Studies in International Space Law by **Bin Cheng** [Oxford, Clarendon Press, 1997, ISBN 0-19-825730-9, lxviii+798 pp; hard cover]

The jacket of *Studies in International Space Law* describes the volume in the following terms:

> This volume of studies in International Space Law follows the development of this entirely new area of law, from its birth to its position today as a major branch of International Law. The essays examine in depth all the major subjects in the field...

It is a bland introduction for a work such as this. True it is a volume of studies that examine in depth the major subjects in the field, but it is more.

The volume is not a mere collection. It is a celebration of the major developments in international space law as seen through the eyes of one person. It is a selection of essays and articles that span both time and scope and consistently published at the cutting edge of development and change. It is a critical and challenging collection, insightful and visionary. It teases and provokes in its six parts containing 25 chapters. As stated in the Preface,[1] it is a selection of "26 articles written over a span of some 40 years, beginning with one which was actually published the year before mankind first succeeded in reaching outer space".[2]

For all these reasons it is an awesome collection. And it is also special, because it provides the personal dimension of Cheng, a scholar and a master in the field.

Cheng is one of a number of pioneering writers in space law. The field was led by E Laude, a Belgian lawyer who first gave notice of the imminent arrival of space law in his work *Comment s'appellera le droit qui régira la vie de l'air?*[3] during the turn of the 20th century. The other members of this elite club include John Cobb Cooper and Andrew G Haley.[4]

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[1] At vii.

[2] This was in 1956, a year before the launch of Sputnik.

[3] (1910) 1 Revue Juridique Internationale de la locomotion Aérienne 16-18.

[4] Yet others include Gyula Gàl, CW Jenks, EA Korovin, J Kroell, Vladimir Mandl, MS McDougal, A Meyer and GP Zhukov.

The volume shows that like most branches of law, space law has been reactionary in nature. Modern international law evolved and to a large extent was created[5] in Europe in the sixteenth and seventeenth centuries as the law of nations. Dictated by necessity, international law developed and grew, to regulate and coordinate activities and relationships on the international plane, as these activities and relationships developed and grew. For instance, it was created to regulate diplomacy as more states interacted with each other, and it regulated activities like international trade and commerce as states commenced business with one another.

It is interesting that even as late as the 1960s, certain states, including France and India, questioned the existence of international space law.[6] This was approximately a decade after the USSR launched Sputnik I in 1957, the date that is accepted as the year of the birth of space law. However, the first universal attempt at the regulation and coordination of outer space and its activities bore fruit on 19 December 1966 when the General Assembly passed Resolution 2222(XXI) with a Treaty annexed. On the tenth anniversary of the launch, this treaty, known as the Treaty on Principles Governing Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, more commonly known as the Outer Space Treaty, was signed on 27 January 1967.[7]

The volume starts with an Introduction. It provides the summaries of the various chapters[8] found in the six Parts entitled:

1. International Law and Space Law
2. The United Nations and Outer Space
3. United Nations Treaties on Outer Space
4. Outer Space, Astronauts and Space Objects
5. Military Use of Outer Space
6. Commercial Uses of Outer Space and International Law.

The titles signpost the chronological development of space law and the topics that preoccupied the international space community during the

[5] For instance, by the Dutch jurist, Grotius (1583-1645), often referred to as the "father" of the law of nations. Others include Pufendorf (1632-1694) and Bynkershoek (1673-1743).
[6] See notes 1-2 at 70.
[7] As at 1 February 1999, 122 states were parties to this treaty: Office for Outer Space Affairs, United Nations, United Nations Treaties and Principles on Outer Space, A/AC.105/722, A/CONF.184/B/15, Vienna, 1999 at 52-65.
[8] At lx-lxviii.

respective periods they were published in. This may be gauged from the dates of the first articles included in each Part,[9] which appear as follows:

1. Chapter 1 – In the Beginning: the International Geophysical Year (1956)
2. Chapter 6 – The United Nations and Outer Space (1961)
3. Chapter 9 – The 1967 Space Treaty (1968)
4. Chapter 13 – Outer Space: The International Legal Framework – the International Legal Status of Outer Space, Space Objects and Spacemen (1979)
5. Chapter 19 – Definitional Issues in Space Law: the 'Peaceful Uses' of Outer Space, including the Moon and Other Celestial Bodies (1983)
6. Chapter 21 – Communications Satellites (1971).

As noted above the Introduction reviews the contents of the volume:

> Part I groups together a number of papers on the relationship between international law and space law.[10]
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> Part II is devoted in particular to the rôle of the United Nations, including its related agencies.[11]
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> Part III contains detailed studies of the drafting history and provision of four of the five treaties relating to outer space drafted by the United Nations.[12]
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> Part IV deals in some detail with the definition and legal status of respectively outer space, astronauts and space objects, and installations on celestial bodies, in the light of both general international law and the several UN treaties relating to outer space.[13]
>
> Part V is devoted to the study of the military use of outer space.[14]

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[9] The exception is the last, although one quickly notices that the very next chapter was first written in 1992 on the Legal and Commercial Aspects of Data Gathering by Remote Sensing: Chapter 22 at 572-597.
[10] At lxi.
[11] At lxii.
[12] At lxv.
[13] At lxvi.
[14] At lxvii.

> Part VI covers various aspects of the commercial uses of outer space, an area of ever-increasing importance.[15]

In drawing the parameters of the volume, Cheng distinguishes international from domestic space law. Although his intention is to address the former,[16] he recognises that:[17]

> alongside international space law, there are at the same time various systems of domestic space law...For the moment at least, the most important branch of space law is undoubtedly international space law...

Cheng comments that space law is not a law that governs extraterrestrial beings. Also, space law is not an autonomous system of law independent of an authority on earth.[18] As generally understood and defined, space law is now in its fourth decade. It is here to stay and has put to rest the scepticism and derision that greeted this branch of law when it first came into being in the second half of the 20th century.[19]

Cheng reiterates that "space law is merely a term of functional classification,[20] and international space law an "integral part"[21] of public international law.[22] He reminds us that issues of sovereignty and territory are just as relevant to outer space. He borrows Judge Max Huber's dictum in the *Island of Palmas case,*[23] an arbitration on the question of the Island's sovereignty, and states:[24]

> [T]erritorial sovereignty under international law 'serves to divide between nations the space upon which human activities are employed'.

Cheng therefore spends time on the definition and delimitation of outer space, noting its important but controversial nature.[25] The reader will find

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[15] Ibid.
[16] At lxi.
[17] Ibid.
[18] Ibid.
[19] At lx.
[20] At lxi.
[21] Ibid.
[22] Ibid.
[23] (1928) 2 Reports of International Arbitral Awards 829 (Netherlands v United States).
[24] At lxi.
[25] See discussion at 292 below.

that this is a pervasive topic that touches practically every other topic discussed. The boundary between airspace and outer space is something we need to know and understand so that we can characterise what we do in outer space and whether we can do it. These are significant issues owing to their direct bearing on the rationalisation and equitable use of outer space.

For example, part of outer space is the geostationary orbit that has crucial implications in relation to the commercialisation of outer space and Cheng discusses this in Chapter 13.[26] The geostationary orbit is a phenomenon where satellites are parked and from where the international community derives real and highly visible benefits. It has great commercial value as a consequence. He states that using communications satellites and remote sensing satellites provides "two of the most important commercial uses of outer space".[27]

However, the geostationary orbit is not limitless but is a limited resource that should carry the label "common heritage of mankind". It is intended for the benefit of everyone and cannot be appropriated. Hence, it is a regime that should be properly regulated and watched over by the international community as a whole. Cheng therefore devotes the whole of Part VI to the commercialisation of outer space describing it as "an area of ever increasing importance".[28]

Although outer space may be used for commercial purposes, the overriding consideration is that any activity in outer space should be for peaceful purposes only. "Peaceful uses" is discussed in Chapter 19 in the context of Article IV of the 1967 Outer Space Treaty. Connected to this is Chapter 20 which "discusses the legality of using outer space for military purposes under both general international law and relevant international agreements".[29] Understandably, this chapter, written in 1992, does not mention the United Nations Institute for Disarmament Research (UNIDIR) project known as *Civil Space Systems: Implications for International Security*[30] published in 1993. Cheng is a contributor to this important project, which identifies the space systems that may be put to a dual use, namely, civil and military.

[26] At 397-398.
[27] At lxvii.
[28] At lxvii.
[29] Ibid.
[30] Edited by Stephen E Doyle. This project is referred to elsewhere in other discussion, for example, note 8 at lxii. For further discussion on demilitarisation see 408-424.

The express message given in the volume is that the international community is most unwilling to address the boundary issue. Apart from the usual reasons for this, based on economics, politics, strategy and even philosophy, Cheng adds to the list by stating that the most prominent is the "strong opposition" of states to resolving this irksome issue.[31] Other reasons offered are the existence of:[32]

> a considerable amount of ambiguities and uncertainties, mostly due to a lack of sufficient official notice of, or interest in, the matter, or a shortage of legislative time...

So, how does Cheng himself deal with this question on the boundary between airspace and outer space? In other words, where does airspace end and outer space begin?

On this subject, Cheng draws a clear line between "definition/delimitation/ demarcation" on the one hand, and "functional versus spatial delimitation" on the other hand. This distinction is apparent in the Index[33] where under the entry on "boundary between airspace/national airspace and outer space" there are these two references.

Cheng discusses this unresolved issue at different junctures in the volume. In addition, he devotes Chapter 14 exclusively to:[34]

> the question of the definition and delimitation of outer space in the light of the major premises of international law, and argues for an early resolution of the issue.

As early as 1956 Cheng had called upon states to end the controversy on the upper limit of airspace by picking any figure, "be it 100, 200, 500, or 1,000 kilometres," and using it as the precise upper limit in an international agreement.[35] In his words, this "would be infinitely preferable" to the "supremely vague"[36] situation. He states:

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[31] At lxvi.
[32] Ibid.
[33] At 774.
[34] At lxvi.
[35] At 8.
[36] Ibid. This is referred to again at 393.

> Perforce, the only criterion available and acceptable is the physical limit of the earth's atmosphere, however uncertain and ill defined this may be A more precise knowledge of this subject will, moreover, certainly result from the many experiments to be carried out in the forthcoming International Geophysical Year.[37]

Cheng raised this issue again in 1979 during lectures delivered in the University of Tessaloniki in Greece and published in the *Thesaurus Arcoasium* in 1981.[38] The international discussion takes place within the context of the jurisdiction over astronauts and space objects. Here, he states once again that the demarcation problem is a continuing problem and acknowledges that even now it remains a "very difficult" problem.[39]

With the aid of a diagram he shows that in the 18 years after the launch of Sputnik I, the lowest perigee achieved so far has been by the United Kingdom at 96 kilometres.[40] But on the whole, he finds that most other satellites have perigees above 110 kilometres. On the basis that all states are in agreement that all satellites that orbit the earth have done so in outer space, he concludes:[41]

> On this basis, one can, in applying 'the lowest perigee so far achieved by any unchallenged satellite' test, say that at 96 kilometres one is definitely in outer space. Should one have doubts...then the 110-kilometre line should satisfy even the most sceptical.

Cheng states that there is increasing support for this view, including the Soviet Union. In 1979 it had two proposals, but with a condition attached:[42]

> [F]irst the recognition of the region above 100 (110) kilometres altitude from the sea level of the earth as outer space, and secondly, the establishment by treaty of a boundary between airspace and outer space at an altitude not higher than 100 (110) kilometres above sea level. What the Soviet Union has packaged with its proposal, however, is a right of passage through a State's national airspace for foreign space objects.

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[37] At 9.
[38] The lectures appear as Chapter 13 at 383-424. It is the first chapter of Part IV.
[39] At 393.
[40] At 397.
[41] At 396-397.
[42] At 397. For further discussion see 397 et seq.

However, there are still some states, notably the United States, that prefer the functional approach to demarcation.[43] Cheng states:[44]

> The functional approach [or the wait and see approach] has obvious appeals for space powers insofar as, once a space activity has been proclaimed lawful (and there is hardly anyone there capable of verifying or, still less, challenging a space power's own pronouncement on the subject), it will not depend on the consent of third States even when such space objects go through the latter's airspace. The functional approach also leaves States with the possibility of not making up their mind for the moment on where the boundary line should be.

Hence, the debate continues. Cheng's own position has not wavered since 1966 and what he said then "remains true":[45]

> At present, not only among laymen, but even among some of those who interest themselves in the subject, there is still much speculation as to where airspace sovereignty ends and where outer space begins: 50 miles, 75 miles, 100 miles, 500 miles, or even *ad infinitum.* Now, if I recall rightly, the lowest perigee of artificial satellites so far placed in orbit is 80 odd miles above the mean sea level.

However, what is more true is that unless the two superpowers are *ad idem,* the international community will continue to be in limbo on this issue. It supports the saying that some states are more equal than others. As Cheng himself has recognised, "in the making of rules of international law, the weight of States certainly is not equal".[46]

In further discussion Cheng opens Chapter 14 with the following extract which seems to sum up at least one aspect of this debate:[47]

> In the subject index to the book *Law and Public Order in Space* (1963) by Professors Myers S. McDougal, Harold D. Lasswell, and Ivan A. Vlasic, there is found the following entry:

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[43] Ibid.
[44] Ibid.
[45] At 395.
[46] At 687.
[47] Refer to the first few lines of Chapter 14 on "The Legal Regime of Airspace and Outer Space: the Boundary Problem; Functionalism versus Spacialism: the Major Premises" at 425.

Boundary between outer space and airspace (a comedy of errors).

This entry is typical of the often pungent wit and humour with which the authors in the text of their masterly work exposed what appeared to them to be the fallacy and even folly of those who sought to draw a boundary – or to borrow a graphic expression from their at times rather esoteric terminology, a horizontal sheet – between airspace and outer space – people who have since been dubbed the spacialists. Instead, the authors firmly nailed to their mast the flag of functionalism – which goes well in any event with the authors' New Haven policy-oriented approach to international law pioneered by Professor McDougal.

And in another extract, Cheng refers to the article by Professors McDougal and Lipson published in 1958 in which they predicted the following:[48]

> [W]ith the growing awareness of the difficulties retained by fixed lines or putative horizontal sheets and of the factors that do and should affect policy, the problems will *transform itself from one of boundaries to one of activities,* in an appropriate pattern of reciprocities and (potential) retaliations; and the now vexed *question of the legal 'status' of outer space will be discarded* for practical purposes, as the *question of 'status' was not discarded* when negotiations *on the use of airspace* came to a point of concrete agreement.[49]

In other discussions, Cheng leads off with questions that also reflect the chapter headings. One such is Chapter 7, "United Nations Resolutions on Outer Space: 'Instant' Customary International Law?"[50] Although the question itself is controversial *prima facie,* it appears that Cheng has included this so that he may answer his critics. He states:

> Chapter 7 in no way questions the well-known truism that under the UN Charter, General Assembly resolutions are not legally binding except in budgetary and administrative matters.

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[48] At 425-426.

[49] By referring to his *Law of International Air Transport* (1962, Stevens & Sons, London), an acknowledged standard work on the subject, Cheng is able to show that in aviation the question of airspace sovereignty is never for a moment discarded.

[50] At 125-149.

However, Cheng comments that when this Chapter first appeared as an article in the Indian Journal of International Law[51] it was either at times criticised, misunderstood, rejected or offhandedly dismissed.[52] As a result, Cheng uses this opportunity to exercise his right of reply and states:[53]

> Unfortunately, the journal in which the article was first published is not always available in some of the smaller international law libraries, but this does not appear to have deterred some critics from voicing criticisms without having seemingly ever seen the article and still less read it. They seem mostly either to ignore the question mark in the title and take the title to be a statement, or assume the writer's conclusion to be in the affirmative. On those assumptions, some reject the concept of 'instant' international law by arguing inconsequentially and at length the truism that General Assembly resolutions are in principle not legally binding. Others rather offhandedly dismiss the concept of instant 'customary law' on the mere ground that it is a contradiction in terms, ignoring that there is a figure of speech known as oxymoron, and sadly unaware, it would appear, of the fact that the traditional term customary international law, used as the equivalent of general international law, is increasingly being recognised as a misnomer, because by far the greater part of general international law is based on custom in the sense of long practice. As Judge Sir Robert Jennings has pointed out, 'it is not custom at all, and never was.' More cynically, yet other detractors choose to cast dark shadows of suspicion on the concept of instant international law as a Third World plot to give greater weight to General Assembly resolutions – obviously not knowing that it was the United States which first put forward the idea that General Assembly resolutions can represent international 'customary' law.

He adds:[54]

> [In] trying to get to the heart of the matter, the conviction is reached that *opinio juris* in international law, which is a horizontal legal system, differs in meaning from *opinio juris* in municipal law, which is, as a rule, hierarchical in character. Whereas in a hierarchical system, a rule

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[51] (1965) 5 Indian Journal of International Law 23-48.
[52] At lxiv.
[53] At lxiv-lxv.
[54] At lxiii.

> of customary law requires both *opinio juris* and usage, in a horizontal legal system such as international law, where all the subjects of the system are the same its law-makers, the essential constituent element of a rule of general international law, or what, as the US delegate reminds us, Article 38 of the ICJ Statute calls 'international custom', is (to use the terminology of Article 38 again) its being generally 'accepted as law' – as a rule of general international law. All that is needed, therefore, is an *opinio generalis juris generalis* among States. The rôle of practice, instead of being constitutive, becomes essentially evidentiary. This leads thus to the phenomenon of the one-element general international law, and from there to the possibility of instant general international law, inasmuch as the *opinio generalis juris generalis* of States is capable of instantaneous formation and change. The fact that general international law is still called customary international law or simply international custom by the ICJ Statute and, out of habit, by many international lawyers explains the use of the expression one-element custom and the much misunderstood 'international custom'.

Several writers have written on this topic including the late Professor David Johnson, Cheng's good friend. Johnson was one of the first to write an article on this topic.[55] Johnson's article appeared as "The Effect of Resolutions of the General Assembly of the United Nations" (1955-56) 33 British Year Book of International Law 97.[56] More recently, Professor Sloan revisited this topic in an article that appeared in the same Year Book in 1987.[57] At the same time, in the southern hemisphere, there was a similar interest in this part of the world. For example Professor Alex C Castles wrote two articles on "Legal Status of UN Resolutions" (1967-1970) 3 Adelaide Law Review 68, and "The Status of General Assembly Resolutions" [1968-1969] Australian Year Book of International Law 193.

On this issue Tanaka J in the *South West Africa Cases,* in a dissenting opinion, states simply:[58]

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[55] Refer Obituary at xii above.

[56] Also, it was likely that Cheng and Johnson were both affiliated with the University of London at the time, in different Colleges.

[57] Sloan, "General Assembly Resolutions Revisited" (1987) 58 British Year Book of International Law 39.

[58] [1966] International Court of Justice Reports 6 at 292. For more views, see generally Cheng B (ed), International Law: Teaching and Practice (1982, Stevens & Sons, London).

> What is required for international custom is the repetition of the same practice accordingly, in this case resolutions, declarations, etc., on the same matter in the same, or diverse, organizations, must take place repeatedly...

The articles selected for inclusion in the volume are directed more towards law creation rather than a mere reproduction of what the law is. Cheng does this by examining topics in light of their uncertainty, gaps and controversy. As he says, unless the problems are identified and addressed, they provide "a foretaste of the disputes to come."[59]

On his own constructive contribution to the debate, Cheng states that his aim is to stimulate discussion in a concrete rather than speculative manner, and along practicable rather than idealistic lines.[60] This epitomises the pragmatic Cheng and prompts the inclusion of practical aids.[61]

There is a final part, the Epilogue entitled "The Contribution of Air and Space Law to the Development of International Law".[62] Here, Cheng discusses the contribution of both air and space law to the development of international law. He refers to a number of air conventions, including the 1929 Warsaw Convention for the Unification of Certain Rules relating to International Carriage by Air. To him, the Warsaw system is "an example *par excellence* of the benefits of international uniform law."[63] He refers also to "the successful rule-making rôle" of the International Civil Aviation Organisation ("ICAO")[64] in international air transport activities and acknowledges its contribution to the development of air law.[65] Thus, Cheng ends the volume by reminding readers that international space law is first and foremost a branch of international law. He adds:[66]

> [B]oth international air law and international space law are essentially products of the twentieth century. The latter came into being in fact

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[59] At lxii.
[60] At 51.
[61] See below.
[62] At 671-697.
[63] At 672 et seq.
[64] At 691 et seq.
[65] This was reiterated at the recent Workshop on Space Law in the 21st Century, Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space, Vienna, 19-30 July 1999 (Proceedings to be published).
[66] At 671.

> only in the second half of the twentieth century. Yet these two branches of international law have, in this relative short space of time, probably contributed more to the understanding and development of general international law than any other branch of international law.

This position is reflected in the Table of Cases.[67] Although not many, the reader will find that every case cited deals with fundamental principles of public international law. For example, *Anglo Norwegain Fisheries*[68] and *Corfu Channel*[69] are familiar favourites. The Table of Contents is very comprehensive,[70] hence the Summary Contents preceding it.[71] An extensive list of Abbreviations and Acronyms follows,[72] including a Glossary of Foreign Words and Technical Terms,[73] both useful even beyond the volume.[74] There is a List of Figures, Maps, Plates and Tables,[75] followed by an Appendix, Bibliography and Index at the end of the volume.[76] There is acknowledgment that the editing process will have to improve in future as shown by the inclusion of an errata slip.

As a text, the volume is packed with valuable comment and information. It is full of strong ideas and discusses the lessons learnt along the way.[77] It is both an exhaustive and exhausting volume.

This volume is highly recommended for a reader who is seriously engaged in the practice of space law or its study. As claimed, it is significant and represents a chronology of the development of space law during the past four decades. It is as much a text on international space law as it is on public international law, with the former being continually linked to the latter in discussion. As a project, this profound volume is testimony to Cheng's eminence as a contemporary international jurist, a pioneer and a scholar.

Alexis Goh

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[67] At lvi-lvii.
[68] [1951] International Court of Justice Reports 116.
[69] [1949] International Court of Justice Reports 4.
[70] At xv-xxiv.
[71] At xi-xiii.
[72] At xxxv-xliii.
[73] At xliv-lv.
[74] See xxxv-xliii.
[75] At lviii-lix.
[76] These begin at 701, 755 and 771 respectively.
[77] At lxi.