cooperate in developing the space station. SPINOFF, *supra* note 10, at 36. Each sovereign is responsible for designing a different aspect of the station. *Id.* Japan is contemplating a multipurpose research and development laboratory. *Id.* Canada is developing a Mobile Servicing Center, improving Canada's knowledge of the shuttle orbiter's robot manipulator arm. *Id.* ESA is studying designs for unmanned platforms which could be used as a laboratory "with facilities for materials processing and life sciences experimentation." *Id.*

Although the nations are cooperating in constructing a space station, each will exercise authority over distinct modules comprising the station. See *id.* at 40. The station should be operational by 1994. *Id.* at 32.

21. SPINOFF, *supra* note 10, at 32.

22. *Id.* at 33.

into space to help build space facilities. Later, as products are manufactured in space, the vehicles will be used to transport these products from space to Earth. A space station, operating at an altitude of about 300 miles from Earth, will house laboratories, factories, residential areas, governmental offices,<sup>23</sup> and a military complex to protect the station as well as American interests on Earth.<sup>24</sup> The space station will serve as an important assembly and service depot as well as a base for travel in space.<sup>25</sup> The full lunar spaceport will permit the exploration and exploitation of lunar resources for production and consumption on Earth as well as in space.<sup>26</sup> The Mars spaceport will serve the same purpose as the lunar spaceport, and should be constructed by the year 2030.<sup>27</sup>

Since space settlement will occur in several stages, many of which have not yet advanced beyond their initial conception, it is impossible to foresee at this moment all the different methods for settling in space. Recognizing that a distinct set of implications will accompany each method of settling, this Note focuses on the implications associated with the construction and settlement of the following American space station.

The space station initially will have eight crew members, each serving for periods of approximately three months.<sup>28</sup> Over the ensuing decades, new modules will be added to the initial modules,<sup>29</sup> each module providing distinct services, so that the station will become a full-service depot for those travelling between Earth and the lunar and Martian spaceports. When the station becomes more functional and the services more varied, people will be able to reside there for longer periods of time. As the duration of the community members' stay lengthens, it will become increasingly necessary to develop a means for regulating those activities occurring in space.

### C. Regulation of Space Activities

The benefits and opportunities provided by space exploration have made international and national legislation regarding space activities increasingly important.<sup>30</sup> Even before launching rockets into space, nations negotiated and entered into treaties to regulate activity in space<sup>31</sup> to

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23. *Id.* at 34-35, 40.

24. *See infra* note 163 and accompanying text.

25. SPINOFF, *supra* note 10, at 35.

26. *Id.* at 32-33.

27. *Id.* at 33.

28. *Id.* at 41.

29. NASA currently plans to place two to four modules in space; the exact number will be determined at a later date. *Id.* at 40.

30. *See infra* notes 31 & 51.

31. *See, e.g.*, The Outer Space Treaty, *supra* note 9 (setting forth the foundation for all space activity); Convention on International Liability for Damage Caused by Space Objects, *entered into force* Sept. 1, 1972, 24 U.S.T. 2389, T.I.A.S. No. 7762, 961 U.N.T.S. 187 [herein-

ensure global peace and to protect non-“space-competent” nations<sup>32</sup> from falling prey to “space-competent” nations, such as the United States and the Soviet Union. Under the space treaties, national governments<sup>33</sup> and intergovernmental agencies<sup>34</sup> retain broad authority over space development and have exclusive control over all space activities, including the launching and placement of satellites in space.<sup>35</sup>

An analysis of the manner in which nations have regulated other areas similar to space is important to an understanding of how the international community has approached space activities and how it will approach future development in space. Treaties and customary international law limit the acquisition of new territories.<sup>36</sup> Treaties also regulate the use and exploitation of the territories governed. Two international treaties regulating transnational areas—the High Seas Convention<sup>37</sup> and the Antarctic Treaty<sup>38</sup>—provide particularly useful

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after The Liability Convention] (establishing rules for determining liability for damage arising from space activity).

32. By “space-competent” nations, the author means those nations involved in space research and those that have already achieved the means to travel in space.

33. For example, countries such as the United States, the Soviet Union, and France have been most visible in financing the space research and voyages that have occurred thus far.

34. Some countries have pooled resources to compete in space against the United States and the Soviet Union. These joint ventures consist of public intergovernmental agencies such as the European Space Agency (ESA), which is comprised of some of the member nations of the Common Market. ESA, originally and officially named “The European Space Research Organisation” was initiated by treaty. Agreement Between the Governments of the United Kingdom of Great Britain and Northern Ireland, Belgium, Denmark, France, the Federal Republic of Germany, Italy, the Netherlands, Norway, Spain, Sweden and Switzerland Setting up a Preparatory Commission to Study the Possibilities of European Collaboration in the Field of Space Research, *entered into force* Feb. 27, 1961, 414 U.N.T.S. 109. This Organization was effectively established by the Convention for the Establishment of a European Space Research Organisation, *entered into force* March 20, 1964, 528 U.N.T.S. 33. Somewhere along the way, the European Space Research Organisation has become popularly known as the European Space Agency.

35. For instance, several nations joined to establish the International Telecommunications Satellite Consortium (INTELSAT), an intergovernmental organization in charge of regulating and monitoring the placement and use of satellites in orbit. Agreement Relating to the International Telecommunications Satellite Organization (INTELSAT), *entered into force* Feb. 12, 1973, 23 U.S.T. 3813, T.I.A.S. No. 7532 (pursuant to Agreement Establishing Interim Arrangements for a Global Commercial Communications Satellite System, *entered into force* Aug. 20, 1964, 15 U.S.T. 1705, T.I.A.S. No. 5646, 514 U.N.T.S. 25). To enforce the agreement on its part, the United States government created the Communications Satellite Corporation (COMSAT) which regulates and monitors all satellite activity by the United States. See Communications Satellite Act of 1962, 47 U.S.C. §§ 701-744 (1982). The President of the United States appoints COMSAT’s board of directors. *Id.* § 733(a).

36. See generally J. CRAWFORD, *THE CREATION OF STATES IN INTERNATIONAL LAW* (1979).

37. Convention on the High Seas, *entered into force* Sept. 30, 1962, 13 U.S.T. 2313, T.I.A.S. No. 5200, 450 U.N.T.S. 11 [hereinafter *The High Seas Convention*].

38. The Antarctic Treaty, *entered into force* June 23, 1961, 12 U.S.T. 794, T.I.A.S. No. 4780, 402 U.N.T.S. 71 [hereinafter *The Antarctic Treaty*].

comparisons to treaties governing space. The High Seas Convention regulates access to the "high seas,"<sup>39</sup> and prevents nations from establishing control over international waters or interfering with the trade between other nations.<sup>40</sup> The Antarctic Treaty regulates the exploration and exploitation of Antarctic resources.<sup>41</sup> It provides that Antarctica be used for *peaceful* purposes only,<sup>42</sup> and that the territory not be subject to any new claims or the enlargement of pre-existing claims.<sup>43</sup> The Treaty is designed to encourage countries to explore cooperatively Antarctic resources without excluding other nations.<sup>44</sup>

Space may be analogized to the high seas and to Antarctica. Like those areas, space has resources of benefit to all nations, and thus should be open to all nations equally. If these transnational areas did not remain open, the global powers could dominate them. Space treaties guarantee peaceful exploration of space<sup>45</sup> and prevent space colonialization.<sup>46</sup> Space treaties also contain many of the same provisions as the High Seas Convention and the Antarctic Treaty.<sup>47</sup> Since each treaty concerns a transnational area that nations hope will remain open, the language used in these treaties is understandably similar.<sup>48</sup>

According to international law, the United States may regulate space activity as long as it does not interfere with other nations' access to, or equal enjoyment of, the area. In 1958, the United States established a space program in an effort to maintain its technological superior-

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39. "The Secretary of the department in which the Coast Guard is operating shall establish appropriate identifiable demarcation lines dividing the high seas from harbors, rivers, and other inland waters of the United States . . ." 33 U.S.C. § 151(a) (1982). The lines of demarcation are further described at 33 C.F.R. §§ 80.01-80.1705 (1986). "These lines may not be located more than twelve nautical miles seaward of the base line from which the territorial sea is measured." 33 U.S.C. § 151(b) (1983). The high seas encompass the portion of the oceans which is outside of any nation's territorial boundaries.

40. The High Seas Convention, *supra* note 37, arts. 2-4.

41. The Antarctic Treaty, *supra* note 38.

42. *Id.* preamble & art. 1.

43. *Id.* art. IV.

44. *Id.* art. III, cl. 2.

45. The Outer Space Treaty, *supra* note 9, art. IV.

46. *Id.* art. II.

47. *Compare id.* art. I with The High Seas Convention, *supra* note 37, art. 3 (all nations should have free access to enjoy these areas); The Outer Space Treaty, *supra* note 9, art. II with The Antarctic Treaty, *supra* note 38, art. IV (claims of national sovereignty prohibited); The Outer Space Treaty, *supra* note 9, art. I with The Antarctic Treaty, *supra* note 38 art. III (international cooperation for scientific research encouraged); The Outer Space Treaty, *supra* note 9, art. IV with the Antarctic Treaty, *supra* note 38, art. I (nonpeaceful use of area prohibited).

48. *See, e.g.,* The Outer Space Treaty, *supra* note 9, art. I ("The exploration and use of outer space . . . shall be carried out for the benefit and in the interests of all countries . . . and shall be the province of all mankind."); The High Seas Convention, *supra* note 37, art. 2 ("The high seas being open to all nations, no State may validly purport to subject any part of them to its sovereignty.").

ity and to explore space technology and science as well as the potential application of new space technology both on Earth and in space.<sup>49</sup> Since the benefits from scientific discoveries in this field have a dramatic effect on both the military and civilian sectors,<sup>50</sup> the federal government delegated authority over space research to both sectors.<sup>51</sup>

In accordance with precepts of international law, the United States will have authority over the American space station itself, but the area surrounding the station will remain open to all other nations.<sup>52</sup> As the situation now appears, the authority to regulate activities occurring *inside* the space station is left open to the federal, state, and local governments. Inside the space station, private industries will work alongside public enterprises in conducting research and manufacturing goods. On Earth, federal, state, and local governments regulate the same types of activities that will occur in space.<sup>53</sup> Therefore, a conflict arises over which level of government will regulate the activities occurring inside the space station.

## II. United States Territorial Expansion

Technology and migration have enabled the United States to expand its territory throughout its history.<sup>54</sup> In entering new regions, the United States has derived several different approaches to the governance of for-

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49. One of the United States objectives for establishing a space program is "[t]he preservation of the role of the United States as a leader in aeronautical and space science and technology and in the application thereof to the conduct of peaceful activities within and outside the atmosphere." 42 U.S.C. § 2451(d)(5) (Supp. III 1985).

50. See, e.g., *infra* notes 161-163 and accompanying text (military applications); *supra* notes 10-17 and accompanying text (commercial benefits).

51. National Aeronautics and Space Act of 1958, 42 U.S.C. §§ 2451-2477 (1982). The statute reads in pertinent part:

[Space] activities shall be the responsibility of, and shall be directed by, a civilian agency exercising control over aeronautical and space activities sponsored by the United States, except that activities peculiar to or primarily associated with the development of weapons systems, military operations, or the defense of the United States (including the research and development necessary to make effective provision for the defense of the United States) shall be the responsibility of, and shall be directed by, the Department of Defense . . . .

*Id.* § 2451(b). Both NASA and the Department of Defense have authority over space activities and related research.

52. See *infra* notes 208-213 and accompanying text.

53. See *infra* notes 254-257 and accompanying text for a discussion of how the federal and state governments allocate the authority to regulate those activities on Earth.

54. In *Hooven & Allison Co. v. Evatt*, 324 U.S. 652 (1945), *disapproved on other grounds sub nom.* *Limbach v. Hooven & Allison Co.*, 466 U.S. 353, 361 (1984), Chief Justice Stone described the constitutional authority to expand the United States territory:

[T]he United States may acquire territory by conquest or by treaty, and may govern it through the exercise of the power of Congress conferred by § 3 of Article IV of the Constitution "to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States."

*Id.* at 673-74. See *supra* note 36 and *infra* notes 121-146 and accompanying text.

eign lands and people. These approaches may provide a framework for addressing similar issues when the United States explores and settles in space.

### A. Continental Territories

During the nineteenth century, American pioneers travelled westward. Indian tribes resisted the pioneers' assertion of rule over the land;<sup>55</sup> however, the federal government endorsed the pioneers' actions and helped them establish settlements wherever possible.<sup>56</sup>

Although the governing order of the territories resembled that of the states, the federal government participated more substantially in territorial affairs. The federal government appointed a governor, a secretary, and three judges to govern each territory.<sup>57</sup> The white adult male population in the territory elected representatives to a territorial legislature and one delegate to represent the territory's interest in Congress.<sup>58</sup>

Although the delegates participated in congressional debates, they could not vote.<sup>59</sup> Nevertheless, because they were viewed as experts on territorial issues, the territorial delegates were influential in Congress.<sup>60</sup> They lobbied on behalf of their territories, helping them to achieve statehood.<sup>61</sup> Upon reaching statehood, the former territories held intact a political order resembling that of the other states, except for the enactment of state constitutions.

### B. An Insular Territorial Model: Cuba, Puerto Rico, Hawaii, and the Philippines

Towards the end of the nineteenth century, the United States began to look beyond its continental boundaries to Cuba, Central America, and the Pacific as places to which it could extend its influence. In the Span-

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55. S. MORISON, *THE OXFORD HISTORY OF THE AMERICAN PEOPLE* 445 (1965).

56. By a policy of removal, the federal government exchanged land in the western territories for Indian land in the eastern states. *Id.* at 445-46. States often initiated the removal by asserting jurisdiction over Indian reservations, despite the violation of federal treaties with the Indians. *Id.* The federal government then appropriated funds to compensate the Indians for their land and to permit them to purchase new land in the western territories. *Id.*

57. E. POMEROY, *THE TERRITORIES AND THE UNITED STATES, 1861-1890*, at 51, 98 (1969).

58. *Id.* at 80. Tension existed between the federal and territorial governments. *Id.* at 100-06. The popularly elected territorial legislature could block the power of the federally appointed governor, who oftentimes came from outside the territory and knew little about the local population's concerns. *Id.* at 101. The people mistrusted the federally appointed officers who received salaries from sources outside of the territories. *Id.* The appointed officials, however, tried to cater to the population's interests because they oftentimes wanted to be elected by the people to return to the East as a territorial delegate to Congress. *Id.* at 98.

59. *Id.* at 80.

60. *Id.* at 82-89.

61. *Id.*



ish-American War, the United States captured Cuba, Puerto Rico, and the Philippines from Spain, and annexed the islands of Hawaii.<sup>62</sup>

The United States had to decide how to govern each newly acquired territory, and provided each with a different treatment.<sup>63</sup> The United States did not annex Cuba; instead, the United States Army occupied the island for three years until Cuba had a constitutional convention in which Cuba declared its sovereignty.<sup>64</sup>

In Puerto Rico, the existing system of law and local government was not as well organized as in Cuba, and the United States faced less resistance to its rule.<sup>65</sup> The government established in Puerto Rico resembled that of the continental territories: the United States appointed the governor, the Puerto Rican Supreme Court justices, and certain members of the executive council,<sup>66</sup> while the Puerto Rican citizens elected their assembly.<sup>67</sup> The Organic Act of 1917<sup>68</sup> granted American citizenship to Puerto Ricans,<sup>69</sup> and promised steady progress toward Puerto Rican self-government.<sup>70</sup> Today, Puerto Rico is a commonwealth, with an elected governor.<sup>71</sup>

By a congressional joint resolution in 1898,<sup>72</sup> the United States annexed the islands of Hawaii. In the Organic Act of 1900,<sup>73</sup> the United States conferred American citizenship on the Hawaiian people,<sup>74</sup> and the full status of a territory, eligible for statehood, on the islands of Hawaii.<sup>75</sup>

In the Philippines, as in Puerto Rico, the United States governed through its War Department; it did not have a colonial office nor did it appoint a secretary.<sup>76</sup> The Philippine insular government also resembled that of the continental territories<sup>77</sup> until its independence in 1946.

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62. S. MORISON, *supra* note 55, at 804-07.

63. See *infra* notes 121-132 and accompanying text for a discussion of congressional authority over territories.

64. S. MORISON, *supra* note 55, at 808.

65. *Id.*

66. Organic Act of 1917, ch. 145, §§ 12, 13, 39 Stat. 951 (the President appoints the attorney general and the commissioner of education, by and with the advice and consent of the United States Senate). See also S. MORISON, *supra* note 55, at 808.

67. Organic Act of 1917, *supra* note 66, §§ 26, 27.

68. 39 Stat. 951.

69. *Id.* § 5.

70. See S. MORISON, *supra* note 55, at 809.

71. *Id.* Puerto Rico may elect to become a state of the United States.

72. Res. 55, 30 Stat. 750 (1898).

73. Ch. 339, 31 Stat. 141 (1900).

74. *Id.* § 4.

75. On August 21, 1959, the State of Hawaii was admitted into the Union. See Act of March 18, 1959, Pub. L. No. 86-3, 73 Stat. 4 (1959), for the proclamation of Hawaii's acceptance into the Union.

76. See S. MORISON, *supra* note 55, at 806.

77. See *supra* notes 55-61 and accompanying text.

### C. A Trust Model: The Pacific Islands

After World War II, the United States became responsible for the Trust Territory of the Pacific Islands<sup>78</sup> through the United Nations' international trusteeship system.<sup>79</sup> The United States was to help rebuild the islands after the war and to lay a foundation for eventual independence. Under the trusteeship agreement,<sup>80</sup> the United States has "full powers of administration, legislation, and jurisdiction over the territory . . . and may apply to the Trust Territory . . . such of the laws of the United States as it may deem appropriate to local conditions and requirements."<sup>81</sup>

The trust model grants to the trust territory greater sovereignty than that enjoyed by the older insular territories. To illustrate, in the early 1970's the United States entered negotiations with trust territory representatives in the Northern Mariana Islands, which were altering their ties with the other Micronesian islands,<sup>82</sup> to reach a mutually desirable agree-

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78. S.C. Res. 21 (1947), cited in J. CRAWFORD, *supra* note 36, app. at 428. This territory encompasses Micronesia. The United States inherited the trusteeship from Japan, which the United States argued had "forfeited the right and capacity to be the mandatory Power over these islands" because of its military use of the islands during World War II. J. CRAWFORD, *supra* note 36, at 347 (U.N. Security Council, SCOR 133d mtg., Feb. 26, 1947, at 413) (remarks of United States Representative Austin). In its instrument of surrender, Japan accepted the transfer of responsibility to the victors, and renounced all rights to the islands. *Id.* at 348. See also Treaty of Peace of September 8, 1951, Art. 2, 136 U.N.T.S. 45, 48-51.

79. See J. CRAWFORD, *supra* note 36, at 335 (Chapters XII and XIII of the U.N. Charter provide the legal basis for the International Trusteeship System).

80. Trusteeship Agreement for the Former Japanese Mandated Islands, entered into force July 18, 1947, 61 Stat. 3301, T.I.A.S. No. 1665, 8 U.N.T.S. 189 [hereinafter Trusteeship Agreement].

81. *Id.* art. III.

82. See P. LEARY, *THE NORTHERN MARIANAS COVENANT AND AMERICAN TERRITORIAL RELATIONS* 5-11 (1980). The trust territory was transformed into four separate political entities: the Commonwealth of the Northern Marianas, the Republic of the Marshall Islands, the Federated State of Micronesia, and the Republic of Palau. Hills, *Compact of Free Association for Micronesia: Constitutional and International Law Issues*, 18 INT'L LAW. 583, 583 (1984). In 1975, the people of the Northern Marianas approved a covenant with the United States under which it will become a United States commonwealth upon termination of the trusteeship. *Id.* The United States is waiting for all four entities to qualify for sovereignty before terminating its responsibilities. The people of the other three political entities have approved a "free association" political status with the United States, but have not yet performed all the necessary tasks to qualify for termination of the trusteeship. *Id.*

Free association denomination is one of three ways to terminate non-self-governing status, a status enjoyed by the four entities under the international trusteeship system. *Id.* at 602. The other two ways are emergence as an independent state, and incorporation into an independent state. *Id.*

Under the Compact of Free Association Act of 1985, Pub. L. No. 99-239, 99 Stat. 1770 (1985), these entities enjoy full authority to conduct their own internal and foreign affairs. However, the United States retains "full authority and responsibility for security and defense matters." *Id.* § 311.

ment—The Northern Marianas Covenant.<sup>83</sup> This agreement granted the islands greater sovereignty than that enjoyed by Puerto Rico, Guam, American Samoa, and other United States territories.<sup>84</sup> The United States agreed to help the people of the Islands draft their own constitution<sup>85</sup> in accordance with the principles of the Federal Constitution. The United States also agreed to limit federal authority over the internal affairs of the islands.<sup>86</sup>

#### D. An Analysis of the Three Territorial Models

The development of three distinct United States territorial methods is largely attributable to the history and customs of the various territories. The continental territories shared some of the same customs and history of the rest of the United States. Thus, in the continental territorial model, Congress planned to incorporate the territories into the United States by eventually granting them the status of statehood, with all accompanying rights and privileges.<sup>87</sup> Under the insular territorial model, Congress did not consider the territories for incorporation into the United States<sup>88</sup> because the people of these territories enjoyed distinct customs and spoke different languages.<sup>89</sup> For this reason, it was often-times necessary for Congress to provide territorial laws that conformed to the needs and customs of the territorial citizens.<sup>90</sup> Although Congress permitted the insular territories some latitude in designing a governing order to accommodate the territorial lifestyle, Congress still limited territorial sovereignty.<sup>91</sup> Finally, in the trust model, the territories followed

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83. Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America, Pub. L. No. 94-241, 90 Stat. 263 (1976) [hereinafter Northern Marianas Covenant].

84. P. LEARY, *supra* note 82, at 20, 21.

85. Northern Marianas Covenant, *supra* note 83, art. I, § 103, & art. II.

86. *Id.* art. I, §§ 103, 105. The effect of the Covenant, the Northern Marianas argued, would be to make the Islands more state-like than the other territories. P. LEARY, *supra* note 82, at 21, 22. However, the United States took another view of the agreement—possibly to quell the anxiety of the other territories—stating that, although the Islands drafted their own constitution, the United States retained the authority to supersede any laws enacted by the Northern Marianas. *Id.* at 23, 25. As the supreme law of the land, federal law could still preempt the Islands' regulations. *Id.* See also *infra* notes 255-257 and accompanying text. Any congressional resolution to limit federal authority on the Islands could always be revoked by Congress at a later date. P. LEARY, *supra* note 82, at 25.

87. E. POMEROY, *supra* note 57, at 2, 4.

88. *Id.*

89. In 1980, nearly 100% of the Puerto Rican population was Hispanic, and approximately 42% of the Guamanian population was ethnically called Chamorros and spoke the native Chamorro in addition to English. THE WORLD ALMANAC AND BOOK OF FACTS 1987, at 669.

90. See *infra* notes 125-128.

91. See, e.g., Organic Act of 1917, *supra* note 66, § 57 (recognizing congressional power to alter, amend, modify, or repeal "any law or ordinance, civil or criminal, . . . as it may from time to time see fit [for Puerto Rico]").

an entirely different path. Since the initial purpose for the trusteeship was assistance towards self-government,<sup>92</sup> the United States was more willing to deviate from its continental standards, granting the trust governments greater sovereignty over internal matters.

When, and if, Congress classifies the space community as a territory, Congress must examine the three territorial models<sup>93</sup> to determine which model, or models, would be the most appropriate basis for the space community's political structure. The space community's future status may determine Congress' choice of a territorial model. If Congress considers the community an incorporated territory, later to become one of the several states of the Union, Congress may wish to follow the continental territorial model.<sup>94</sup> However, if Congress intends the space community to remain a United States dependency, the insular territorial model may prove a more reasonable route.<sup>95</sup> Finally, the trust model would allow Congress to assist the space community in its initial stages, and eventually to grant the community greater sovereignty over its internal affairs.<sup>96</sup> Each of these models would permit Congress to consider the characteristics of a space community in designing a governing order, although these models may not be able to accommodate the community's unique characteristics. Instead, an entirely new territorial structure may be required.

### III. Congressional Authority to Design a Governing Order

Several constitutional grants of power are helpful in ascertaining congressional authority to design a legal order in space. This authority depends on the nature and purpose of the territory. The nature of a space community is transnational; the purpose is peaceful exploration and exploitation of space resources.<sup>97</sup> In laying a foundation for a prosperous space community, both legislative and judicial functions will be crucial: Congress must have the authority to enact laws to regulate space settlement, and the judiciary will be needed to interpret these laws in the event of disputes. Congress and the judiciary will also require the authority to use alternative dispute resolution procedures in space to minimize the potential ill effects that formal litigation could have upon a volatile environment like a space station.

#### A. Legislative Authority

Congressional authority to regulate particular activities is derived

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92. *See supra* text accompanying notes 78-81.

93. *See supra* text accompanying notes 55-92.

94. *See supra* text accompanying notes 55-61.

95. *See supra* text accompanying notes 62-77.

96. *See supra* text accompanying notes 78-86.

97. *See supra* text accompanying notes 45, 48 & *infra* note 171.

from the Constitution.<sup>98</sup> Discussed below are five grants of constitutional power which allow Congress to regulate space activities: the power to implement treaties, to regulate federal territories and property, to regulate interstate and foreign commerce, to maintain national defense, and to define crimes on the high seas. This Note also discusses how each grant of authority is useful in ascertaining Congress' plenary power to design a legal order for the space settlement.

### 1. Treaty Power

Article II, section 2 of the Constitution states that "[the Executive] shall have Power, by and with the Advice and Consent of the Senate to make Treaties, provided two thirds of the Senators present concur . . . ."<sup>99</sup> Article I, section 10 of the Constitution provides that "[n]o State shall enter into any Treaty, Alliance, or Confederation . . . ."<sup>100</sup> The federal government thus has the exclusive power to enter into treaties.<sup>101</sup> When ratified, these treaties supersede inconsistent state laws<sup>102</sup> by virtue of the Supremacy Clause.<sup>103</sup>

Congress' role in regard to treaties depends on whether or not the treaty is "self-executing."<sup>104</sup> If the treaty is considered self-executing, the Senate may simply ratify the treaty to incorporate it into the laws of the United States.<sup>105</sup> If the treaty is not deemed self-executing,<sup>106</sup> Congress must enact implementing legislation to make the treaty enforceable.<sup>107</sup> In both cases, however, Congress is responsible for promulgating

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98. See *Marbury v. Madison*, 5 U.S. (1 Cranch) 137, 176-79 (1803); see also J. NOWAK, R. ROTUNDA & J.N. YOUNG, *CONSTITUTIONAL LAW* 111 (3d ed. 1986) [hereinafter J. NOWAK].

99. U.S. CONST. art. II, § 2, cl. 2.

100. U.S. CONST. art. I, § 10, cl. 1.

101. See the Supreme Court's discussion of exclusive federal power over treaties in *Hines v. Davidowitz*, 312 U.S. 52, 62-63 (1941).

102. *United States v. Pink*, 315 U.S. 203, 230-31 (1942).

103. U.S. CONST. art. VI, cl. 2.

104. A self-executing treaty does not require Congress to enact legislation before it becomes effective. See *United States v. Postal*, 589 F.2d 862, 875 (5th Cir.), cert. denied 444 U.S. 831 (1979). The subject of the treaty is usually adequately covered in the treaty to enable all three branches of government to enforce it. Thus, enforcement can occur without prior "governmental action that under the Constitution can be taken only by Congress." *Id.* at 877. Upon ratification by the Senate, the treaty is incorporated into the laws of the United States. *Westar Marine Serv. v. Heerema Marine Contractors*, 621 F. Supp. 1135, 1137 (N.D. Cal. 1985). The American Law Institute suggests that self-executing treaties are effective as the domestic law of the United States and supersede inconsistent provisions of earlier federal or state laws. *RESTATEMENT (SECOND) OF FOREIGN RELATIONS* § 141 (1981).

105. See *Westar Marine Serv.*, 621 F. Supp. at 1137.

106. Whether a treaty is self-executing is "a matter of interpretation to be determined by the courts . . . [by looking] to the intent of the signatory parties as manifested by the language of the instrument, and, if the instrument is uncertain, recourse must be had to the circumstances surrounding its execution." *Diggs v. Richardson*, 555 F.2d 848, 851 (D.C. Cir. 1976).

107. See *Frolova v. Union of Soviet Socialist Republics*, 761 F.2d 370, 373 (7th Cir. 1985); *Hopson v. Kreps*, 622 F.2d 1375, 1380 (9th Cir. 1980). A non-self-executing treaty "affords a

laws consistent with the treaties.<sup>108</sup>

The United States has entered into four treaties which regulate space activities: the "Outer Space Treaty,"<sup>109</sup> the Agreement on the Rescue of Astronauts and the Return of Objects Launched into Outer Space,<sup>110</sup> the "Liability Convention,"<sup>111</sup> and the "Registration Convention."<sup>112</sup> These treaties are not self-executing where they require congressional legislation before having full effect.<sup>113</sup> Where these treaties are not self-executing, Congress can classify its space legislation as necessary to implement them. Until Congress enacts the necessary space legislation, these treaties may not be fully enforceable and may not act as a source of congressional authority in space.<sup>114</sup>

Congressional authority to regulate space activity under the Treaty Clause might also depend on whether Congress classifies the space station as a territory or as personal property.<sup>115</sup> Under the Outer Space Treaty, a nation cannot claim sovereignty in space;<sup>116</sup> thus, the United States would violate the Treaty if it mapped out a *territorial* area subject to its sovereignty. Yet, pursuant to the same Treaty, a nation has jurisdiction and control over its space *objects* and *personnel*.<sup>117</sup> The Treaty's two provisions can be read consistently to allow a nation to retain control over the activities occurring inside of its space object so long as it does not interfere with other nations' use of outer space.<sup>118</sup> It therefore would be more practical to define congressional authority in terms of the space objects and everything, including persons, relating to those objects, thus giving Congress the power necessary to govern properly American activity in space.

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constitutional basis for an act of Congress superseding inconsistent provisions of the laws of the several states." RESTATEMENT (SECOND) OF FOREIGN RELATIONS, *supra* note 104, § 141(2)(b).

108. *See* *Neely v. Henkel* (No. 1), 180 U.S. 109, 121 (1901).

109. The Outer Space Treaty, *supra* note 9.

110. Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, *entered into force* Dec. 3, 1968, 19 U.S.T. 7570, T.I.A.S. No. 6599, 672 U.N.T.S. 119.

111. The Liability Convention, *supra* note 31.

112. Registration of Objects Launched into Outer Space, *entered into force* Sept. 15, 1976, 28 U.S.T. 695, T.I.A.S. No. 8480, 1023 U.N.T.S. 15 [hereinafter *The Registration Convention*].

113. *See, e.g.,* The Outer Space Treaty, *supra* note 9, art. VIII ("A State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body."); Note, *Dispute Resolution in Space*, 7 HASTINGS INT'L & COMP. L. REV. 211, 215 (1983).

114. *See supra* note 107.

115. *See infra* notes 116-118 & 131-132 and accompanying text.

116. The Outer Space Treaty, *supra* note 9, art. II.

117. *Id.* art. VIII.

118. *See* Smith, Lopatkiewicz & Rothblatt, *Legal Implications of a Permanent Manned Presence in Space*, 85 W. VA. L. REV. 857, 862-63 (1983).

By enacting legislation consistent with the Outer Space Treaty, Congress could regulate space activities and prevent the violation of provisions of other space treaties. For example, under the Liability Convention, a nation is internationally liable for any damage caused by its space objects.<sup>119</sup> Thus, the United States has a strong interest in monitoring all space objects "launched" by both the public and private sectors.

Once a treaty becomes effective, the federal government may allocate the enforcement power within its domestic constitutional order.<sup>120</sup> Thus, the federal government may delegate authority among the several states, or likewise, it may decide to retain all authority if necessary to ensure enforcement of the treaty.

## 2. Territorial and Proprietary Authority

The Territory and Property Clause of the Constitution permits Congress to "make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States."<sup>121</sup> Under its territorial authority, Congress has plenary power to govern and legislate for territories of the United States, and to establish territorial governments.<sup>122</sup> Under its proprietary authority, Congress may make all laws necessary to regulate property belonging to the United States.<sup>123</sup>

### a. Territorial Authority

Congress may delegate to a territorial government all powers necessary to self-governance—legislative, executive, and judicial—provided Congress retains the right to revise, alter, and revoke territorial decisions.<sup>124</sup> For each territory, Congress enacts an "organic act" which serves as a constitution. In promulgating the organic acts for unincorporated

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119. The Liability Convention, *supra* note 31, art. II. See also The Outer Space Treaty, *supra* note 9, arts. II & III.

120. RESTATEMENT (SECOND) OF FOREIGN RELATIONS, *supra* note 104, § 402 comment h, at 101.

121. U.S. CONST. art. IV, § 3, cl. 2.

122. *Binns v. United States*, 194 U.S. 486, 491 (1904). See also 2 C. ANTIEAU, MODERN CONSTITUTIONAL LAW 350 (1969):

Congress can do for one of the federal territories, dependencies, or possessions whatever a state might do for itself or one of its political subdivisions, since over such dependencies the nation possesses the sovereign powers of the general government plus the powers of a local or a state government in all cases where legislation is possible.

123. U.S. CONST. art. IV, § 3, cl. 2. See *Nixon v. Administrator of Gen. Servs.*, 408 F. Supp. 321, 355 n.49 (D.D.C. 1976), *aff'd*, 433 U.S. 425 (1977).

124. C. ANTIEAU, *supra* note 122, at 350. See also *District of Columbia v. John R. Thompson Co.*, 346 U.S. 100, 109 (1953).

rated territories<sup>125</sup> such as Puerto Rico, Guam, and the Virgin Islands, Congress has discretion to exclude selective provisions of the Federal Constitution.<sup>126</sup> Certain provisions of the Constitution are deemed “fundamental” or “natural”, however, and may not be denied to the people of the territories.<sup>127</sup> In determining what is fundamental or natural, Congress may look to the territory’s history and customs and tailor a constitutional provision to the territory’s cultural needs.<sup>128</sup>

The first space community will share many characteristics of a federal territory. The space community will initially depend on earthside resources and congressionally dictated means of assistance for survival. In addition, as citizens spend more time in space, ties to their original state of domicile will become more attenuated and the citizens will begin to consider the space community their home. Because of diminished ties to their state of origin, community members will look to the federal gov-

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125. Unincorporated territories are those on which Congress has no intention of conferring statehood status and which will remain a United States dependency. *See supra* text accompanying notes 88-91.

126. In *Hooven & Allison Co. v. Evatt*, 324 U.S. 652 (1945), *disapproved on other grounds sub nom. Limbach v. Hooven & Allison Co.*, 466 U.S. 353 (1984), the Supreme Court held that:

Congress is not subject to the same constitutional limitations, as when it is legislating for the United States. . . . And in general the guaranties of the Constitution, save as they are limitations upon the exercise of executive and legislative power when exerted for or over our insular possessions, extend to them only as Congress, in the exercise of its legislative power over territory belonging to the United States, has made those guaranties applicable.

324 U.S. at 674. *See also* *Murphy v. Ramsey*, 114 U.S. 15, 44 (1885).

127. Although the Supreme Court has not actually ruled which provisions must apply, in *Downes v. Bidwell*, 182 U.S. 244, 282 (1901), the Court suggested that “there may be a distinction between certain natural rights enforced in the Constitution by prohibitions against interference with them, and what may be termed artificial or remedial rights, which are peculiar to our system of jurisprudence.” The provisions which Congress probably could not deny to the people of the territories would include the First Amendment, U.S. CONST. amend. I, and the Contract and Bill of Attainder Clauses, U.S. CONST. art. I, § 10, cl. 1, since all of these provisions technically prohibit Congress or the states from passing any law affecting them. *Downes*, 182 U.S. at 277. Nevertheless, Congress and states have passed laws affecting even these provisions. *See, e.g.*, *Consolidated Edison Co. v. Public Service Comm’n*, 447 U.S. 530, 535 (1980) (recognizing a state’s authority to regulate speech in narrow circumstances); *United States Trust Co. v. New Jersey*, 431 U.S. 1, 14-16 (1977) (contract clause prohibition not absolute); *Dennis v. United States*, 341 U.S. 494, 515-17 (1951) (upholding the constitutionality of a federal statute making it a crime to advocate the overthrow or destruction of the United States government despite the statute’s effect on an individual’s first amendment rights); *Cantwell v. Connecticut*, 310 U.S. 296, 303-04 (1940) (right of free exercise of religion is not absolute; Congress may regulate conduct to protect society).

128. *Endleman v. United States*, 86 F. 456, 459 (9th Cir. 1898).



ernment for assistance and guidance in regulating space activity.<sup>129</sup> Thus, as with United States territories,<sup>130</sup> it may be desirable that the federal government establish a territorial government in space and delegate to it the proper authority to make decisions affecting the space community. By doing so, Congress would retain ultimate authority over space activity, and could structure a government to satisfy the needs of the community members.

Congressional classification of the space community as a territory, however, might violate the Outer Space Treaty provision prohibiting nations from establishing territories in space.<sup>131</sup> The United States may establish a space community under the space treaties, provided that the United States does not claim exclusive control over an area in space.<sup>132</sup> Therefore, although Congress could analogize the space community to a territory in establishing a space government and tailoring the government's structure to the needs of the space environment, it may be more prudent to classify the legislation under proprietary authority to avoid violation of the space treaties.

#### b. Proprietary Authority

The Supreme Court has interpreted "property" in the Territory and Property Clause to include all "personal and real property rightfully belonging to the United States."<sup>133</sup> Under this grant of authority, Congress may dispose of or authorize the use of federal property as it deems necessary,<sup>134</sup> and may deny to certain persons the use of federal property if necessary to protect that property.<sup>135</sup>

In the American space station, most, if not all, property initially will be federally owned.<sup>136</sup> The federal government has financed most of the

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129. In the continental territories, the territorial population relied on federal funding to assist its progress toward sovereignty. E. POMEROY, *supra* note 57, at 100. Even though the population resented, at times, the federal government's power, they still wanted its money. *Id.*

In space, the community may also rely on federal assistance and yet resent federal intervention. However, until the space community becomes capable of supporting itself, it may have little choice but to succumb to federal control.

130. *See supra* text accompanying notes 55-96.

131. *See supra* notes 116-117 and accompanying text.

132. *Id.*

133. *Ashwander v. Tennessee Valley Auth.*, 297 U.S. 288, 331 (1936) (quoting 2 J. STORY, COMMENTARIES ON THE CONSTITUTION OF THE UNITED STATES §§ 1325-1326 (5th ed. 1905)).

134. By virtue of the Necessary and Proper Clause, U.S. CONST. art. 1, § 8, cl. 18, Congress would have the proper authority to act accordingly. *Cf. infra* note 155 and accompanying text.

135. C. ANTIEAU, *supra* note 122, at 318.

136. N.Y. Times, Jan. 26, 1984, at A1, col. 3. Other countries, however, will participate with the United State in constructing the space station. *See supra* note 20. This discussion is limited to the financing of the United States share of the station.

space research and work thus far.<sup>137</sup> Although the private sector will increase its investment in space, the government will likely continue to finance most of the space station's construction<sup>138</sup> and therefore will be able to claim a vested proprietary interest in the station. As a property owner, the federal government may make all laws necessary to regulate its property, including the regulation of persons handling or affecting its property.<sup>139</sup>

By contrast, Congress will have limited authority to regulate the personal property of space community members.<sup>140</sup> In space, as on Earth, Congress will not be able to deprive an individual of his or her property without due process of law.<sup>141</sup> As long as certain procedural requirements are met, however, the federal government may regulate the use of space community members' personal property<sup>142</sup> if necessary to protect the government's proprietary interest in the space station and its equipment.<sup>143</sup> Congress may regulate personal matters under its plenary power to make all laws necessary to uphold the purpose and viability of the space station, and to prevent damage to federal property.

c. An Analysis of the Territorial and Proprietary Authority and Their Possible Application in Space

The Territory and Property Clause grants Congress authority to regulate all activities of a space community, whether that community is classified as federal territory or property.<sup>144</sup> However, at first—at least

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137. N.Y. Times, Jan. 26, 1984, at A1, col. 3.

138. Current space policy encourages private investment in space-related ventures. SPINOFF, *supra* note 10, at 42. See also *supra* note 3. However, it appears that this increase in private investment will be aimed at peripheral space activity and not towards the initial construction of the space station. SPINOFF, *supra* note 10, at 42-47. Such activity would include development of new products and methods of production. *Id.* Thus, although the activity inside the space station will be increasingly private, the space station itself will still be federally financed.

139. See *supra* notes 133-135 and accompanying text.

140. Cf. *Loretto v. Teleprompter Manhattan CATV Corp.*, 458 U.S. 419, 426-35 (1982) (the Takings Clause limits governmental restrictions of private property).

141. U.S. CONST. amend. V ("No person shall be . . . deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.").

142. Cf. *Mathews v. Eldridge*, 424 U.S. 319, 334 (1976). The *Mathews* Court stated in its opinion that "[d]ue process,' unlike some legal rules, is not a technical conception with a fixed content unrelated to time, place and circumstances. . . . [D]ue process is flexible and calls for such procedural protections as the particular situation demands." *Id.* (citations omitted); see also *infra* notes 222-225 and accompanying text.

143. See *supra* note 134 & *infra* note 154 and accompanying text.

144. Congressional authority to regulate territory and property under the Constitution is not diminished because of the existence of a treaty. Cf. *Reid v. Covert*, 354 U.S. 1, 17 (1957) (a treaty cannot "amend" the Constitution). A treaty cannot therefore restrict Congress' constitutional authority. However, if Congress does enact a statute which is inconsistent with a treaty, that treaty is void to the extent of the inconsistency. *Id.* at 18. See *Cook v. United*

until the space community consists of more than one module or object—it may be best to classify the station as property. As the community grows and becomes more permanent and better equipped to act independently, the space community could be reclassified as a territory with all the characteristics of a territorial government. At that time, it would be necessary to amend the international space treaties<sup>145</sup> to reflect the increased potential for space settlement. Development in space will therefore require flexible international and domestic law to deal with concerns that may have been unforeseeable when the space treaties were drafted.<sup>146</sup>

### 3. Commerce Clause

The Commerce Clause<sup>147</sup> grants Congress authority to regulate interstate and foreign commerce. Any state statute constituting an “unreasonable burden on interstate commerce” may be held unconstitutional.<sup>148</sup> Almost any commercial activity, even if it occurs entirely within one state, affects interstate commerce.<sup>149</sup> The courts have been liberal in striking down state statutes and municipal ordinances which conflict with federal commerce regulations.<sup>150</sup>

Activity occurring in the space station definitely will be of an interstate or international character.<sup>151</sup> Products manufactured in the space factories will be distributed nationally and worldwide. The fact that transportation will be necessary to travel from Earth to space also suggests that there will be an inherent interstate and international aspect to

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States, 288 U.S. 102, 119 (1933); *Voorhees v. Fischer & Krecke*, 697 F.2d 574, 575-76 (4th Cir. 1983); *see also supra* text accompanying notes 116-117 & 131-132.

145. The spirit underlying the space treaties permits the launching and placement of objects in space and on the Moon; however, the treaties prohibit claims of national sovereignty over an area in space. Under one possible interpretation of the treaties, vehicles or objects could occupy an area in space so long as occupation did not interfere with other nations' access to the area surrounding the vehicle or space object. This interpretation is consistent with the manner in which nations have treated ships sailing on the high seas. *See infra* text accompanying notes 208-216.

146. *See infra* note 286.

147. U.S. CONST. art. I, § 8, cl. 3 (Congress shall have the power “[t]o regulate Commerce with foreign nations, and among the several States, and with the Indian tribes.”).

148. *Raymond Motor Transp., Inc. v. Rice*, 434 U.S. 429, 439 (1978).

149. *See, e.g., Hodel v. Virginia Surface Mining & Reclamation Ass'n*, 452 U.S. 264, 276-77 (1981); *Fry v. United States*, 421 U.S. 542, 547 (1975) (“Even activity that is purely intrastate in character may be regulated by Congress, where the activity, combined with like conduct by others similarly situated, affects commerce among the States or with foreign nations.”).

150. *See, e.g., Garcia v. San Antonio Metro. Transit Auth.*, 469 U.S. 528, 550-54 (1985) (greater federal authority may be permitted because the political process ensures that federal laws will not unduly burden the states).

151. *See March, Authority of the Space Station Commander: The Need for Delegation*, 6 GLENDALE L. REV. 73, 84 (1984).

space activities.<sup>152</sup> Furthermore, people living in the space community<sup>153</sup> will be from many states and nations; thus, commercial transactions inside the station will invoke the Commerce Clause.

Congress will have the constitutional authority via the Commerce Clause to regulate *commercial* space activities; however, it is not as clear whether the Commerce Clause would grant Congress authority to regulate or control *noncommercial* activities. Regulation of both commercial and noncommercial activities in space may prove imperative to protect United States commercial interests.<sup>154</sup> Under the Necessary and Proper Clause,<sup>155</sup> Congress may extend its authority to include personal matters if doing so is necessary to execute its interstate and foreign commerce regulations. The unique and important nature of the space community's activity may require Congress to extend its authority over *all* space activity.<sup>156</sup>

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152. The Federal Aviation Act of 1958, 49 U.S.C. §§ 1301-1557 (1982 & Supp. III 1985), declares that "[t]he United States . . . possess[es] and exercise[s] complete and exclusive national sovereignty in the airspace of the United States . . ." *Id.* § 1508(a). The Act also prohibits states from unreasonably burdening and discriminating against interstate commerce by its regulation of airspace activity. *Id.* § 1513(d) (Supp. III 1985).

153. As discussed earlier, *see supra* note 20, initially space station crew members will only reside in the station for periods of approximately three months. Thus, their ties to Earth will continue to exist. However, as the space community expands and becomes more permanent, people will live in space for longer periods of time, and possibly at some point will even be born in space. *See generally* Costello, *Spacedwelling Families: The Projected Application of Family Law in Artificial Space Living Environments*, 15 SETON HALL L. REV. 11 (1984). When space community members consider space their domicile, then it may be time to consider the space community as having state-like or territorial characteristics, capable of giving its members a new identity. At such time, commercial transactions among space community members would no longer be interstate or international in nature, but rather intracommunity—intraterritorial or intrastate.

154. Since everyone at the space station will be involved in some type of work and the product of that work will be distributed via interstate or foreign commerce, the authority to regulate the personal lives of the workers may also need to be included within congressional authority under the Commerce Clause. A problem arising in a worker's personal life might affect her productivity or lack thereof, thus indirectly affecting interstate commerce and its continued existence in space. Therefore, congressional authority over both commercial and personal matters in space may be consistent with the Constitution.

155. U.S. CONST. art. I, § 8, cl. 18 (Congress shall have the power "[t]o make all Laws which shall be necessary and proper for carrying into Execution the foregoing Powers, and all other Powers vested by this Constitution in the Government of the United States, or in any Department or Officer thereof."). The Court has given a broad interpretation to the Clause:

By the settled construction and the only reasonable interpretation of this clause, the words "necessary and proper" are not limited to such measures as are absolutely and indispensably necessary, without which the powers granted must fail of execution; but they include all appropriate means which are conducive or adapted to the end to be accomplished, and which in the judgment of Congress will most advantageously effect it.

"Legal Tender Case," *Juilliard v. Greenman*, 110 U.S. 421, 440 (1884).

156. Even though extension of congressional authority may appear far-reaching, the nature and significance of the space community's activity may require this result. The space station

#### 4. *National Defense*

The Constitution grants national defense authority to the federal government.<sup>157</sup> Congress has the power to declare war and to raise and support the armed forces.<sup>158</sup> Under this grant, congressional authority is limited to the military aspects of the Nation's foreign policy. Since the Constitution explicitly restricts the states' power to engage in war and raise armies,<sup>159</sup> congressional authority over matters concerning national defense does not infringe upon the rights of the states.<sup>160</sup>

An American presence in space will provide an opportunity for the federal government to attempt application of many technological and strategic innovations. The implementation of a program like "Star Wars"<sup>161</sup> is one possibility. Although the use of offensive arms in space is expressly prohibited by international treaties,<sup>162</sup> the United States continues to research the possibility of moving the war theater from Earth to space, arguably as a defensive measure.

Another possible national security measure would involve placing a module in the space station to house government-controlled reconnaissance operations.<sup>163</sup> From this module, the United States could use remote sensing devices to monitor activity occurring on Earth so that the

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will be a critical depot for serving the lunar and Martian spaceports and commercial interests as well as for defending the United States and its interests both on Earth and in space. Moreover, because of the limited resources initially attainable in space, there will not be the same potential for substituting means to accomplish a goal as there is on Earth thereby making it more imperative to regulate those means to ensure maximum utility.

157. See *infra* notes 158-160, and accompanying text.

158. U.S. CONST. art. I, § 8, cls. 11-16. This authority is parallel to that held by the President of the United States over foreign affairs. See U.S. CONST. art. II, § 2, cl. 1 ("The President shall be Commander in Chief of the Army and Navy of the United States, and of the Militia of the several States, when called into the actual Service of the United States.").

159. U.S. CONST. art. I, § 10, cl. 3 provides:

No State shall, without the Consent of Congress, . . . keep Troops, or Ships of War in time of Peace, enter into any Agreement or Compact with another State, or with a foreign Power, or engage in War, unless actually invaded, or in such imminent Danger as will not admit of delay.

160. U.S. CONST. amend. X ("The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people."). This principle of federalism concerns the balance of power between the federal and state governments and protects state sovereignty from unnecessary federal interference. See generally, Scheiber, *Federalism and the Constitution: The Original Understanding*, in AMERICAN LAW AND THE CONSTITUTIONAL ORDER 85 (L. Friedman & H. Scheiber eds. 1978).

161. "Star Wars" is the popular name for the Reagan Administration's Strategic Defense Initiative proposal. This proposal advocates the placement of a defense shield in space to prevent a nuclear attack on the United States.

162. See, e.g., The Outer Space Treaty, *supra* note 9, art. IV; Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, *entered into force* Oct. 10, 1963, 14 U.S.T. 1313, T.I.A.S. No. 5433, 480 U.N.T.S. 43; see also *supra* note 47.

163. The defense module will maximize the strategic advantages of its space location from which the United States could store arms to be used in defense of American interests on Earth as well as in space. With the use of reconnaissance devices and satellites, the module would be

United States could receive advance warning of a military attack. Like "Star Wars", this proposal would not violate any treaty as long as it involved a purely defensive use of military resources.

Congressional authority over national defense may also give Congress broad power to enact different legal standards for space. On Earth, the federal government has greater authority to regulate the activities of its military personnel than it has over the activities of civilians.<sup>164</sup> If necessary to protect the Nation, the federal government may subordinate the civil liberties of its military personnel.<sup>165</sup> Accordingly, special civil and criminal procedures apply to military personnel, especially in time of war, when national security interests are paramount.<sup>166</sup> If the space station and space community members are used for military purposes, Congress may have greater authority to deviate from civilian standards in order to uphold the interest of national security in space and on Earth.<sup>167</sup>

### 5. *The High Seas Analogy*

The Constitution grants Congress the authority "to define and punish . . . Felonies committed on the high Seas, and Offences against the Law of Nations."<sup>168</sup> This provision reflects the Framers' intent that the federal government have primary authority to define and punish crimes in transnational areas such as the high seas.<sup>169</sup>

Congress has acknowledged an analogy between admiralty and

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able to monitor activities on Earth, including those occurring in other nations. See Smith, Lopatkiewicz & Rothblatt, *supra* note 118, at 865-67.

164. The Constitution gives Congress power to "make Rules for the Government and Regulation of the land and naval Forces." U.S. CONST. art. I, § 8, cl. 14. In exercising this authority, Congress has promulgated the Uniform Code of Military Justice, 10 U.S.C. §§ 801-940 (1982), which regulates conduct on military bases and installations.

165. Congress is still subject to constitutional limitations when exercising its war powers. C. ANTIEAU, *supra* note 122, at 326. Congress may not deprive individuals of their fundamental liberties, particularly those included in the Bill of Rights, merely because of war powers. *Id.* However, in times of war, the Supreme Court has been more willing to overlook congressional deprivation of fundamental liberties. See, e.g., *Korematsu v. United States*, 323 U.S. 214 (1944) (upholding World War II internment of American citizens of Japanese ancestry).

166. The Uniform Code of Military Justice applies to military personnel. 10 U.S.C. § 802(a) (1982). Under this Code, military personnel may be court-martialed and sentenced for crimes which do not apply to civilians and are defined under the Code at sections 877 to 934.

167. By virtue of the Necessary and Proper Clause, U.S. CONST. art. I, § 8, cl. 18, Congress may enact laws necessary to execute its authority under article I, section 8, clauses 11-16 of the Constitution. See *supra* note 155 and accompanying text.

168. U.S. CONST. art. I, § 8, cl. 10.

169. Cf. *United States v. Arjona*, 120 U.S. 479, 487 (1887) (congressional authority to define and punish offenses against the "Law of Nations" does not prevent a state from enacting laws to punish the same act when it may be an offense against the state's authority as well as that of the United States).

space law by extending maritime criminal jurisdiction into space.<sup>170</sup> In doing so, Congress recognizes that both space and the high seas are considered transnational, that all nations act on equal footing with respect to travel through those areas, and that neither area is subject to national sovereignty, as such dominion would be inconsistent with the area's transnational nature.<sup>171</sup> By this analogy, Congress also recognizes its authority to "define and punish" felonies committed in space.<sup>172</sup> Giving Congress, rather than state legislatures, the power to "define and punish" crimes in space is consistent with the Constitution's grant of power to the federal government in other areas that concern the United States relations with other nations, such as foreign affairs,<sup>173</sup> foreign commerce,<sup>174</sup> and national defense.<sup>175</sup>

At this time, congressional authority under this grant explicitly encompasses only criminal offenses. Insurmountable constitutional issues might arise if Congress attempted to extend its authority under this grant to include civil matters;<sup>176</sup> therefore, Congress will have to rely on other constitutional grants of power to regulate civil matters.

#### 6. *Summary on Legislative Authority*

The five bases of constitutional authority are not absolute, although some convey more power than others. The strongest sources of congressional authority to regulate space activity are found in the provisions concerning the federal treaty power, the power to regulate territorial and proprietary interests, and the commerce power. These three powers provide the basis for asserting a strong federal interest in maintaining and securing the continued existence of an American space station. Together, the five constitutional provisions are significant authority for legislation establishing a space community and regulating space activity. These provisions, taken together, also may be sufficient to extend congressional authority to *all* space activity.

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170. The special maritime and territorial jurisdiction of the United States includes jurisdiction over:

Any vehicle used or designed for flight or navigation in space and on the registry of the United States pursuant to the [Outer Space Treaty] while that vehicle is in flight, which is from the moment when all external doors are closed on Earth following embarkation until the moment when one such door is opened on Earth for disembarkation . . . .

18 U.S.C. § 7(6) (1985).

171. *See supra* notes 40, 47 & 48 and accompanying text.

172. By extending its authority under article I, section 8, clause 10 of the Constitution, Congress included space crimes within its power. *See* 18 U.S.C. § 7(6) (1982).

173. U.S. CONST. art. II, § 2, cl. 2.

174. U.S. CONST. art. I, § 8, cl. 3.

175. U.S. CONST. art. I, § 8, cls. 11-16.

176. *See supra* note 98 and accompanying text.

## B. Judicial Authority

In implementing the federal policy of space settlement, the judiciary will have the important role of interpreting space regulations and applying them to situations that were possibly unforeseeable at the time Congress enacted the legislation. Before a federal court may hear a particular controversy, it must derive its subject matter jurisdiction from either constitutional<sup>177</sup> or congressional authorization.<sup>178</sup> Federal court jurisdiction may be exclusive or concurrent with that of state courts.<sup>179</sup> Whereas concurrent jurisdiction permits state judges to decide issues of federal law, and thereby exert influence over the development of federal common law, exclusive federal jurisdiction protects the uniform development and application of federal law and can allow for expedient<sup>180</sup> and

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177. *United States v. Morton*, 467 U.S. 822, 828 (1984).

178. The Constitution confers original and appellate jurisdiction on federal courts. U.S. CONST. art. III, §§ 1-2. In certain circumstances, Congress may regulate the federal courts' jurisdiction. U.S. CONST. art. I, § 8, cl. 9. However, in order for a federal court to hear a controversy, it must derive its authority from either the Constitution or a federal law because of the federal judiciary's limited jurisdiction. *Owen Equip. & Erection Co. v. Kroger*, 437 U.S. 365, 374 (1978) ("It is a fundamental precept that federal courts are of limited jurisdiction. The limits upon federal jurisdiction, whether imposed by the constitution or by Congress must be neither disregarded nor evaded.").

Article III of the Constitution confers Supreme Court jurisdiction over certain defined matters. U.S. CONST. art. III, § 2. Article III also grants Congress the power to vest judicial authority in such inferior courts as Congress may from time to time ordain and establish. U.S. CONST. art. III, § 1. This complements Congress' power, under article I, section 8, clause 9, "[t]o constitute Tribunals inferior to the supreme Court."

In *Lockerty v. Phillips*, 319 U.S. 182 (1943), the Court stated that "the Congressional power to ordain and establish inferior courts includes the power 'of investing them with jurisdiction either limited, concurrent, or exclusive, and of withholding jurisdiction from them in the exact degrees and character which to Congress may seem proper for the public good.'" *Id.* at 187 (citations omitted) (quoting Justice Daniel in *Cary v. Curtis*, 44 U.S. (3 How.) 236, 245 (1845)).

Congress has exercised its authority to establish federal courts, some of which are special federal courts, to hear matters exclusive of state courts. *See, e.g.*, 28 U.S.C. §§ 1334, 1338 (1982) (bankruptcy and patent courts); *see also infra* notes 180-181 and accompanying text.

More recently, Congress extended its special maritime and territorial jurisdiction to include "[a]ny place outside the jurisdiction of any nation with respect to an offense by or against a national of the United States." 18 U.S.C. § 7(7) (Supp. III 1985). This extension may permit a federal court to hear controversies arising in space, but not covered by Congress' previous enactment of space jurisdiction over crimes. *See* 18 U.S.C. § 7(6) (1985); *see also infra* notes 186-188 and accompanying text.

179. In *Charles Dowd Box Co. v. Courtney*, 368 U.S. 502 (1962), the Court stated that "[c]oncurrent jurisdiction has been a common phenomenon in our judicial history, and exclusive federal court jurisdiction over cases arising under federal law has been the exception rather than the rule." *Id.* at 507-08. The Court would "affirm [concurrent] jurisdiction, where it is not excluded by express provision, or by incompatibility in its exercise arising from the nature of the particular case." *Id.* at 508 (quoting Justice Bradley in *Clafen v. Houseman*, 93 U.S. 130, 136 (1876)).

180. For example, since the nature of bankruptcy litigation requires speedy adjudication to relieve the debtor of the threat of foreclosure and the creditors of the possibility of losing their



expert<sup>181</sup> dispute resolution of space-related conflicts that might not be possible in state courts.

### 1. *Treaties and Federal Questions*

The first basis for federal jurisdiction over space controversies is treaty and federal question jurisdiction. Article III, section 2 of the Constitution confers on the federal courts jurisdiction over cases involving treaties, as well as those involving federal questions.<sup>182</sup> Federal courts may hear any controversy relating to and brought under a federal law or treaty in which the United States is a party, as long as the federal question appears on the face of a well-pleaded complaint.<sup>183</sup> In this regard, federal jurisdiction is concurrent with that of the states, and in most instances, the plaintiff chooses the forum.<sup>184</sup>

Judicial interpretation of treaties and of implementing legislation falls within the federal courts' subject matter jurisdiction.<sup>185</sup> Congress has made its first attempt to implement the Outer Space Treaty by conferring on the federal courts jurisdiction over criminal offenses committed in space.<sup>186</sup> According to the statute, federal jurisdiction exists only over crimes committed inside of "[a]ny *vehicle* used or designed for flight or navigation in space . . . ."<sup>187</sup> Whether the statute will apply to crimes committed in a space station or outside of the space vehicle is still uncertain. To be safe, Congress should amend the statute to extend jurisdiction to crimes committed in space stations and outside of space vehicles.<sup>188</sup> As more activity occurs in space, Congress will also need to broaden federal jurisdiction to include civil matters arising in space. Such

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lended assets, Congress set up federal courts handling these matters exclusively. 28 U.S.C. § 1334 (1982).

181. Certain subjects, such as patent and copyright law, require expert lawyers and judges to handle the cases so as to facilitate the litigation. For this reason, Congress established a special federal court handling these matters exclusively. 28 U.S.C. § 1338 (1982).

182. U.S. CONST. art. III, § 2, cl. 1(b); 28 U.S.C. § 1331 (1982).

183. *Louisville & Nashville Ry. Co. v. Mottley*, 211 U.S. 149, 153 (1908).

184. The federal removal statute, 28 U.S.C. § 1441 (1983), permits defendants to remove a civil action from a state court to a federal district court when that district court has original jurisdiction over the alleged controversy.

185. If a treaty is self-executing, controversies will be viewed as arising from the treaty, and thus clearly within the federal courts' jurisdiction. *Hopson v. Kreps*, 622 F.2d 1375, 1380 (9th Cir. 1980). See *supra* notes 104-108 and accompanying text. Even if the treaties are deemed not self-executing, the implementing legislation enacted by Congress would invoke federal question jurisdiction if a controversy arose regarding such legislation. *Hopson v. Kreps*, 622 F.2d at 1380. See also L. HENKIN, *FOREIGN AFFAIRS AND THE CONSTITUTION* 159 (1972).

186. 18 U.S.C. § 7(6) (Supp. III 1985). See *supra* note 170 and accompanying text.

187. 18 U.S.C. § 7(6) (Supp. III 1985) (emphasis added).

188. The 1984 amendment to the provisions regarding special maritime and territorial jurisdiction, 18 U.S.C. § 7(7) (Supp. III 1985), may cover crimes committed outside of the space vehicle as long as the crimes affect nationals of the United States. See *supra* note 178 and accompanying text.

an extension would be consistent with the Outer Space Treaty's jurisdictional provision.<sup>189</sup>

Although federal subject matter jurisdiction over treaties and federal questions is concurrent with that of the states, Congress may decide to confer exclusive federal jurisdiction over the enforcement of the space treaties since they are, by nature, extremely important in the realm of international affairs.<sup>190</sup> In addition, Congress may find it necessary to require federal jurisdiction over space activity—regardless of whether the federal question is on the face of a well-pleaded complaint<sup>191</sup>—to ensure exclusive federal jurisdiction.

## 2. *Diversity of Citizenship*

The second basis for federal court jurisdiction over space controversies is diversity of citizenship. Article III, section 2 of the Constitution confers jurisdiction on federal courts over “[c]ontroversies between two or more States; between a State and Citizens of another State; between citizens of different States, . . . and between a State, or the Citizens thereof, and foreign States, Citizens or Subjects.” Congress has added to diversity jurisdiction a \$10,000 amount in controversy requirement.<sup>192</sup> The amount in controversy provision reduces the burden on the federal courts,<sup>193</sup> while reserving an impartial forum for controversies involving significant stakes.<sup>194</sup>

The Framers' intent in including such a jurisdictional vehicle in the Constitution was to permit people of diverse origins to litigate a controversy in an impartial trial setting rather than compel them to litigate in a state court subject to local biases.<sup>195</sup> Since people from many states and nations, and eventually from different space communities, will live in space, it is important to provide an impartial forum free from regional bias. Diversity of citizenship jurisdiction would provide such a forum and would prevent regional interference with the United States foreign policy.

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189. Article VIII of The Outer Space Treaty, *supra* note 9, provides that “[a] State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body.”

190. The space treaties protect against a nation's establishment of a space colony which might threaten the global balance of political and economic power. *See, e.g.*, The Outer Space Treaty, *supra* note 9, art. II.

191. *See supra* note 183 and accompanying text.

192. 28 U.S.C. § 1332 (1982). The value of the remedy sought must exceed \$10,000.

193. *Horton v. Liberty Mut. Ins. Co.*, 367 U.S. 348, 350-51 (1961).

194. *See infra* note 195 and accompanying text.

195. *See Pease v. Peck*, 59 U.S. (18 How.) 595, 599 (1856).

### 3. Admiralty Analogy

The third basis for federal court jurisdiction in space is provided by analogy to admiralty law. Federal courts have jurisdiction over admiralty cases.<sup>196</sup> This jurisdiction sometimes is exclusive,<sup>197</sup> but usually is concurrent with that of the state courts.<sup>198</sup> For a cause of action to lie in the federal courts, the wrong complained of must occur on navigable waters<sup>199</sup> and have a sufficient relationship to traditional maritime activities.<sup>200</sup> If there is not a sufficient relationship to such activities, then the party must rely on another jurisdictional vehicle, such as federal question<sup>201</sup> or diversity of citizenship,<sup>202</sup> to have the matter heard in a federal court.<sup>203</sup>

The similarities between the conditions on the high seas and those in space<sup>204</sup> make it reasonable to structure space jurisdiction after the pattern of admiralty. Although it is impossible to divine the Framers' intent regarding space jurisdiction, the analogy to admiralty jurisdiction currently is controlling.<sup>205</sup> Congress has extended maritime criminal jurisdiction to include crimes committed in space,<sup>206</sup> rather than conferring space jurisdiction via an independent statute. If Congress' analogy is constitutionally valid, then Congress may confer space jurisdiction on

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196. U.S. CONST. art. III, § 2; 28 U.S.C. § 1333 (1982).

197. Federal subject matter jurisdiction over cases of admiralty is exclusive when it pertains to in rem proceedings. *The Moses Taylor*, 71 U.S. (4 Wall.) 411, 431 (1866). See E. JHIRAD, A. SANN, B. CHASE & M. CHYNSKY, 1 *BENEDICT ON ADMIRALTY* § 124, at 8-11 (7th ed. 1985) [hereinafter *BENEDICT ON ADMIRALTY*]. In rem proceedings usually concern controversies regarding the vessel itself, for example, the seaworthiness of the ship.

In rem proceedings are within the federal court's exclusive jurisdiction because such proceedings were not considered a common-law remedy at the time the Constitution was adopted. *Id.* § 124, at 8-13. The saving to suitors clause of the Judiciary Act and of the present procedural statute, 28 U.S.C. § 1333 (1982), expressly reserves the right to seek common-law remedies in other forums. *BENEDICT ON ADMIRALTY*, *supra*, § 124, at 8-12, 8-13.

198. States have concurrent jurisdiction by virtue of the "saving to suitors" clause, 28 U.S.C. § 1333 (1982). See *supra* notes 179 & 197 and accompanying text.

199. In defining "navigable waters," most courts have used the *Daniel Ball* definition: use of rivers or other waters as a highway of interstate or foreign commerce. *The Daniel Ball*, 77 U.S. (10 Wall.) 557, 563 (1871).

200. "[A]n accident between two vessels in navigable waters bears a sufficient relationship to traditional maritime activity to fall within federal admiralty jurisdiction." *Foremost Ins. Co. v. Richardson*, 457 U.S. 668, 669, 674 (1982). According to *Kelly v. Smith*, 485 F.2d 520 (5th Cir. 1973), the factors examined to determine whether there is sufficient "maritime flavor" include: (1) functions and roles of parties; (2) types of vehicles and instrumentalities involved; (3) causation and types of injury; and (4) traditional concepts of the role of admiralty law. *Id.* at 525.

201. 28 U.S.C. § 1331 (1982). See *supra* notes 182-191 and accompanying text.

202. 28 U.S.C. § 1332. See *supra* notes 192-195 and accompanying text.

203. *Romero v. International Terminal Operating Co.*, 358 U.S. 354, 380-81 (1959).

204. See *supra* notes 40, 47 & 48 and accompanying text.

205. See 18 U.S.C. § 7(6) (Supp. III 1985). See also *supra* note 170 and accompanying text.

206. See *supra* note 170 and accompanying text.

the federal judiciary, and regulate space jurisdiction as necessary.<sup>207</sup>

The drafters of the space treaties also believed in the analogy, as shown by their reliance on the High Seas Convention<sup>208</sup> and customary international law concerning maritime matters. At sea, jurisdiction is determined by the flag carried by the ship,<sup>209</sup> whereas in space, jurisdiction is determined by the registration of the space object.<sup>210</sup> In both circumstances, jurisdiction lies over the vessel and the people aboard it.<sup>211</sup> Additionally, jurisdiction carries over to matters arising in the area around the sea vessel or space object,<sup>212</sup> as long as exercise of jurisdiction is consistent with international law.<sup>213</sup>

According to international law precepts, no nation may claim national sovereignty over the sea or space;<sup>214</sup> all nations may use these areas on an equal footing.<sup>215</sup> Exercising jurisdiction over space activities may be viewed as an assertion of dominion or sovereignty over events occurring in space. Thus, in conferring federal court jurisdiction over space activities, the United States must be careful not to encroach on other nations' access to space or on a state's jurisdiction over a controversy. The United States can achieve this by limiting its jurisdiction to activities having a sufficient relationship with its space objects or personnel.<sup>216</sup>

### C. Alternative Judicial Systems

#### 1. *Special Characteristics of a Space Environment*

As the human presence in space becomes a reality and people begin to consider the space community their domicile, adjudication in outer

207. If Congress' analogy is accurate, Congress may use its Article III powers to establish and ordain inferior courts with jurisdiction over space matters. *Cf.* U.S. CONST. art. III, §§ 1 & 2, cl. 2. See *supra* notes 155 & 178 and accompanying text for the basis of broad congressional authority to regulate courts. *But see generally* Comment, *The Extension of United States Criminal Jurisdiction to Outer Space*, 23 SANTA CLARA L. REV. 627 (1983).

208. The High Seas Convention, *supra* note 37, arts. 2-4; Treaty on Outer Space: Hearings Before the Comm. on Foreign Relations, 90th Cong., 1st Sess. 52, 153 (1967) (statement of Ambassador Arthur Goldberg). See also Cunningham, *Space Commerce and Secured Financing—New Frontiers for the U.C.C.*, 40 BUS. LAW. 803, 806 n.31 (1985).

209. The High Seas Convention, *supra* note 37, art. 5.

210. The Outer Space Treaty, *supra* note 9, art. VIII; see also The Registration Convention, *supra* note 112.

211. *Cf.* The Outer Space Treaty, *supra* note 9, art. VIII; The High Seas Convention, *supra* note 37, art. 6.

212. See *supra* note 188 and accompanying text.

213. *Cf.* The Outer Space Treaty, *supra* note 9, art. III; The High Seas Convention, *supra* note 37.

214. *Cf.* The Outer Space Treaty, *supra* note 9, art. II; The High Seas Convention, *supra* note 37, art. 2.

215. *Cf.* The Outer Space Treaty, *supra* note 9, art. I; The High Seas Convention, *supra* note 37, art. 2; see also *supra* note 171 and accompanying text.

216. See *infra* notes 299-301 and accompanying text.

space will become necessary. Witnesses, parties to suit, evidence, and a jury of one's peers will all be located in space, not on Earth. Adjudication in space will also satisfy the need to resolve disputes quickly to maintain harmonious space operations.<sup>217</sup>

At least in the early stages of the space station, the failure to perform one's job will cause more serious repercussions than on Earth. Every person will be in space for a stated purpose and the entire community will depend on each individual's performance.<sup>218</sup> If a space station technician becomes sick or refuses to work, another person will need to replace her. The substitute will probably be forced to perform that job in addition to her other assigned tasks. Thus, absence from work will burden the rest of the community. This factor, combined with the artificial atmosphere and physical side effects experienced on a space shuttle or space station, will likely make the working and living environment volatile.<sup>219</sup>

The urgent need that everyone work and the mercurial nature of the space environment will make expedient adjudication imperative. It will not be possible to wait for the docket to clear before controversies can be heard in court. Parties, as well as the entire space station, will need to resolve disputes quickly to ease tension and to avoid major disruptions in work schedules.

## 2. *The Types of Disputes Arising in an American Space Station*

Several types of disputes will arise in space. The two general types of claims will be quasi-traditional claims and psychological-personal claims. The traditional claims made on Earth, concerning contracts, torts, crimes, and property, will also be made in space. The nature of these claims, however, may differ from those on Earth because of the unique characteristics of a space environment. For instance, in many states on Earth, if someone sees another person in physical danger, there is no duty of rescue. However, in space, where the station's survival relies on the participation of all community members, a duty to rescue may be imperative. The failure to rescue, therefore, may be considered a tort or a crime in space.

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217. See Note, *Dispute Resolution in Space*, *supra* note 113, at 233; see generally Stiennon, *The Procedural Problems of Administering Criminal Justice in Space*, 1 J. OF ASTROLAW 1 (1985).

218. Since the initial crew will consist of eight members working in space for three month periods, SPINOFF, *supra* note 10, at 41, it seems reasonable to assume that everyone will be serving an expected function that cannot be ignored.

219. People spending a lot of time in space have suffered both physiological and psychological effects. These changes cause the person to feel isolated, confined, stressed, nauseous, and tired. This general feeling of malaise makes people easily irritable, leading to a greater possibility of intracrew disagreements. For a better description of these effects, see Note, *Dispute Resolution in Space*, *supra* note 113, at 217-20.

Psychological-personal claims will involve situations which on Earth would never reach the courts. On Earth, when a member of society is angry with another member, she must deal with the other member to resolve the problem, and may not come into court for the judge's assistance unless authority exists for the judge to help in such a situation. In a volatile space environment, however, an expedient resolution may be needed to avoid interference with the success of the space station's mission. Tension between community members could easily destroy the working environment for everyone, thus affecting the station's production. In space, therefore, judges will need to help resolve problems concerning purely psychological or personal matters in order to protect the station's environment from emotional interference.

### 3. *The Need to Amend Constitutional and Procedural Protections*

Court procedures and constitutional protections may have to be altered to conform to the needs of the space environment. This departure from procedure might be more readily permitted if the space station is considered property or a territory of the United States than if it is considered part of the United States proper.<sup>220</sup>

The courts' primary inquiry in determining whether a judicial procedure is constitutionally valid under the Due Process Clauses<sup>221</sup> is whether the procedure is "fair."<sup>222</sup> Courts use the *Mathews v. El-dridge*<sup>223</sup> balancing test to determine the constitutionality of the procedure afforded a party.<sup>224</sup> In applying this test, the court considers:

[f]irst, the private interest that will be affected by the official action; second, the risk of an erroneous deprivation of such interest through the procedures used, and the probable value, if any, of additional or substitute procedural safeguards; and finally, the Government's interest, including the function involved and the fiscal and administrative burdens that the additional or substitute procedural requirement would entail.<sup>225</sup>

Under this test, the denial of the right to a jury trial<sup>226</sup> in space may

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220. The Supreme Court has stated that "Congress, in the government of the Territories as well as of the District of Columbia, has plenary power, save as controlled by the provisions of the Constitution, that the form of government it shall establish is not prescribed, and may not necessarily be the same in all the Territories." *Binns v. United States*, 194 U.S. 486, 491 (1904).

221. U.S. CONST. amends. V, XIV.

222. J. NOWAK, *supra* note 98, at 487.

223. 424 U.S. 319 (1976).

224. *See, e.g., Santosky v. Kramer*, 455 U.S. 745, 754, 758 (1982); *Little v. Streater*, 452 U.S. 1, 6 (1981); *Memphis Light, Gas & Water Div. v. Craft*, 436 U.S. 1, 17-18 (1978).

225. *Mathews*, 424 U.S. at 335.

226. The Sixth Amendment of the Constitution guarantees the defendant the right to a jury trial in a criminal proceeding. U.S. CONST. amend. VI; *Singer v. United States*, 380 U.S. 24, 36 (1965). *See infra* note 227 for a description of the seventh amendment right to jury trial in certain civil cases.

be considered beneficial. First, the station will not have "extra" people with time to sit through an entire trial. Second, since the space community will be relatively small, a jury will not be impartial and likely will have personal knowledge of the facts. Third, jury trials are inherently time consuming. This delay is inconsistent with the space station's need for speedy dispute resolution.

There is precedent for denial of the right to a jury trial in certain circumstances. In admiralty cases, for example, there is no right to trial by jury in civil disputes<sup>227</sup> because the importance of judicial efficiency outweighs that of a jury. The need for judicial efficiency is arguably much greater in space, given the need for speedy resolution of cases. Because of the additional characteristics of a space community, the admiralty model of jury trial denial should be extended in space to include not only civil disputes but also trials for crimes of a smaller magnitude,<sup>228</sup> since in these proceedings the interest in judicial efficiency<sup>229</sup> may still outweigh that of a jury trial.

The role of attorneys and judges may also be different in space. One of the primary factors involved in determining procedural "fairness" is whether the decisionmaker is neutral and detached.<sup>230</sup> The Supreme Court has held, however, that a single hearing officer or agency may serve both an investigative and adjudicative function.<sup>231</sup> These holdings may be significant in determining the role of attorneys and judges in space.

In space, there will probably not be enough litigation to occupy a full time legal or judicial staff; therefore, attorneys and judges will perform other occupational duties in the space community. In addition, judges may be called upon to play a more active role in the factfinding

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227. *T.N.T. Marine Service, Inc. v. Weaver Shipyards & Dry Docks, Inc.*, 702 F.2d 585, 587 (1983); FED. R. CIV. P. 38(e). This federal rule is not limited by the party's right to a jury trial pursuant to the Seventh Amendment of the Constitution, which states: "in suits at common law . . . the right of trial by jury shall be preserved. . . ." Admiralty suits were not common-law suits. See *supra* note 197. Since space suits did not exist at common law, it may be asserted that Congress can deny the right to a jury trial in a civil dispute without having to require all individuals desiring to travel into space to waive their seventh amendment rights.

228. The Sixth Amendment guarantees a criminal defendant the right to a jury trial whenever her sentence results in more than six months imprisonment or more than a \$500 fine. *Duncan v. Louisiana*, 391 U.S. 145, 159 (1968) (permitting denial of a right to jury trial in criminal trials involving petty offenses). Therefore, Congress may deny a defendant the right to a jury trial so long as the actual sentence imposed does not exceed these limits. Congressional denial of the right to a jury trial may also seem more justifiable in light of the likely partiality of the space community members. The partial nature of the trial would directly interfere with the spirit underlying the Sixth Amendment—to provide a fair and impartial trial.

229. See *supra* notes 217-219 and accompanying text.

230. J. NOWAK, *supra* note 98, at 487.

231. *Schweiker v. McClure*, 456 U.S. 188 (1982) (applying the *Mathews v. Eldridge* test); *Withrow v. Larkin*, 421 U.S. 35, 46-54 (1975).

process, setting aside their detached role. Judges may be expected to ask the parties questions and to inquire more about the issues presented. They may also need to do some of their own investigation, depending on the role of the attorneys during the process.<sup>232</sup> In hearing cases concerning psychological-personal disputes, judges would act as counselors and would have to deal with intimate subjects requiring a more sympathetic ear than in more traditional disputes.

Although speedy resolution would foreseeably demand that most dispute resolution occur in the space station itself, more complicated or serious legal issues may require earthside resources to assist in the truth finding process. The space station may choose to gain access to earthside resources by satellite, or to send the parties and evidence to Earth for the dispute to be decided, if necessary, by a disinterested or more competent court. This latter option may depend on the location of witnesses and evidence, and the need for involvement by space community members. As the need for dispute resolution in space increases, the need for more legal and judicial resources in space will also increase, making resolution in space feasible under more diverse circumstances.

In addition, the space community may require a modified fourth amendment analysis.<sup>233</sup> Since people living in the space station will not have the same expectation of privacy<sup>234</sup> as on Earth,<sup>235</sup> and since compliance with procedures used on Earth will be too inhibitory, the standards for obtaining evidence may need to be relaxed.

In determining the constitutionality of alternative procedures afforded in space, courts will have to consider the *Mathews* balancing test. It appears, however, that the space community's need for speedy resolution and procedural innovation may, under certain circumstances, outweigh the importance of innovation and the risk of violating certain civil liberties or property interests. Thus, some procedural deviations may be constitutionally valid, depending on the extent of the deviation and the nature of the interest involved.

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232. See *infra* notes 238, 242 & 245 and accompanying text.

233. U.S. CONST. amend. IV (protects the right against unreasonable searches and seizures).

234. In examining whether the Fourth Amendment applies to a case, courts look at a person's "expectation of privacy." *Katz v. United States*, 389 U.S. 347 (1967). Presently, and probably in the future, crew members will have little expectation of privacy. For example, on space shuttles, the crew members' activities are monitored by camera by the ground control crew. Stiennon, *supra* note 217, at 11.

235. In a space station, the living quarters may resemble those of a submarine: small space, often shared by many. For example, on submarines, people often sleep in beds on a time rotational basis: as one sleeps, another, having the same bed assigned, works. See March, *supra* note 151, at 82 n.45; Lloyd, *Submarines and Spacefarers—A Suggested Analogy*, 14 LINCOLN L. REV. & WHITE'S INN CHRON. 47, 49 (1983).



#### 4. *Three Alternative Judicial Models*

In establishing a space government, Congress should examine alternative dispute resolution procedures which have aided overburdened judicial systems on Earth. Four alternative juridical systems merit discussion, as analogous systems in space may be effective in expediently resolving disputes.

##### a. Small Claims Court Model

The first system is the California Small Claims Court,<sup>236</sup> which is designed to resolve efficiently and informally all disputes involving stakes worth less than \$1,500.<sup>237</sup> To maintain an informal judicial environment, parties may not be represented by an attorney in court,<sup>238</sup> and only the defendant may appeal the final judgment of the court.<sup>239</sup> This system requires minimal judicial and legal resources.<sup>240</sup>

The informal nature of adjudication under the Small Claims Court model would be advantageous in space, where the environment will be volatile, and where there will be a need to obviate as much as possible the tension created by the litigation process. By eliminating much of the adversarial nature of dispute resolution, the Small Claims Court model would permit opposing parties to work together after the resolution without much tension.

##### b. Arbitration Model

A second method of alternative dispute resolution is arbitration,<sup>241</sup> which encourages the resolution of problems outside of the courtroom to save judicial and legal resources. The arbitration system provides for both binding and nonbinding awards. In binding arbitration, parties may be represented by counsel,<sup>242</sup> and unless the parties agree otherwise, they

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236. The California Legislature established the Small Claims Court because it believed that "in order to resolve such disputes in an expeditious, inexpensive, and fair manner, it is essential to provide a judicial forum accessible to all parties directly involved in resolving such disputes." CAL. CIV. PROC. CODE § 116.1 (West 1982). See also Note, *Dispute Resolution in Space*, *supra* note 113, at 232-33.

237. CAL. CIV. PROC. CODE § 116.2 (West 1982). In order to promote the use of this efficient adjudicative procedure in outer space, Congress should eliminate the \$1,500 maximum as a jurisdictional limit.

238. CAL. CIV. PROC. CODE § 117.4 (West 1982). However, the parties may seek legal counsel prior to and outside of the hearing.

239. *Id.* § 117.8(a).

240. *Id.* § 117(a).

241. In arbitration proceedings, there is usually a neutral arbitrator who hears the evidence and arguments for all parties involved and determines the parties' rights and obligations accordingly. F. ELKOURI, *HOW ARBITRATION WORKS* 118 (4th ed. 1985).

242. See, e.g., CAL. CIV. PROC. CODE § 1282.4 (West 1982).

are permitted to move to vacate the arbitrator's award.<sup>243</sup> The binding arbitration system is consistent with the belief commonly held in the United States that an adversarial proceeding before a judge and with the assistance of counsel is the best truth finding process.<sup>244</sup>

In a space station environment, the use of attorneys in the binding arbitration process may cause too much tension and hostility among parties. The binding arbitration system might be more feasible when more attorneys are living in space, and the space community becomes less volatile; until then, however, a system not requiring lawyers would be best.

Most arbitration disputes fall into the nonbinding category. Although in nonbinding arbitration parties have a right to counsel, under most private arbitration agreements, parties waive their right to have attorneys present,<sup>245</sup> and may not have an award vacated unless abuse of the arbitrator's discretion is shown.<sup>246</sup> Therefore, in most circumstances, arbitration procedures resemble the Small Claims Court system—both systems apply informal evidentiary rules<sup>247</sup> and provide a setting in which few legal and judicial resources are expended.

### c. Hybrid Small Claims Court-Arbitration Model

Like the Small Claims Court model, the nonbinding arbitration model may prove to be advantageous in the initial stages of the space station's development. In space, a hybrid Small Claims Court-arbitration model may be desirable. This model would incorporate the advantages of each system, including those advantages in which the two models overlap. Under this model, (1) informal evidentiary rules would apply; (2) both parties would have a right to seek counsel outside of the

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243. See, e.g., *id.* § 1285. In California, in order for an arbitration settlement to be valid and enforceable, the parties must agree in writing to be bound by the arbitrator's decision. *Id.* § 1281. In space, Congress should eliminate this requirement of a written agreement. Instead, Congress should make an agreement to arbitrate a condition precedent to being allowed to travel into space.

244. Courts have more readily emphasized the importance of the adversarial process in relation to criminal trials. In *Strickland v. Washington*, 466 U.S. 668 (1984), the Court stated:

In giving meaning to the requirement [of providing effective assistance of counsel], . . . we must take its purpose—to ensure a fair trial—as the guide. The benchmark for judging any claim of ineffectiveness must be whether counsel's conduct so undermined the proper functioning of the adversarial process that the trial cannot be relied on as having produced a just result.

*Id.* at 686.

However, the adversarial system is also significant in civil trials as a basic feature of the United States common law tradition. See generally Merryman, *The Civil Law Tradition*, in J. MERRYMAN & D. CLARK, *COMPARATIVE LAW: WESTERN EUROPEAN AND LATIN AMERICAN LEGAL SYSTEMS, CASES AND MATERIALS* 651-61 (1978).

245. See F. ELKOURI, *supra* note 241, at 169.

246. *Id.* at 87-88.

247. *Id.* at 296-300 (arbitration system); CAL. CIV. PROC. CODE §§ 116.8(a) & 117 (Deering Supp. 1986) (California Small Claims Court system).

proceeding, but inside the proceeding counsel would be permitted only where the judge deemed an attorney's participation to be necessary to satisfy due process requirements; (3) the judge's decision would be binding and final; and (4) both parties would be able to appeal the judge's determination, but to have the determination vacated, an appellant would have to meet a more exacting standard than that used on Earth to show the judge's abuse of discretion.

#### d. Mediation and Community Board Review Model

The fourth method involves mediation. In mediation an impartial party facilitates discussion between parties involved in a dispute.<sup>248</sup> The mediator helps the parties "resolve their dispute in an informative and consensual manner."<sup>249</sup> Mediators do not make a final decision, but rather listen to the parties, hear their cases, and direct the parties in formulating their own solution.<sup>250</sup>

In space there are two types of mediation which may prove useful: mediation by a community board and mediation by a professional mediator. In community board mediation, neighbors of the parties would serve as mediators. This would allow the community to be involved in resolving controversies affecting the space station. Unlike the formal judicial system which compels community members to serve as jurors, community boards allow interested members to help parties agree to a workable solution.

Since the community will have an exalted status in a space station,<sup>251</sup> group involvement in handling personal disputes could prove advantageous. In light of the volatile nature of the space environment, however, personal matters will affect the entire group more than they do on Earth, and thus it may be best to isolate disputes from the rest of the community. Further, for the same reasons that a jury trial in space may

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248. See, e.g., American Bar Association, *Standards of Practice for Lawyer Mediators in Family Disputes*, 18 FAMILY L.Q. 363-68 (1984), reprinted in L. KANOWITZ, *CASES AND MATERIALS ON ALTERNATIVE DISPUTE RESOLUTION* 926, 928 (1985) (part III states that the mediator has a duty to be impartial); American Arbitration Association, *Commercial Mediation Rules*, reprinted in L. KANOWITZ, *supra*, at 922 (rule 5 describes impartiality as one of the qualifications of a mediator).

249. American Bar Association, *Standards of Practice for Lawyer Mediators in Family Disputes*, *supra* note 248, at 926.

250. See L. KANOWITZ, *supra* note 248, at 78.

251. In a space community, members' actions will affect the entire space society more than they do on Earth. In space, people will rely on other members to perform their duties and for social interaction. Hence, disputes among crew members will affect the environment and quality of life of the entire space community. For these reasons, societal values will be more likely to outweigh individual values in space than they would on Earth. Bringing these values into the dispute resolution process, therefore, may be beneficial for the group's welfare. See *supra* note 219 and accompanying text.

prove to be abusive,<sup>252</sup> recommendations by a community board may be disadvantageous in the early stages of space settlement. Yet, when the space community becomes larger and more impersonal, the community board system may become an acceptable alternative.

While the community is still small, mediation by a professional mediator may be a reasonable alternative. This system would permit a professional mediator to facilitate discussion between parties, thereby obviating the potential abuse inherent in the community board system.

e. **An Analysis of the Judicial Models and Their Possible Application in Space**

The four models of alternative dispute resolution and the traditional model of formal adjudication are useful as a judicial framework in space. In applying the *Mathews* test,<sup>253</sup> the space station will be able to determine which models will be appropriate to adjudicate different types of claims. In general, where parties have less at stake in the proceeding, courts can deviate more from the traditional model of formal adjudication. For instance, mediation may be a desirable method for civil disputes of a smaller magnitude, or where the parties to a dispute are prepared to compromise. Mediation may also prove useful to resolve psychological-personal claims in which the court will be asked to perform the role of counselor, helping the parties to resolve their personal disputes. For civil disputes of a greater magnitude, criminal trials involving misdemeanors or infractions, or controversies involving parties who refuse to compromise, having a judge-like figure make a final determination may be necessary. In this system a hybrid Small Claims Court-arbitration system would be constitutionally valid. In civil disputes of the greatest magnitude or for criminal trials involving felonies, a proceeding resembling formal adjudication may be required. In the latter case, the space station may need to send the trial—parties, evidence, and witnesses—to Earth for resolution by a more resourceful body in order to afford the parties the due process they deserve under the Constitution. Since a formal trial requires more time than an alternative method of dispute resolution, the space station will need to have people sent from Earth to substitute for the parties attending the litigation.

#### **IV. Problems with State Legislation and Jurisdiction in Space**

##### **A. State Legislation**

Traditionally, states have regulated activities affecting the residents of their states. In areas of tort, criminal, contract, real property, and estate law, state legislation dominates; Congress has not interfered with

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252. See *supra* text accompanying notes 194-195 & 226-228.

253. See *supra* text accompanying note 225.

the states' authority unless necessary to exercise an enumerated power under the Constitution or to protect a strong federal interest.<sup>254</sup> Where necessary, however, congressional legislation may preempt state law since federal law is the supreme law of the land.<sup>255</sup> To preempt state law, Congress may either explicitly state its intent,<sup>256</sup> or implicitly do so by pervasively regulating a particular field of law.<sup>257</sup>

In space, it may be necessary for Congress to exercise its authority to preempt state law in *all* areas, even those traditionally within a state's police power. This means, for example, that Congress would enact laws concerning tort liability, criminal punishment, contractual enforcement, transfer of property, and administration of estates, for any actions sufficiently related to space activity. State legislation in space may interfere with the federal government's goal of establishing a foundation for a viable and prosperous space community, and would thus impede a strong federal interest.

The problems involved with concurrent federal and state legislation are illustrated by an example concerning the states' taxing power. In a recent California decision, *Communications Satellite Corp. v. Franchise Tax Board*<sup>258</sup> (COMSAT), the court of appeal upheld the state's inclusion of a satellite, as property, in the corporation's unitary tax base. According to the court, "[t]here is an invisible, but apparently continuous and very real, connection between the earth station and the satellites."<sup>259</sup> Through this "contact" with the state, the state may justify its authority over the activity.

Decisions like this one threaten the viability of a stable American presence in space. By applying the *COMSAT* standard, almost every state can find some "invisible" link to property located in space in order to justify the property's inclusion in its tax base. This sort of legal uncertainty, disuniformity, and assertion of state authority would impede national progress in space.

Although it may be reasonable to allow states to tax space property or income which is clearly derived from the states, state taxation or regulation of other space activities becomes unjustifiable as more property

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254. See, e.g., *Patterson v. New York*, 432 U.S. 197, 201 (1977) ("dealing with crime is much more the business of the States than it is of the Federal Government"); *Elkhart Engineering Corp. v. Werke*, 343 F.2d 861, 868 (5th Cir. 1965) ("state has a substantial interest in providing a forum to redress tortious injuries.").

255. U.S. CONST. art. VI, § 2; *Ray v. Atlantic Richfield Co.*, 435 U.S. 151, 158 (1978); *Chevron U.S.A., Inc. v. Hammond*, 726 F.2d 483, 495 (9th Cir. 1984).

256. *Allis-Chalmers Corp. v. Lueck*, 471 U.S. 202, 208, (1985); *Ray*, 435 U.S. at 157; *Hammond*, 726 F.2d at 486.

257. *Ray*, 435 U.S. at 157; *Hammond*, 726 F.2d at 488-89; *Lockheed Air Terminal, Inc. v. City of Burbank*, 457 F.2d 667, 671 (1972), *aff'd*, 411 U.S. 624 (1973).

258. 156 Cal. App. 3d 726, 203 Cal. Rptr. 779 (1984), *appeal dismissed*, 469 U.S. 1201, *reh'g denied*, 471 U.S. 1049 (1985).

259. *Id.* at 748, 203 Cal. Rptr. at 793.

and income is located in space and ties to the state become attenuated. Instead, the federal government should benefit from the collection of these taxes. Since the space community will require expenditures to maintain itself, it would be more practical to allow the federal government to raise the revenue via taxation of space activities. Thus, the federal government can allocate the tax revenue toward the maintenance of the space community.<sup>260</sup>

Constitutional theory also militates against state interference in the regulation of space activities that may impede federal interests in establishing an American presence in space. State legislation would threaten federal authority over treaties, foreign commerce, and national defense. The Framers of the Constitution intended that the federal government have control over foreign affairs and foreign commerce because of the importance for the Nation to "speak with one voice"<sup>261</sup> in international affairs. If states were allowed to enter into treaties or regulate foreign commerce, then the United States would have several coexistent and possibly inconsistent policies with foreign nations, potentially undermining the national policy or even the policy of another state. Obviously, such chaos would destroy the credibility of the United States and interfere with any meaningful diplomacy efforts.

Moreover, through its power over national defense and its interest in maintaining technological superiority, the federal government, and not state governments, should finance and conduct research in space technology. State regulation of technological matters may decentralize space exploration and thus weaken the federal government's control over the information gained by space research. Misuse of information could threaten national and international security. As the United States settles in space, Congress could further justify its legislation over defensive space activity by pointing to the space station's need for military assistance to protect it from attack.

State regulation may also violate equal protection principles. Equal protection requires "that similar individuals be dealt with in a similar

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260. In *Binns v. United States*, 194 U.S. 486 (1904), the Supreme Court held that Congress had the authority to decide how to distribute the revenue accumulated from the Alaskan territory:

[I]f the [congressional] act had provided for a local treasurer to whom these local taxes should be paid and directed that the proceeds be used solely in payment of the necessary expenses of the government of Alaska, its constitutionality would be clear, but the contention is that the statute requires that the proceeds of these licenses shall be paid into the Treasury of the United States, from which, of course, they can only be taken under an act of Congress making specific appropriation.

*Id.* at 492. Congress may, therefore, choose to allocate all the revenue to the territory itself for its expenditures. Consequently, Congress may treat space like the Alaskan territory and allocate all space revenue towards the payment of space expenditures.

261. *Japan Line v. Los Angeles*, 441 U.S. 434, 451 (1979); *Michelin Tire Corp. v. Wages*, 423 U.S. 276, 285 (1976).

manner by the government.”<sup>262</sup> When treating similar people differently, governments must show that classifications are not “based upon impermissible criteria or arbitrarily used to burden a group of individuals.”<sup>263</sup> Both the state and federal governments are bound by equal protection principles.<sup>264</sup>

In space, making the choice of governing law dependent upon an individual’s place of origin would be impractical and could violate equal protection principles. For example, if one community member commits a tort against another, the wrongdoer should be treated the same as any other community member who commits the identical act. State regulation of space activities would create an inherent unfairness among the space community members because of the disparate treatment of space dwellers with different state origins under similar circumstances. Federal regulation, however, would apply uniformly to all members and would avoid inconsistent outcomes.

## B. Concurrent Jurisdiction

State and federal courts traditionally have exercised concurrent jurisdiction over some matters involving federal law.<sup>265</sup> The two primary policy reasons for allowing state jurisdiction over space activities are: (1) to provide a forum; and (2) to permit states to retain some control over space activities. States have an interest in activities affecting their citizens, and they have a corresponding duty to provide a forum.<sup>266</sup> The states’ duty to provide a forum corresponds with their citizens’ duty to pay taxes. With greater activity in space, and assertion of state authority to tax space activity,<sup>267</sup> states may argue that it is their duty to hear cases arising in space to justify their taxation of space activity. Concurrent jurisdiction would also allow the states to retain some control over space development. Although states will not have much authority to prescribe regulation over space activities, they may nevertheless retain some influence over space development via judicial interpretation of the federal leg-

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262. J. NOWAK, *supra* note 98, at 525. See also *Avery v. Midland County*, 390 U.S. 474 (1968).

263. J. NOWAK, *supra* note 98, at 525. See *Frontiero v. Richardson*, 411 U.S. 677, 683 (1973) (plurality); *Richardson v. Belcher*, 404 U.S. 78, 81 (1971).

264. Although the Equal Protection Clause of the Fourteenth Amendment only applies to the states, the Court has interpreted the Due Process Clause of the Fifth Amendment, which applies to the federal government, to contain an equal protection component. The standards under both clauses are identical. See, e.g., *Bolling v. Sharpe*, 347 U.S. 497 (1954). To hold otherwise would demand higher standards of the state governments than of the federal government. *Id.* at 500.

265. For example, states have concurrent jurisdiction over contracts, torts, and state or federal tax matters. See *supra* note 179.

266. When citizens are burdened by state regulation they may reasonably expect that the states confer benefits on them, such as resolving disputes arising under such regulation.

267. See *supra* notes 258-259 and accompanying text.

islation. Unless the legislation is extremely comprehensive, judge-made law can be particularly significant in developing new areas of law.

The costs of having concurrent jurisdiction outweigh its benefits. First, jurisdiction by state courts will not provide states with much additional opportunity to exercise authority over space activities because representatives in Congress, elected by the people of the states and sharing many of the people's concerns over local issues, will still protect the states' interests in Congress when legislating on space development.<sup>268</sup> Second, the court docket overload in certain states may prevent the states from resolving disputes in an expedient, efficient manner in cases arising in space, where time is of the essence, and an efficient resolution method is imperative.<sup>269</sup> Federal interests in the development of a space community require that the states be prevented from interfering with the implementation of federal space policy.

## V. A Proposal for a Legal Order for an American Space Settlement

### A. The Need for a Legal Regime

Americans have begun to realize the technological and strategic advantages to be gained by an American presence in space, including the eventual construction of a space station. However, the tragic explosion of the Challenger on January 28, 1986, which killed all seven crew members and annihilated the shuttle,<sup>270</sup> called attention to the legal void concerning space activities. If a similar event occurred in outer space rather than in the Earth's atmosphere, the victims' families would not be certain whether they had a cause of action for damages, and if so, whether that cause of action would be governed by state or federal law.<sup>271</sup>

Knowledge of the governing laws and regulations in space would assist the commercial community in determining the overall benefits of participating in space activities. The private sector would be hesitant to invest and manufacture in space without knowledge of the attendant legal ramifications. The federal government must eliminate these uncertainties before there is a greater physical presence or private sector participation in outer space. In order to prevent instability from threatening the realization of federal space policy, Congress must determine and define a legal regime applicable in space. Existing statutes will not be suited

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268. *Garcia v. San Antonio Metro. Transit Auth.*, 469 U.S. 528, 546, 550-54 (1985) (the political process ensures that federal laws will not unduly burden the states; people from the states elect the representatives to federal government). See *supra* note 150 and accompanying text.

269. See *supra* notes 217-219 and accompanying text.

270. N.Y. Times, Jan. 29, 1986, at 1, col. 5.

271. See *infra* note 296 for a discussion of the crew members' limited rights to recover damages for injury incurred in space.



to the needs of life in space; they are tailored to meet the conditions on Earth and the types of legal problems arising here. In a space station, people and entities will engage in activity heretofore unimagined on Earth. Thus, a "legal vacuum"<sup>272</sup> will exist and will need to be filled.

Without a coherent body of laws covering space activities, the government may encounter constitutional obstacles in the enforcement of current laws in space. The Due Process Clauses of the Fifth and Fourteenth Amendments<sup>273</sup> require that citizens have "notice" of the laws governing their activities before they are held responsible for obeying or violating such laws.<sup>274</sup> This constitutional notice does not currently exist regarding space activities.

### B. The Establishment of a New Polity Modeled after a Federal Territory

The space station can be analogized to a federal territory: the station will be governed by the federal government, not subject to any state's claim of sovereignty. The primary reason for this analogy is a national concern over the development of a space community. In areas ranging from commerce to national defense, a presence in space will affect the lives of *all* Americans. It is therefore logical that Congress should maintain control over the American presence in outer space.

It would be consistent with the Constitution for Congress to establish a new polity in space wholly governed and controlled by Congress.<sup>275</sup> Although the current space treaties may need to be revised to allow for space settlement,<sup>276</sup> a United States constructed space community would probably not be viewed as inconsistent with the spirit of the space treaties.<sup>277</sup>

In designing the new polity to resemble a federal territory, Congress would enact all laws applicable in space and establish a governing body in space to enforce such law. In doing so, Congress would have to con-

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272. A "legal vacuum" is a gap in existing law, both statutory and common law. For instance, when there is no existing law on a particular subject, a "legal vacuum" arises as to whether the subject matter is regulated at all. Zieman, *Legal Vacuum: Lack of Law May Slow the Use of Outer Space By Private Enterprise*, Wall St. J., Aug. 20, 1985, at 1, col. 1.

273. U.S. CONST. amends. V, XIV (Fifth Amendment: "No person shall be . . . deprived of life, liberty or property, without due process of law; Fourteenth Amendment: "No State shall . . . deny to any person within its jurisdiction the equal protection of the laws.").

274. "Due Process requires that all 'be informed as to what the state commands or forbids,' . . . and that 'men of common intelligence' not be forced to guess at the meaning of the criminal law." *Smith v. Goguen*, 415 U.S. 566, 574 (1974). See also *Lanzetta v. New Jersey*, 306 U.S. 451, 453 (1939); *Connally v. General Constr. Co.*, 269 U.S. 385, 391 (1926).

275. See *supra* note 144 and accompanying text.

276. See *supra* text accompanying note 131-132 & 145 for a discussion of the effects of classifying the space community as a United States territory under Article 2 of the Outer Space Treaty.

277. See *supra* text accompanying notes 116-118, 131-32 & 145.

sider the unique conditions and needs of a space environment. For instance, at first the presence in space will involve property more than people.<sup>278</sup> A few individuals will live in the station for short periods of time,<sup>279</sup> thus, laboratories and manufacturing will operate with little human assistance. Since most activity will still be supervised on Earth, it might be practical for earthside authorities to continue regulating space activities. Therefore, the space community, dependent on earthside resources, will resemble a federal territory which looks to the federal government for assistance.<sup>280</sup> Using the three territorial models as a basis for comparison,<sup>281</sup> Congress should treat the space community as a territory and regulate all space activities. Which model is ultimately selected will depend upon congressional plans for the settlement's future.<sup>282</sup> This Note, however, suggests that Congress focus on the trust model,<sup>283</sup> so that the space community may someday act as a sovereign international entity. Until the settlement attains sovereignty over its confines, Congress can delegate increasing authority to the growing space community, allowing the community to make independent decisions affecting the settlement.<sup>284</sup> The settlement's unique characteristics may nevertheless require Congress to design an entirely new territorial structure.

### C. A Federal Code

In order to protect federal interests in space development, Congress should establish a commission to promulgate a Space Code. The commission should define the scope of activities to be covered by the legislation and the form that the legislation should take. In addition, the commission should give close scrutiny to constitutional issues arising out of the promulgation of such legislation.<sup>285</sup> The resulting legislation should be in the form of a Code: a separate, coherent body of laws dealing directly with a new subject matter and circumstance—space activity. Congress should not be constrained by limits geared toward addressing situations occurring on Earth. Instead, Congress should start with a clean slate, using existing laws as a starting point or for comparison.

Due to the rapid technological progress in space, the Code's drafters, like the constitutional Framers, should use language subject to contemporary interpretation in order to make the Code a "living"

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278. Note, *Dispute Resolution in Space*, *supra* note 113, at 214.

279. See *supra* note 28 and accompanying text.

280. See *supra* note 129 and accompanying text.

281. See *supra* text accompanying notes 55-96.

282. See *supra* text accompanying notes 93-96.

283. See *supra* notes 78-86 and accompanying text.

284. Note, *Dispute Resolution in Space*, *supra* note 113, at 214.

285. For example, in upholding the principle of federalism, the commission should be careful not to infringe on states rights through the allocation of legislative and judicial authority. See *supra* note 160.

document.<sup>286</sup> This would allow the political structure, defined by the Code, to change from within to accommodate technological advances. Thus, the Code would not need to be revised continually merely to encompass interim developments.

Assuming the space station will be completed during the 1990's,<sup>287</sup> it is not too soon to begin working on the establishment of a new polity in space and on the enactment of a Code that governs space activities. Congress must allow time for the inevitable obstacles that accompany enactment of comprehensive legislation. Also, congressional action should be prompt to apprise the public of the Code's content. The private sector must know immediately what the legislation will include so that it can make appropriate plans and prepare itself to participate in space, both during and after the station's construction.

Congress should design the new Space Code to preempt state law for reasons of uniformity.<sup>288</sup> Allowing states to regulate space activities would create problems for the United States in the enforcement of its treaties<sup>289</sup> as well as in the execution of its policy in space.<sup>290</sup> State involvement would also discourage private investment in the area.<sup>291</sup>

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286. In *United States v. Classic*, 313 U.S. 299 (1941), Justice Stone described the interpretation process for constitutional cases in the following manner:

[I]n determining whether a provision of the Constitution applies to a new subject matter, it is of little significance that it is one with which the framers were not familiar. For in setting up an enduring framework of government they undertook to carry out for an indefinite future and in all the vicissitudes of the changing affairs of men, those fundamental purposes which the instrument itself discloses. Hence we read its words, not as we read legislative codes which are subject to continuous revision with the changing course of events, but as the revelation of the great purposes which were intended to be achieved by the Constitution as a continuing instrument of government.

*Id.* at 316.

In *Martin v. Hunter's Lessee*, 14 U.S. (1 Wheat.) 304 (1816), Justice Story also expounded the idea of the Constitution as a living document:

The constitution unavoidably deals in general language. . . . The instrument was not intended to provide merely for the exigencies of a few years, but was to endure through a long lapse of ages, the events of which were locked up in the inscrutable purposes of Providence. It could not be foreseen what new changes and modifications of power might be indispensable to effectuate the general objects of the charter; and restrictions and specifications, which, in the end, prove the overthrow of the system itself. Hence its powers are expressed in general terms, leaving to the legislature, from time to time, to adopt its own means to effectuate legitimate objects, and to mould and model the exercise of its powers, as its own wisdom, and the public interests, should require.

*Id.* at 326-27.

287. See *supra* note 20 and accompanying text.

288. See *supra* notes 255-257 & 261-263 and accompanying text.

289. See *supra* note 261 and accompanying text.

290. See *supra* notes 261-263 and accompanying text.

291. Congress should clearly state in the preamble of the Code its intention to encompass all space activities and to preempt any state law in the field. However, even if the intent to preempt was not clearly stated, the comprehensiveness of the Code and the strong federal interest, especially in uniformity, would allow the Code to preempt any state law in the area.

Only certain conditions should trigger application of the Code. These conditions are jurisdictional in nature; the Space Code would apply to a given situation only if the conditions are met. If the conditions are not met, then the activity would be regulated under existing laws enacted for Earth.

Some authorities propose a locational limit to define jurisdiction.<sup>292</sup> This type of threshold is presently used to delineate airspace and territorial waters.<sup>293</sup> If a locational threshold test is adopted, current laws would no longer apply if the activity occurs beyond a certain point in space. However, there is disagreement concerning the locus of such a threshold.<sup>294</sup> Moreover, although this test seems reasonable at first glance, it does not account for other important factors, such as the length of a mission.

"Mission duration" has been suggested as another threshold.<sup>295</sup> Voyages of short duration may not necessarily require a different form of jurisdiction than those already existing on Earth. On shorter missions, people could return to Earth where judicial resources, such as courts, witnesses, legal texts, and libraries, are available. However, as the duration of the mission increases, there will be a greater need to resolve problems promptly in space, where the parties are located.

The mission duration threshold is inadequate because it does not account for the possibility of a grave or heinous occurrence during a "short" mission. For example, imagine that a shuttle leaves Earth for a mission of short duration and a fight breaks out between two crew mem-

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The strong federal interest is evidenced by the federal government's duty to exercise its authority in foreign affairs, interstate and foreign commerce, national defense, admiralty, and in regulating its proprietary interest. *See supra* notes 99-176 and accompanying text.

292. *See generally* Cheng, *The Legal Regime of Airspace and Outer Space: The Boundary Problem Functionalism Versus Spatialism: The Major Premises*, 5 ANNALS OF AIR & SPACE L. 323, 324-28 (1980).

293. In regard to airspace, the federal courts have stated that:

[t]here is a public right of freedom of transit in the airspace over privately owned land beginning at the 500-foot level above the surface of the ground in uncongested areas, and the public has the right to travel in this airspace with the same freedom as it has to travel on the public highways or on navigable waters.

*Spir v. United States*, 485 F.2d 643, 646 (Ct. Cl. 1973).

In another federal court of appeals decision, the court stated a different method of determining an individual's rights over the airspace: "the land owner, as an incident to his ownership, has a claim to the superadjacent airspace' to the extent that a reasonable use of his land involves such space." *Palisades Citizens Ass'n v. Civil Aeronautics Bd.*, 420 F.2d 188, 192 (D.C. 1969). *See also supra* note 152 and accompanying text.

In regard to territorial waters, Congress has stated that the seaward boundaries of coastal states shall be "a line three geographical miles distant from its coast line." 43 U.S.C. § 1312 (1982). *See also supra* note 39 and accompanying text for a discussion of the high seas boundaries.

294. *See* Cheng, *supra* note 292, at 324-28; Note, *Dispute Resolution in Space*, *supra* note 113, at 212.

295. Note, *Dispute Resolution in Space*, *supra* note 113, at 213.

bers resulting in injury and a claim for battery. Due to the length of the trip, the Code would not apply. Since no negligence was involved, the crew members would have no recourse against the government.<sup>296</sup> Thus, the only recourse would be in state courts. However, most states apply the law of the state where the tort occurred<sup>297</sup> and, because the tort did not occur in any state,<sup>298</sup> the parties would be left without a remedy.

The most reasonable threshold for applicability of the Code would be the "sufficient relationship" threshold applied in admiralty law.<sup>299</sup> The Code would apply as long as the nature of the activity was "sufficiently related" to a space activity.<sup>300</sup> The sufficient relationship test is the most reasonable alternative because it would incorporate some factors from the other tests suggested. Under the sufficient relationship threshold, a court would consider the location of the activity and the duration of the person's stay in space, along with other factors,<sup>301</sup> to determine whether the activity bore a sufficient relationship to space activity. A person engaging in a space related activity would thus know that the Code governed his or her actions. Moreover, it would not be necessary to go to a foreign state or nation to have a dispute judicially resolved.

#### D. Jurisdiction: Exclusive Federal Subject Matter Jurisdiction in Outer Space

Due to the strong federal interest in regulating space, Congress should establish exclusive federal jurisdiction<sup>302</sup> to hear controversies arising under the Code. Although jurisdiction over controversies similar to those that will arise in space traditionally has been concurrent on Earth, Congress should make federal jurisdiction in space exclusive for reasons of expediency and expertise.

To achieve speedy and expert dispute resolution, Congress should establish special federal courts, perhaps similar to the Bankruptcy,<sup>303</sup> and

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296. The Federal Torts Claims Act, 28 U.S.C. §§ 1346(b), 2671-2680 (1982). This Act creates a right to bring a suit in federal court under federal law for a federal government employee's or agent's negligence. In the case of a fight, however, no negligence would be involved. *See id.* § 2680(h) (excluding claims arising from battery). Therefore, on its face the statute would not apply and plaintiff could not recover against the government.

297. RESTATEMENT (SECOND) OF CONFLICT OF LAWS § 145 comment e, at 420 (1971).

298. *See id.*

299. *See, e.g.,* *Foremost Ins. Co. v. Richardson*, 457 U.S. 668, 675 n.5 (1982); *Petrou v. United States*, 529 F. Supp. 295 (D.C. Md. 1981); *see also supra* note 200.

300. *See* the discussion of the *Kelly* factors, *supra* note 200, used to help determine the sufficiency of relationship.

301. *Id.*

302. Space jurisdiction should include any activity which is sufficiently related to outer space. This test would examine whether an appropriate "nexus" exists between the activity and the field of space.

303. *See supra* note 180 and accompanying text.

Patent and Copyright,<sup>304</sup> courts that would hear only controversies concerning space activities. The expedient adjudication of disputes would reduce the burden and tension on the space community as well as prevent further exacerbation of the overcrowded dockets in the regular federal court system. In addition, the infrequent and unique nature of the cases arising in space would create a need for litigators and judges who are experts in the field. Establishing a court that hears only cases concerning space activities would make dispute resolution more efficient and beneficial for the parties involved.

#### E. Alternative Judicial Systems

At first, when fewer lawyers and resources are available in space, an informal method modeled after the California Small Claims Court, arbitration, or mediation system would be best. Each of these systems would be beneficial for certain types of disputes.<sup>305</sup> Congress, therefore, should not choose only one system when creating a judicial system for space, but should use all of these systems, as well as the formal, traditional adjudication system. Use of these systems would recognize and account for the volatility of the environment as well as the community's need for speedy dispute resolution. However, because of the particular needs of a space environment, it still may be necessary to deviate further from the procedural norms accepted on Earth to design an entirely new judicial system.

### Conclusion

In the 200 years of its constitutional existence, the United States has expanded its territorial boundaries many times. Each expansion has required Congress to examine the nature and needs of the territory and to determine a governing order best suited for such an environment. As the United States embarks upon a new era in space, Congress must consider the unique characteristics of a space community in establishing a governing order.

Through its constitutional authority over treaty matters, federal property and territory, interstate and foreign commerce, national defense, and the high seas, Congress has broad power to regulate space activity. In exercising its authority, Congress should enact a uniform body of applicable laws so that instability and uncertainty do not plague or inhibit the Nation's future.

The Constitution grants the federal courts authority to hear controversies involving federal questions or treaties, diversity of citizenship, and admiralty matters; it also delegates to Congress the power to regu-

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304. *See supra* note 181 and accompanying text.

305. *See supra* text part III(C)(4)(e).

late tribunals inferior to the Supreme Court.<sup>306</sup> In exercising its authority, Congress should confer exclusive subject matter jurisdiction on a special federal court to ensure expedient adjudication of all controversies arising under the Space Code.

Congress has extensive constitutional authority to regulate activity arising inside United States territories and military compounds. For these areas, Congress may, where necessary, prescribe laws which deviate from procedural norms. Due to the space station's volatile sociological nature, Congress should examine alternative judicial systems and constitutional procedural guarantees for application in space.

Both the Constitution and case law support the emergence of a new Federal Space Code and subject matter jurisdiction for space activities. Because the federal government has strong interests in this area, it can easily justify retention of exclusive control over space activities. Only by exercising exclusive control over the development of a space civilization can Congress protect America's hope for a prosperous future in space.

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306. *See supra* note 178.

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