The Scramble for Asteroids: vs. The Common Heritage of Mankind/Province of Mankind Principles.

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Spurring Private Aerospace Competitiveness and Entrepreneurship Act of 2015

An Act to…

To facilitate a pro-growth environment for the developing commercial space industry by encouraging private sector investment and creating more stable and predictable regulatory conditions, and for other purposes

Key Features of the The US Space Act

- Sec. 101. Short title.
- Sec. 102. International launch competitiveness.
- Sec. 103. Indemnification for space flight participants.
- Sec. 104. Launch license flexibility.
- Sec. 105. Licensing report.
- Sec. 106. Federal jurisdiction.
- Sec. 107. Cross waivers.
- Sec. 108. Space authority.
- Sec. 109. Orbital traffic management.
- Sec. 110. Space surveillance and situational awareness data.

Sec. 111. Consensus standards and extension of certain safety regulation requirements.

Sec. 112. Government astronauts.

Sec. 113. Streamline commercial space launch activities.

Sec. 114. Operation and utilization of the ISS.

Sec. 115. State commercial launch facilities.

Sec. 116. Space support vehicles study.

Sec. 117. Space launch system update.

TITLE II--COMMERCIAL REMOTE SENSING

Sec. 201. Annual reports.

Sec. 202. Statutory update report.

TITLE III--OFFICE OF SPACE COMMERCE

Sec. 301. Renaming of office of space commercialization.

Sec. 302. Functions of the office of space commerce.

TITLE IV--SPACE RESOURCE EXPLORATION AND UTILIZATION

Sec. 401. Short title.

Sec. 402. Title 51 amendment.

Sec. 403. Disclaimer of extraterritorial sovereignty.

Key Features of the The US Space Act

- The first law to contain US Values in space was the 1958 National Aeronautics and Space Act promulgated one year to the day after Sputnik was launched.
- Legal support for commercialisation of space in the US began way back in 1998 with the Commercial Space Act enacted to encourage the development of a commercial space industry.
  - But this law shied sensibly away from issues of appropriation of space and its natural resources.
- With a new genre of domestic laws, the US is speedily beaming-up the ideology of free market principles to fill the void of space.

Key Features of the The US Space Act

- Private-sector granted an eight year period to innovate without regulatory oversight.
    - -Is regulatory oversight not an obligation under flag state principles of public int. Law?
    - Possible conflicts with Art VI of the OST (1967), Moon Treaty Art 14.
    - Possible issues with major provisions of the Liability Convention 1972.
- protection on spaceflight participants from financial ruin as a result of liability for participation in commercial spaceflights.
- With these changes capital markets will swing into action and begin to incorporate the mining of asteroid s into their investment plans.
- All these will apparently occur on the strength of controversial domestic legal framework for such operations. See Gérardine M. Goh Escolar, "Satellite Communications Regulatory, Legal and Trade Issues" in Joseph N. Pelton, Scott Madry, Sergio Camacho-Lara eds. Handbook of Satellite Applications (Springer, 2013), p. 508

Key Features of the The US Space Act

- SEC. 102. INTERNATIONAL LAUNCH COMPETITIVENESS.
- (a) Sense of Congress.--It is the sense of Congress that it is in
- the public interest to update the methodology used to calculate the
- maximum probable loss from claims under section 50914 of title 51,
- United States Code, with a validated risk profile approach in order to
- consistently compute valid and reasonable maximum probable loss values.
- SEC. 109. ORBITAL TRAFFIC MANAGEMENT.

(a) Sense of Congress.--It is the sense of the Congress that an

- improved framework may be necessary for space traffic management of
- United States Government assets and United States private sector assets
- in outer space and orbital debris mitigation.
- Not later than 90 days after the date of enactment of this Act, the Administrator of the NASa, in consultation with the Secretary of Transportation, the Chair of the Federal Communications Commission, the Secretary of Commerce, and the Secretary of Defense, shall enter into an arrangement with an independent systems engineering and technical assistance organization to study alternate frameworks for the management of space traffic and orbital activities.

Key Features of the The US Space Act

- ``Sec. 51303. Asteroid resource and space resource rights

``A United States citizen engaged in commercial recovery of an asteroid resource or a space resource under this chapter shall be entitled to any asteroid resource or space resource obtained, including to possess, own, transport, use, and sell the asteroid resource or space resource obtained in accordance with applicable law, including the international obligations of the United States.".

- [[Page 129 STAT. 722]]

Spinning Money from the Universe: Current Areas of Commercial Activity by Corporations in outer space.

- Exploitation by the provision of services from space to earth based customers (whether private or government) say by utilisation of satellite technology and telecommunication;
- Extraction of resources of an infinite nature such as the harnessing of solar or other wave energy;
- Commercialising Space experience for the use of space tourism, or for scientific training purposes.
- Manufacturing, servicing, research and development into space products and applications.
- Extraction of potentially finite resources such as mineral resources on asteroids or other planets.

Terminological Differences

- Privatisation vs. Commercialistion:
- Possible debate as to what is commercial
- In the United States the definition of commercial is based on whether the private sector is involved on not.
- Whereas in most European states if an activity generates revenue it is commercial and governments can generate revenue.

Province of all mankind

- Formidable principle enshrined in Arts I of the OST 1967 and Art 4 of the Moon Treaty
- Art I OST
  - "The exploration and use of outer space…shall be the province of all mankind".
- Art 4 Moon Treaty which states:
  - "1. …the moon shall be the province of all mankind and shall be …for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development".
- Although true that the US and the main space active states have not signed up to Moon treaty, they are bound by the "instant customary international law". See Bin Cheng

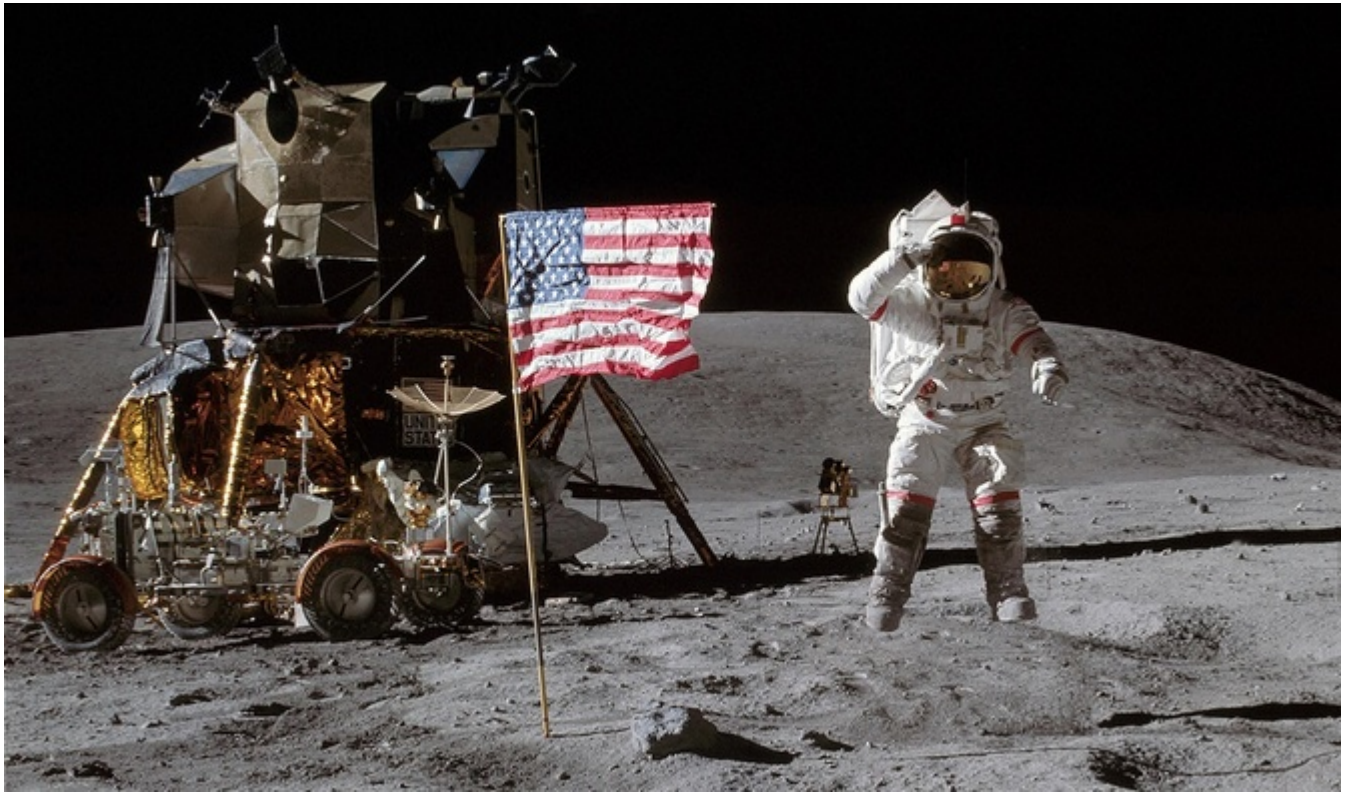
LEGALITY OF THE COMMON HERITAGE OF MANKIND PRINCIPLE IN SPACE LAW

- No Moon, no planet shall fly a single nations flag."
- Committee on the Peaceful Uses of Outer Space, 19 March 1962 A/AC. 105/PV. 2, pp. 13-15.

- The ideological Cold War that was at its height around 1957 produced an effect that was akin to the effects of the First World War on the shaping of air law earlier on in the 20th century.

Outer Space –Common Heritage of Mankind

- **Caveat humana dominandi, quod omnes tangit ab omnes approbatur.**



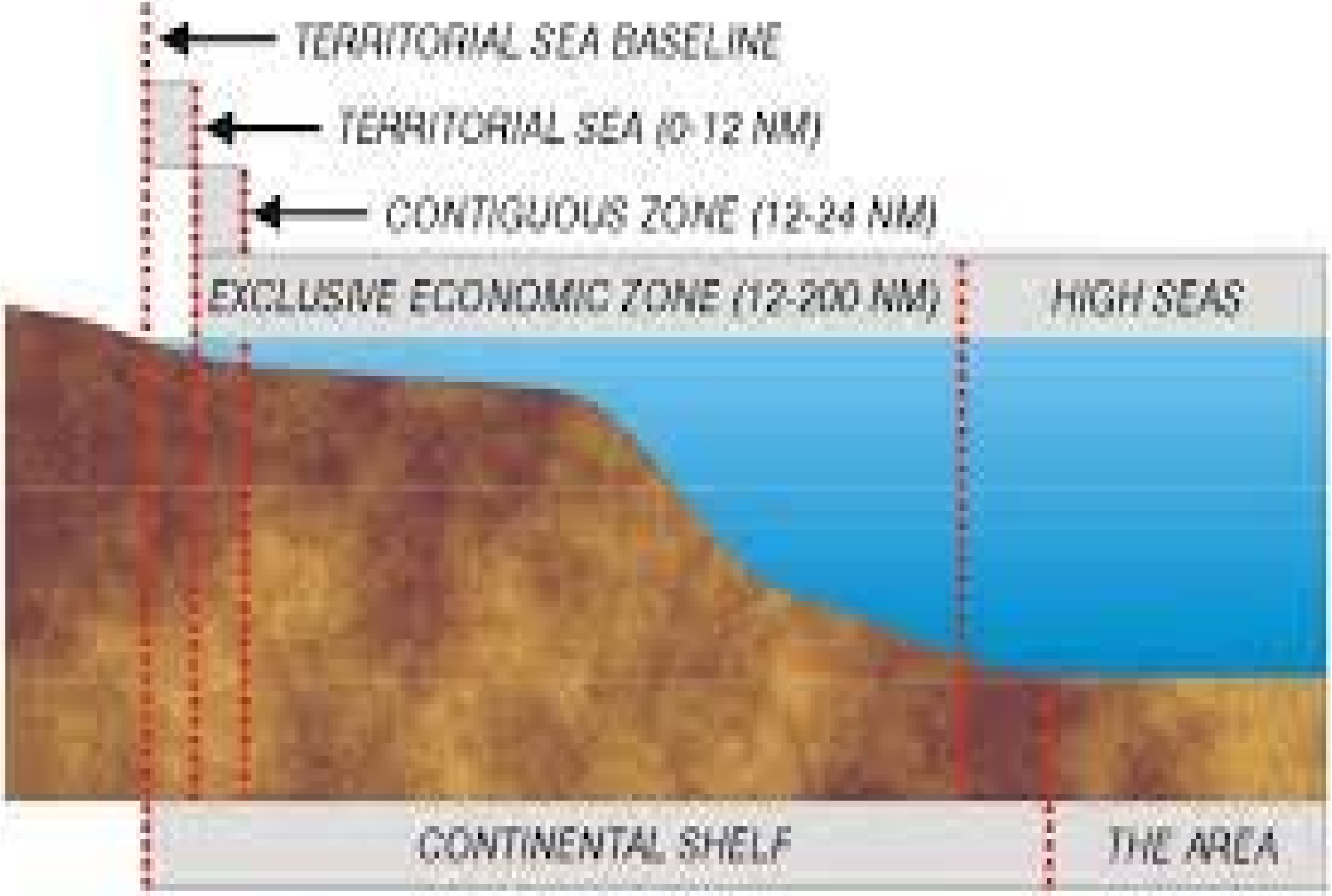
Development of the CHM principle

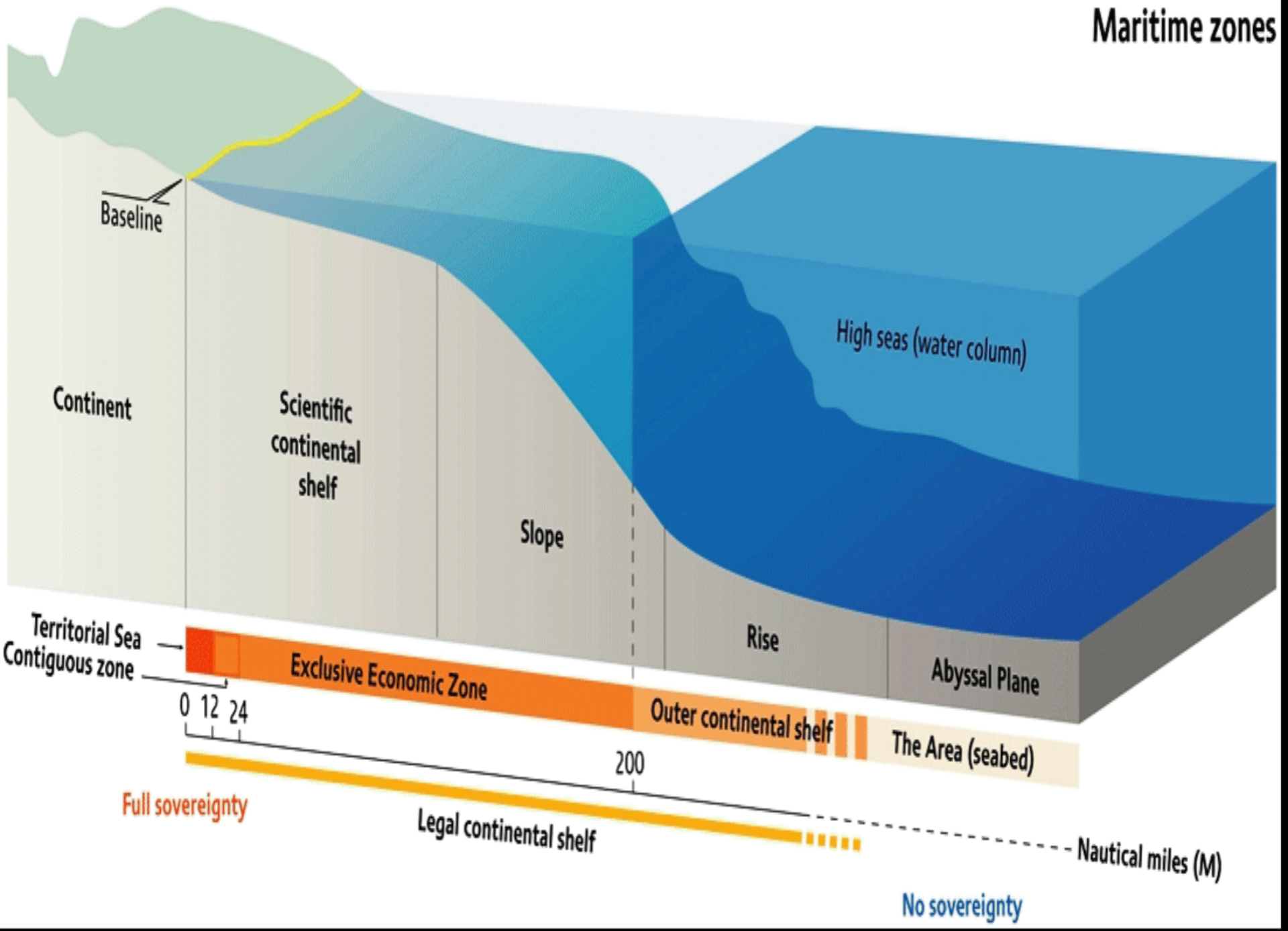
- By 1969, the UN General Assembly found it necessary to adopt resolution 2574 (xxiv) calling for a moratorium on deep-seabed activities.
- The Declaration of Principles Governing the Seabed and Ocean Floor and the Subsoil thereof, Beyond the limits of National Jurisdiction was adopted in 1970.
  - The Area (i.e. the deep sea bed) and its resources were then declared the "common heritage of mankind".
  - Thus, the Area cannot be appropriated and no rights could be acquired over it except in accordance with the international regime established to govern exploration and exploitation therein.
- The CHM concept may have been introduced to the Law of the Sea as a result of a speech made by Ambassador Pardo of Malta to the UN General Assembly on the future of the resources of the high seas in constituting the Common Heritage of Mankind.

- Sylvia Maureen Williams, "The Law of Outer Space and National Resources", Vol. 36 ICLQ, (1987) p. 144. U.N. G.A. Official Records, 22nd Session, Agenda Item 92 (2), Doc. A/6695, 18 August 1967.

- , the deep seabed has been recognised since 1970 as the "common heritage of Mankind" to be used to the benefit of all states and not only for those states with the capital and technology to exploit them. D.J. Harris, *Cases and Materials On International Law*, Fifth Edition (London: Sweet & Maxwell, 1998) p. 471.

JURIDICAL COMPONENTS:




Maritime zones
Baseline
Continent
Scientific continental shelf
Slope
Rise
High seas (water column)
Abyssal Plane
Territorial Sea
Contiguous zone
Exclusive Economic Zone
Outer continental shelf
The Area (seabed)
0 12 24
200
Full sovereignty
Legal continental shelf
Nautical miles (M)
No sovereignty

The CHM principle in Law of the Sea

- **The geophysical scope of application of the principle covers "The Area".**
  - **Article 1 of the convention to be the "seabed and ocean floor and subsoil thereof beyond national jurisdiction".**
- **It starts at the outer edge of the continental margin or at least at a distance of 200 nautical miles from the baselines.**
- **Thus, unlike the situation in space law the geophysical scope of the CHM principle is settled beyond reproach and there has been little or no attempt to subject it to controversy in academic writing.**
- **All exploratory and exploitative activities in the Area are to be conducted with the aim of securing the benefit of mankind as a whole by or on behalf of the International Seabed Authority (called the Authority), which is established under the Convention.**

- **It would appear that significant steps have been taken in recent times in recognition of this fact.**
- **While the common heritage of mankind status of the Area remains intact with the administration still under the Authority, recent Implementation Agreement introduces profound changes.**
- **Under the implementation agreement, the authority's mining arm, the “Enterprise” has lost its privileged position and is placed on a par with other “contractors”.**
- **In order to help it with deep-sea mining technology - transfer, obligations on the part of the Convention that had been stipulated have now been reduced to declarations of intent by the States parties, providing that the technology is not commercially available.**

ATTRIBUTES OF THE CHM PRINCIPLE IN ALL SPACES

- It is merely mischievous to overstate the obscurity of meaning shrouding the term CHM. It is indeed become possible to identify some basic elements of the CHM principle:
- (a) That the areas constituting a CHM cannot be subject to appropriation.
- (b) That the use of such area and the resources thereof shall be subject to a common management system.
- (c) That the concept in question implies an active sharing of the benefits derived from the exploration and exploitation of those areas;
- (d) That the area be used exclusively for peaceful purposes;
- (e) That the area be preserved for future generations in perpetual succession.

- See Williams, “Outer Space and Natural Resources”, *op. cit.*, p. 109; Dekanozov, "The Common Heritage of Mankind in the 1979 Agreement Governing the Activities of States on the Moon and other Celestial Bodies, *Proceedings of Twenty Fourth Colloquium on the Law of Outer Space*, (1981) p. 186.

CHM vs Province of Mankind Formula Any Difference?

- The CHM principle was first introduced to cover outer space by the words contained in Article 1 of the Declaration of Legal Principles (1962).
- By the time the Space Treaty (1967) was drafted the resolve of states to render outer space a commons for all humanity had deepened. This led to the formulation of Province of Mankind phraseology.
- In drafting of Article 1 of the Space Treaty (1967) the choice was between the terms ‘province of mankind’ and ‘common heritage’. Eventually the POM was adopted because it was thought to reflect more closely the principles of the freedom of outer space and the prohibition of appropriation.

CHM vs Province of Mankind Formula Any Difference?

- Eventually, clear reference to this term was rendered in Article 11 (1) of the Moon Agreement (1979). It reads that: “The moon and its natural resources are the common heritage of mankind”.
- In addition to this, Article 4 (1) of the Moon Agreement combines the two terms in the following manner: "The exploration and use of the moon shall be the province of all mankind and shall be carried out for the benefit and in the interests of all countries irrespective of their degree of economic or scientific development".
- It would, therefore, appear that as used in the Moon Agreement (1979) both terms emphasise different things although they are geared towards achieving the same noble objective.
- Article 4 (1) emphasises the co-operation of states parties in all their undertakings concerning the moon and other celestial bodies; on the other hand Article 11 coupled with Article 5 in particular provide the CHM Principle with legal teeth.

Arguments in favour of CHM validity

- Clear separation in space law between the use of outer space resources in outer space for scientific experimentation and that of exploitation or mining for repatriating and sale.
- The reasonable use doctrine in the Moon Agreement Article 6 (2) for instance, permits the usage of minerals and other substances of the Moon in quantities appropriate for the support of their missions. This very much falls short of permitting mining for purely monetary gains.
- Space law expresses an intention not only to maintain outer space and its celestial bodies as common property until an exploitative regime is set up but includes
- an obligation to share very generously benefits derived from scientific knowledge about outer space between all states irrespective of their degree of economic or scientific development (Article 4 (1) Moon Agreement (1979)).
- states advised to make a portion of such samples available to other interested states Parties and the international scientific community for scientific investigation (Article 6 (2) Moon Agreement (1979).
- the regime of equal access to outer space created in the treaties has become part of customary international

Arguments against the legal validity of the CHM principle

- (1) That the term Common heritage of mankind lacks any legal or scientific clarity and therefore, means everything and nothing at all.
- (2) It is claimed that the preamble to the Outer Space Treaty (1967) in fact recognises the exploitation of outer space.
- (3) That Article 1 of the Outer Space Treaty (1967) (which contains the province of mankind formula a necessary adjunct of the CHM principle) is merely 'a statement of general goals' and should be seen as no more than a moral and philosophical obligation.
- (4) That the general principle of non-appropriation is in effect circumscribed to a large extent by treaty provisions designed to facilitate the exploration and use of outer space in that Article 1 refers to "use"; therefore, some form of appropriation must be permissible in order to facilitate the use contemplated in Article 1.

The Oduntan Response to the 7 grounds of challenge to the CHM principle

"The arguments certainly do not justify any legal reasoning that limits the operation of the CHM principle in outer space in such a manner as to permit national or private appropriation and to recognise extensive property rights in space. Suggestions that sovereignty be introduced into outer space through a loose interpretation of the CHM principle or in any other form whatsoever is a form of legal heresy and should be dismissed for the following reasons".

OUTER SPACE _*RES NULLIUS* OR *RES EXTRA COMMERCIUM*?

- In order to understand the legal status of outer space, it is considered important to determine as much as possible whether *res nullius* or *res extra commercium*.
- Christol rightly points out that there may be a need to identify the characteristics of the CHM principle and to distinguish it from such other principles as *res nullius*, *res communis* and *res communis humanitatis.*
- the USSR had from the beginning of its involvement with space activities acknowledged outer space as *res omnium extra commercium.* If this had not been so, it would have secured for itself a merely transient victory.

Exploitation and Outer Space

- The Outer Space Treaty (1967 expressly stipulates in Article II that, “Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means”.
    - The drafters thus acknowledge that appropriation may arise by ‘use’. Therefore, it may be argued that it is not possible even under this treaty, for any state to exploit resources on the moon for commercial benefits without at least by implication ‘appropriating’ it.
- The requirement in Article IX that a state which is about to conduct an activity which may potentially cause harmful interference with activities of other states parties should undertake appropriate consultation before proceeding with such activity also supports the argument that any state that wants to introduce commercial exploitation must first of all embark upon international consultations.

Exploitation and the Moon

- Moon Treaty Article 6 (2) deals principally with the removal of samples for scientific studies.
- Article 11, paragraph 5 envisages that states parties to the Moon Agreement (1979) will establish an international regime to govern the exploitation of natural resources on the moon and Article 11 (7) provides that the main purposes of the regime shall include;
  - (a) The orderly and safe development of the natural resources of the moon;
  - (b) The rational management of those resources;
  - (c) The expansion of opportunities in the use of those resources;
  - (d) An equitable sharing by all states Parties in the benefits derived from those resources, whereby the interests and needs of the developing countries, as well as the efforts of those countries which have contributed either directly or indirectly to the exploration of the moon, shall be given special consideration.
- 11 (8) very importantly stipulates that all the activities with respect to the natural resources of the moon shall be carried out in a manner compatible with the purposes specified in paragraph 7.

Exploitation and the Moon

- To sum up, we share the view that:

  - "The non-appropriation principle represents the fundamental rule of the space law system. Since the beginning of the space era, it has allowed for the safe and orderly development of space activities. …this principle should be regarded as a customary rule of international law of a special character, namely 'a structural norm' of international law."

- Fabio Tronchetti, the Non -Appropriation Principle as a Structural Norm of International Law: A new way of Interpreting Article II of the Outer Space Treaty Vol. xxxiii, *Air & Space Law* Issue 3 (June 2008) p. 277.

Satanic Verses of Space Law Literature

Several Authors have been calling for the law to recognise and permit property rights and the commercialisation of outer space.

- Anderson Baca *"...the issue of sovereignty be reconsidered in space, as some form of sovereignty is an absolute necessity to the guarantee of the property rights required for the development of space resources"*.
- Christol, thinks that there is a distinction between the ban of Article II of the Space Treaty concerning sovereign (i.e. national), appropriation of spatial areas, and the right of private legal persons to obtain property.

Satanic Verses

Silence of the Lambs: Exploiting the 'Silences' of Article II

- This group of theorists argue that **national** appropriation is the express focus of the prohibition in Article II of the Space Treaty.
  - Older writers in this group include Gorove, Christol and more recent adherents include Sterns and Tennen, Dasch, Smith and Pierce.
- In other words private concerns are outside this prohibition and are capable of so acting within the scope of for instance the US Space Act in relation to asteroid mining.
- ANSWERS
- As a matter of historical fact the drafters of the Outer Space Treaty could not have reasonably foreseen the current world of private corporate involvement in so many areas.
- But Purposive Interpretation Rule of construction of agreements show that if the issue was raised at the Drafting stages the answer would have been no.
- Lifting the Corporate Veil doctrine can apply. US has been subsidizing, prime funding and will receive taxes and improvement to its economy. Is it seeking to evade *Pacta Sunt Servanda*.

Satanic Verses (Cont'd)

Mockingbird Approach: Mocking the Moon Treaty

- Indeed the United States delegate after the approval of the Moon Agreement by the COPUOS and Committee Four of the General Assembly in 1979 stated expressly that this 'balanced' and 'reasonable' agreement "would have to meet the approval of the United States Senate".
- The United States also committed itself to future participation in negotiations respecting the establishment of an international regime for governing the exploitation of the moon's natural resources. UN Doc. A/SPC/34/19, 6, 7 November 1979.

Satanic Verses (Cont'd)

Mockingbird Approach: Mocking the Moon Treaty

- Some theorists seek actively to kill off the Moon treaty if possible and/or deny it any sufficient legal force.
- That the Moon Treaty is at best a revisionist attempt to remedy the loophole in Article II of the Outer Space Treaty by which allowance exists for the exclusion of private corporations from the non-appropriation.
- Very slow ratification rate of the Moon treaty and more importantly the total absence of the major space powers from the treaty.
- Answers
- This theory is fanciful for many reasons. First it proceeds from the premise that there is a conspiracy that some unknown states and their delegates sit in a dark room obsessed with the idea of preventing exploitation of outer space by anyone
- Whereas in truth the Moon Treaty is the most friendly instrument towards an exploitative regime.
  - Its preamble even contains the statement that parties must bear in mind that the "benefits which may be derived from the exploitation of the natural resources of the moon and other celestial bodies".
  - Article 11 (5) of the Moon Treaty also envisages the creation of an exploitative regime for the Moon also appears to be lost to this limited view.

Satanic Verses (Cont'd)

Too many fish in the Ocean of Space Argument

- According to asteroid exploitation apologists there is more or less an endless supply of asteroids. Thus why should law makers bother about something which is of infinite supply.
- Asteroids are exceptionally fungible and it is highly unlikely that the few dozen which will be mined in this century would be of any scientific significance.
- Asteroids do not need to enjoy the same treaty protection that would legally apply to the Moon, Mars or other major planetary bodies.
- ANSWER
- Asteroids of course are potentially fungible, however their lifetime does run into hundreds of thousands of years. Asteroids are not exactly fireflies.
- Besides pointing out the fungibility or abundance of asteroids does not really answer the question that relates to the legal basis for private exploitation of outer space.
    - Neither does it answer fears about the potentials for alteration of the natural environment of celestial bodies or the possibility of contamination of the earth's atmosphere.

Satanic Verses (Cont'd)

Alice in Wonderland view: Nothing has changed Theory.

- There is the argument chiefly promoted by the US itself that the Space Act in fact does not assert sovereignty, or seek to assert sovereign or exclusive rights or jurisdiction over celestial body.
  - ``513. Space resource commercial exploration and utilization....51301".SEC. 403. DISCLAIMER OF EXTRATERRITORIAL SOVEREIGNTY. It is the sense of Congress that by the enactment of this Act, the United States does not thereby assert sovereignty or sovereign or exclusive rights or jurisdiction over, or the ownership of, any celestial body.
  - The House Committee on Science, Space, and Technology wrote: "the exploration and use of outer space includes the right to remove, take possession of and use natural resources from celestial bodies. This right is affirmed by State practice and by the U.S. State Department in Congressional testimony and written correspondence".
- <u>Answer</u>
- Given another name this would be the pulling the wool over the eyes point of view.
- Of course, it would be would be highly unusual and counterproductive on many levels for a state to agree to disobeying international Law.
- By simply setting up an internal regime granting recognition of ownership of space resources the US has already violated of *pacta sunt servanda*.

Exploitation

Exploitation

Exploitation

Exploitation