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Outer Space: New Challenges to Law and Policy

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OUTER SPACE: NEW CHALLENGES TO LAW AND POLICY. By *J.E.S. Fawcett*. Oxford: Clarendon Press. 1984. Pp. 169. \$24.95.

Activities in space have become both more prevalent and more important over the last ten years. Scientific, commercial, and military applications of the unique conditions beyond the atmosphere are expanding rapidly. Whatever turn events take, space will continue to become more important through the closing years of this century. Increasingly, these activities will affect not only the developed, space-faring nations, but also the world community as a whole. *Outer Space: New Challenges to Law and Policy*, by J.E.S. Fawcett,¹ offers an overview of the current status of man's reach into the cosmos, with special attention to the implications of these developments for international law. The volume's subject is both apt and timely, and its scope comprehensive. Unfortunately, while Fawcett's knowledge of the relevant international law is authoritative, the world's space programs receive only spotty, and at times misleading, coverage.

Fawcett's book, although relatively short (122 pages excluding appendices), covers both the international legal framework governing activities in outer space, and specific uses of orbital and trans-orbital space. In Part I, Fawcett discusses three of the most important international legal questions concerning space — in chapters on space as the province of mankind, the uses of outer space, and space operators.² Part II offers chapters on specific aspects of space exploration — telecommunications, remote sensing, space stations, astronomical obser-

1. Professor Emeritus of International Law, University of London.

2. The term "space operator" has been adopted by the international community to denote both private and governmental owners and operators of spacecraft.

vation, and the strategic uses of outer space — and then concludes with a general overview.

Fawcett's expertise lies in international law and its relationship to space activities,³ the subject of Part I. The principal treaty governing activities in space, the Outer Space Treaty,⁴ entered into force in 1967. The treaty provides that space is the province of all mankind, that space and celestial bodies are not subject to national appropriation, that activities in space must be carried on peacefully and cooperatively, and that states party to the treaty bear responsibility for their nationals' activities in space.⁵

Fawcett explains all of these provisions, concentrating his attention on rules governing appropriation of resources in space, and on the frontier between space and the earth's atmosphere. The latter is important since within the atmosphere individual nations may control incursions into their airspace, while orbital passage is permitted. Appropriation of space resources has become an active topic in part because lunar and asteroid mining, much like seabed mining on this planet, promises to become profitable during the next century.

The greatest weakness of this chapter, and of Part I as a whole, is Fawcett's failure to note the continuing opposition, most prevalent in the United States, to the Moon Treaty.⁶ The treaty declares the moon to be the "common heritage of mankind," and makes exploitation of lunar resources subject to control by an international consortium to be set up by the United Nations.⁷ Fawcett repeatedly cites the Moon Treaty as part of the corpus of international law, although he occasionally does note that it is a "draft" treaty.⁸ While the virtues of the treaty are considerable, so are its faults. Given the refusal of several major space-faring nations — including the United States — to sign

3. Fawcett has had extensive diplomatic experience, serving as a member of the European Commission on Human Rights from 1962 to 1984, and as president of that body from 1972 to 1981. He also served as assistant legal advisor to the British Foreign Office from 1945 to 1950, including service in the British embassy in Washington. His previous works include *THE BRITISH COMMONWEALTH IN INTERNATIONAL LAW* (1963); *INTERNATIONAL LAW AND THE USES OF OUTER SPACE* (1968); *THE LAW OF NATIONS* (1968); *THE APPLICATION OF THE EUROPEAN CONVENTION ON HUMAN RIGHTS* (1969); *INTERNATIONAL ECONOMIC CONFLICTS* (1977); and *LAW AND POWER IN INTERNATIONAL RELATIONS* (1982).

4. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, *done* Jan. 27, 1967, 18 U.S.T. 2410, T.I.A.S. No. 6347 [hereinafter cited as Outer Space Treaty].

5. Outer Space Treaty, *supra* note 4, arts. 1-4, 6.

6. Agreement Governing the Activities of States on the Moon and other Celestial Bodies, G.A. Res. 34/68, 34 U.N. GAOR Supp. (No. 46) at 77, U.N. Doc. A/34/664 (1979) [hereinafter cited as Moon Treaty]. For a brief history of the treaty's status as international law, and of the controversy the treaty has created in the United States, see Note, *The Common Heritage of Mankind: An Assessment*, 14 CASE W. RES. J. INTL. L. 509, 529-33 (1982).

7. Moon Treaty, *supra* note 6, art. 11.

8. The treaty itself provides that it shall enter into force when it is ratified by five nations (it has been), though this only applies to the nations so ratifying it. Moon Treaty, *supra* note 6, art. 19.

the treaty, its future cannot be so easily presumed. Indeed, perhaps the single most important international legal issue regarding the development of outer space is the extent to which resources beyond the earth will be treated as "the common heritage of mankind," as the Moon Treaty provides.

Fawcett's one-world perspective is one approach to this question, but its acceptance can hardly be assumed without comment and without acknowledging competing paradigms. This is, however, the way Fawcett approaches the issue, noting at one point that "while decades may yet have to pass before [the United Nations General Assembly] is a law-making parliament, it is on the way" (p. 6). Fawcett's comment appears without any further discussion. However, his belief in an emerging globalism is visible throughout the work, particularly in his staunch support for the Moon Treaty and similar efforts. Of course, such views are highly controversial, at least in the United States, where the General Assembly is harshly criticized in even its present, merely consultative role. A fuller discussion of this issue would have added greatly to the value of the book, especially given Fawcett's extensive diplomatic experience.

Fawcett's second chapter, "Uses of Outer Space," in fact consists primarily of an excellent discussion of state responsibility for space activities. Under the Convention on International Liability for Damage Caused by Space Objects,⁹ which entered into force in 1972, the launching state bears international responsibility for damage caused by its spacecraft. At least partly as a result of this treaty, the U.S.S.R. agreed to pay Canada some \$3 million after Cosmos 954 disintegrated and fell to earth in 1978.¹⁰ Questions remain under the Convention as to how liability is to be determined in the case of a multinational mission or a satellite of an international organization (pp. 28-29). The Liability Convention does, however, provide guidelines that should resolve most questions.

The third chapter, "Space Operators," contains a discussion of the role of private enterprise as well as a brief note on regional agencies' space activities. These sections provide a brief history of space activities, and a resumé of the status of private and regional space activities at the time Fawcett was writing. Fawcett's own views on the proper role of private enterprise in the development of space remain below the

9. Convention on International Liability for Damage Caused by Space Objects, *done* Mar. 29, 1972, 24 U.S.T. 2389, T.I.A.S. No. 7762.

10. P. 27. Canada proposed several theories of liability to the Soviet Union, including trespass by mere fact of entry, as well as invoking the Liability Convention. The Soviet Union in settling the claim made no admission of its liability under any of these approaches. See Schwartz & Berlin, *After the Fall: An Analysis of Canadian Legal Claims for Damage Caused by Cosmos 954*, 27 MCGILL L.J. 676, 678 (1982). No other incident has yet produced a claim under the Convention. The fall of Skylab in 1979 resulted in an American admission of responsibility, but no actual damages were ever reported. *Id.* at 679.

surface in this chapter. He seems to endorse a private role, limited by the principles of state responsibility for private actions and "equitable sharing" of the rewards, such as the Moon Treaty provides. Fawcett notes that budgetary constraints on public sector involvement make "regulated working arrangements between private enterprise and public agencies" necessary (p. 42).

Part I, for its faults, provides a generally accurate and comprehensive survey of the treaties relating to outer space, and their applications to various operations in orbit. Part II's discussion of specific areas of space activities is, unfortunately, less consistent. Several chapters are marred by factual errors and omissions which detract from the work's usefulness as a snapshot of developments to date in the field. The first chapter on applications, concerning telecommunications, is the strongest of Part II. It is also the longest — roughly as long as the other four combined — and the most fully documented. The remainder of Part II should be read as an essay. Several chapters suffer from inadequate citation, which may account for their factual errors. The telecommunications chapter is immune to this objection.

Fawcett describes in some depth two foci of controversy in the international legal community: the international scheme for apportioning rights to use the radio spectrum (pp. 52-62), and proposals for direct satellite broadcasting (pp. 65-77). Both of these issues pit the United States and Western European nations against the bulk of the developing world. Current space users seek a minimum of regulation of their activities, while the Third World wants a fair share of orbital resources to remain under its control.¹¹ Direct broadcasting by satellite offers the potential to beam programming to a whole hemisphere at a time, and is opposed by many governments that wish to retain national control of their airwaves.

Fawcett's chapters on "Space Stations" and "Astronomical Observation" are mixed bags, primarily consisting of snapshots of these fields as they existed when Fawcett was writing. His information seems to be limited to about 1981,¹² and many of his observations and predictions are now seriously dated.¹³ Other facts Fawcett reports are

11. See Levy, *Institutional Perspectives on the Allocation of Space Orbital Resources: The ITU, Common User Satellite Systems and Beyond*, 16 CASE W. RES. J. INTL. L. 171, 172-82 (1984).

12. This date is the conjecture of the reviewer. Fawcett cites sources for his statements irregularly, although all but two of his footnotes cited publications dated 1981 or before. The two exceptions both refer to 1983 issues of *New Scientist*, a British science weekly.

13. For example, Fawcett notes that NASA plans to acquire a total of five shuttles through 1986, instead of the actual four, p. 86 (although consideration of a fifth orbiter was subsequently renewed after the loss of Challenger in January 1986). He also reports the possibility that the Galileo probe to Jupiter and Voyager II's flybys of Uranus and Neptune might be canceled for lack of funds — but both probes were rescued from the budgetary ax several years ago, and Voyager successfully flew by Uranus in January 1986. See *Voyager Discovers "Boulders" in Rings*, N.Y. Times, Jan. 28, 1986, at C1, col. 1; *Planned Shuttle Schedule for 1986*, N.Y. Times, Jan. 31, 1986, at 15, col. 3 (reporting planned launch of Galileo probe). Finally, while Fawcett

simply incorrect.¹⁴ Most of his chapter on astronomy, however, concerns itself with a precis of modern cosmology. Fawcett describes the development of our current concepts of the Milky Way Galaxy, the expansion of the universe, and the Big Bang theory of the universe's creation (pp. 96-105). Fawcett also provides a full-page box explaining such astronomical concepts as the light-year and the parallax. However interesting, this lengthy coverage (about eleven percent of the entire book) seems slightly out of place, since it bears no relation to international law, and only an indirect and unexplored connection to activities in space. Fawcett's interest in the subject appears to be the main reason that this topic, as well as others, was included.

The final chapter of Part II, on the strategic uses of outer space, opens with Fawcett's view of the arms race:

Technology is dominant. In face of the production and use of armaments national social choices have given way to a "primitive will to survive" and, to borrow a Darwinian idea, advanced social man has become an instrument of technological selection. Unrestricted technology produces the "force multipliers," which constantly destabilize arms parity as a political objective; and the fittest to survive become those selected by the technological advances. [pp. 106-07]

Unfortunately, Fawcett does not explore this view deeply. Rather, he merely states his conclusion, without offering any support or pursuing the implications of his ideas. He then moves on to discuss the role of orbital systems in controlling the arsenals of the superpowers, and in their surveillance of each other. He concludes the chapter with a section on antisatellite weapons, and that section's only statement about currently available weapons is simply untrue: "The US made a destructor satellite operational in 1979. It was designed to intercept its satellite target, when its cargo of explosives would be detonated, but it was at this first stage limited to low-orbit targets" (p. 113). Both the timing and description of the device apply far more accurately to the Soviet antisatellite device than to its American counterpart, which was not tested until 1985, and which consists of a nonexplosive ramming device launched from an F-15 fighter.¹⁵ Fawcett later correctly indi-

states that an orbiting radar of Venus was canceled, p. 93, a similar probe has since been funded and is reportedly scheduled for launch by the United States in 1988. See, e.g., *Soviet Venera 16 Radar Spacecraft Photographs Large Area of Venusian Surface*, AVIATION WEEK & SPACE TECH., Feb. 11, 1985, at 70. In general, Fawcett's information on European events and plans seems far more timely and accurate than that on their Soviet and American counterparts. For a more thorough recent survey of current and future space activities, see another British book, G. PARDO, *THE FUTURE FOR SPACE TECHNOLOGY* (1984).

14. He cites the Viking I probe as reaching Mars in 1975, instead of 1976. P. 91. See *Viking Robot Sets Down Safely on Mars and Sends Back Pictures of Rocky Plain*, N.Y. Times, July 21, 1976, at 1. Fawcett also claims that "[i]n April 1983 the USSR launched the largest space telescope to be placed in Earth orbit, having a mirror 3.8 m in diameter. Its elliptical orbit is itself enormous, the satellite carrying the telescope being at its furthest point nearly half-way to the Moon." P. 94. I have found no other report of such a launch.

15. See, e.g., G. STINE, *CONFRONTATION IN SPACE 81-82* (1981); *Test Asat Launched Au-*

cates that the U.S. device is launched from an F-15 (p. 117), but again mistakenly claims that the device is explosive. Factual slips like these unfortunately degrade Fawcett's credibility as an expert in this field.

Structurally, *Outer Space* consists of two parts and two appendices. The text could have been improved by an introduction explaining the aim and organization of the work, although these become clear as one reads along. The first appendix is a time line, including Fawcett's choices of the major events in space operations and international action. A few of his choices, like "1983 June. Challenger (US) joined space station" (p. 123), which must refer to the addition of the ill-fated Challenger to this country's space fleet, are especially impenetrable given his exclusion of the 1981 first launch of the Columbia. Appendix B is more helpful, including the full texts of such major treaties relating to outer space as the Outer Space Treaty of 1967, the Moon Treaty, the Convention on International Liability for Damage Caused by Space Objects (1972), and the Convention on Registration of Objects Launched into Outer Space (1976).¹⁶

Overall, *Outer Space* presents a mixed picture. It contains much of value, especially Part I's discussion of the Outer Space Treaty and its siblings, but the book is repeatedly marred by omissions, inapt assumptions, and simple factual errors. The worst of these are confined to the second half of Part II, which is in any case rapidly being outdistanced by the march of events. Part I can, however, stand on its own, and if read with an appreciation of Fawcett's internationalist sentiments, should prove a useful reference to the current international scheme governing activities beyond this planet.

— Timothy J. Chorvat

tonomously from USAF F-15 Carrier Aircraft, AVIATION WEEK & SPACE TECH., Oct. 7, 1985, at 18; Congressional Office Warns Arms Pact Will Not Halt Asat Threat, AVIATION WEEK & SPACE TECH., Sept. 30, 1985, at 20, 21.

16. Convention on Registration of Objects Launched into Outer Space, *opened for signature* Jan. 14, 1975, 28 U.S.T. 695, T.I.A.S. No. 8480.