

# **Space Related International Treaties and Indian Policies**

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**Space in India's Foreign Policy**

*Technology- Policy- Security Considerations*

**National Institute of Advanced Studies**

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Courtesy V. Gopalakrishnan

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# Outer Space

- **International Common Areas -*Global Commons***
  - High Seas, International Seabed Authority
  - Antarctic Region – Antarctic Treaty System
  - Outer Space – UN Treaties
- **UN Treaties on Outer Space activities**
  - *Res Communis* nature – *Non-Appropriation*
  - Exploration
  - *Exploitation or*
  - Utilization ...

# Evolution of Space Law

- **‘Pre-Sputnik’ thoughts & concepts**
  - 1910: 1<sup>st</sup> Paper by Belgian Lawyer Emile Laude – *‘problem of ownership and use of Hertzian (Radio) waves will be posed one day’*
  - 1926: 2<sup>nd</sup> Paper by Soviet Aviation Ministry official, V.A. Zarzar – *Principle of complete sovereignty over airspace; Where international zone begins above airspace ! – altitude and operational difference between air and space flights – different legal regimes ...*
  - 1931-32: Czechoslovakian lawyer, writer, inventor and engineering professor, Vladimir Mandl’s monograph on space law- *foresaw legal problems of rocketry in Germany and other countries..*

# Evolution of Space Law .. Contd.

- 1933: Paper, 'Conquest of the Stratosphere and the International Law' , Y.A. Korovin, Soviet legal scholar – cited potential harmful aspects of over-flights including optical & infra-red reconnaissance ..
- 1946: Papers presented by Arthur C. Clarke- 'The challenge of the Spaceship', Astronautics and its impact upon Human Society' in British Interplanetary Society, London (Oct 05, 1946)
- 1948: 1<sup>st</sup> U.S. paper by John Cobb Cooper- Topic on 'International air law' with sub title, 'Future use of guided Missiles above the airspace' – hinted on political and geographic difficulties – Geo-Political issues!- Stressed for upper limit of air space
- **International Astronautical Federation (IAF) founded in 1951**

# Evolution of Space Law .. Contd.

- Sputnik 1 Launch on 4<sup>th</sup> October 1957
- Post-Sputnik developments
  - 1958 -18-nation Ad hoc Committee organised by UN General Assembly Resolution, 1348 .. India was a member
  - 1959 - **Committee on Peaceful Uses of Outer Space** was established by UN GA Res. 1472 (XIV)
  - 1961- UNGA Res. 1721 B(XVI) – International co-operation in the peaceful uses of outer space
  - 13 Dec 1963 - Landmark UNGA Res. 1962 (XVIII) **Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space**
  - 1963 -**Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water**

# Trend of Space Law Development

- **UN Principles-**
  - *Declaration of Legal Principles, 1963*
  - *Broadcasting Principles, 1982*
  - *Remote Sensing Principles, 1986*
  - *Nuclear Power Sources" Principles, 1992;*
  - *Benefits Declaration, 1996.*
- **UN Treaties – Five Treaties formulated (next slide)**
- **UNGA Resolutions:**
  - *International Cooperation 1961;*
  - *Launching State, 2004;*
  - *Registration Practices, 2007;*
  - *National Legislation, 2013*
- **Other Documents** – *Space Debris Mitigation Guidelines, 2007; Safety Frame Work for NPS, 2009, Transparency and Confidence Building Measures (TCBMs) 2013, Long Term Sustainability of Outer space activities (2010.. 2018?)*

# UN Treaties on Outer Space Activities

- Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty) 1967
- Convention on International Liability for Damage Caused by Space Objects (Liability Convention) 1972
- Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (Rescue Agreement) 1968
- Convention on Registration of Objects Launched into Outer Space (Registration Convention) 1975
- Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (Moon Agreement) 1979

# Outer Space Treaty (1967)

- Article – I
  - Exploration and Use shall be –
    - For the benefit to mankind
    - The Province of all mankind
  - Freedom of Exploration
  - Freedom of Scientific investigation
- Article – II
  - Non appropriation - No claim of sovereignty by use or occupation.
- Article – III
  - Applicability of international Law and UN Charter



# Outer Space Treaty (1967) ... *contd*

- Article – IV
  - Exclusively for Peaceful purposes
  - Non Weaponisation – No placement of Weapons of Mass Destruction on celestial bodies
- Article – V
  - Astronauts Envoys of Mankind- to ensure safe return to respective states
- Article-VI
  - International Responsibility for all outer space activities, including non-governmental entities
  - Authorization and continuous supervision

# Outer Space Treaty (1967) ... *contd*

- Article – VII
  - International Liability for damages caused by space objects
- Article – VIII
  - State of registry
  - Jurisdiction and control over space objects and personnel
- Article-IX
  - Environmental Protection – No harmful contamination (*Space Debris!?*) - International consultation

# Outer Space Treaty (1967) ... contd

- Article – X
  - To promote International Cooperation – Opportunity to observe space launches by Principles of equality
- Article – XI
  - Information to Secretary General of UN on space activities
- Article-XII
  - Provision for visits to stations and installations and space vehicles on Moon and celestial bodies
- Article XIII
  - Applicability to international organizations
- Articles XIV to XVII –
  - General provisions of international Treaties - Signatures- ratifications, Amendments etc.

# Other Treaties – *Salient Features*

- **Rescue Agreement, 1968**
  - Protection and safe Return of Astronauts and Objects
- **Liability Convention, 1972**
  - Definitions on -
    - ‘Damage’,
    - ‘Launching State’
  - Classifications of Liability conditions
    - Absolute Liability
    - Fault based Liability
  - Procedure for claims on Damages
    - Diplomatic channels
    - Claims Commission
- **Registration Convention**
  - Registration of Space Objects launched into outer space
  - Orbital parameters, functions and Updates
  - State of Registry – Jurisdiction and Control

# Other Treaties – *Salient Features*

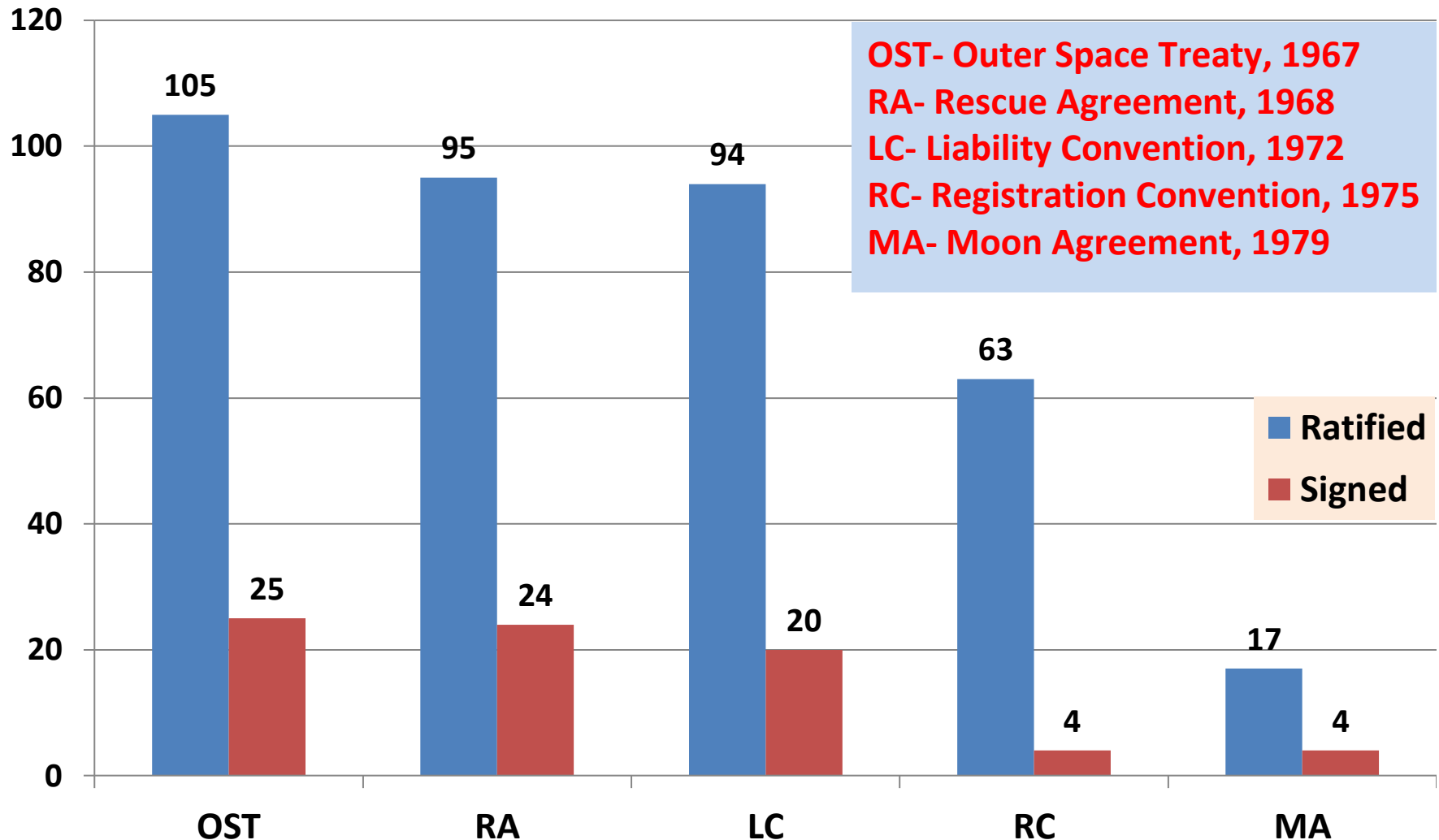
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# Moon Agreement – *Salient Features.*

- **Not a popular Treaty with only 17 ratifications**
  - No major spacefaring nations have signed or ratified- India has signed only.
  - **‘Common Heritage of Mankind Principle’**
  - Freedom of Scientific investigation; For Peaceful purposes only ; protection of environment; No placement of weapons; return of samples for scientific investigation
  - Besides Exploration, provides for ‘Exploitation of natural Resources of the moon and other celestial bodies’
    - Rational management of resources
    - Sharing of benefits on equitable basis by all State Parties
  - Current Development: Utilization of Celestial Resources by private industries enabled by a few States

# Status of UN Treaties on Outer Space –

*As on March 2017*



# Developments in UNCOPUOS

- **UN Committee on Peaceful Uses of outer Space (UNCOPUOS)**
  - **Scientific and Technical Sub Committee (STSC)**
    - **Long Term sustainability of Outer space activities- Working Group Mode - Draft Report with 29 guidelines- 12 Agreed**
  - **Legal Sub Committee Agenda**
    - **Definition and Delimitation of Outer Space; Preferential treatment of GEO orbit by equatorial based countries; Use and applications of UN treaties; Space Debris mitigation measures; Use of Nuclear power sources; National space Legislation**
- **UN General Assembly**
  - **Endorsement of Space Debris Mitigation Guidelines**
  - **Resolutions on International Cooperation of Outer Space activities- Annual**
  - **Resolutions on TCBMs – Guidelines by Group of Governmental Experts in 2013**
  - **No First Use of Weapons in Space**



# International Developments ...Contd ..

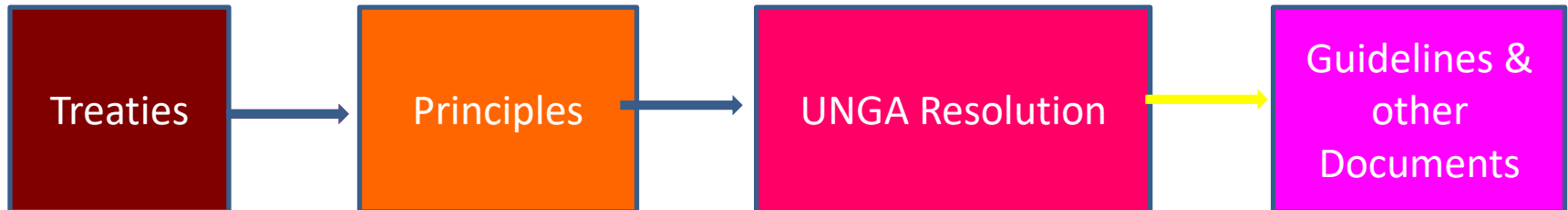
- **Conference on Disarmament (CD)**
  - Prevention of Arms Race in Outer Space (PAROS)
  - Discussions in Transparency and Confidence Building Measures in outer space activities (TCBMS).
  - Joint proposal of Russia- China for a Treaty on Prevention of Placement of weapons in Outer Space (PPWT)
  - Process stalled –

# International Developments ...Contd ..

- **International Code of Conduct for outer Space activities** (*Initiated by European Union*)
  - Draft formulated in 2008
  - International consultations
  - Multi Lateral Consultations in 2012, 2013, 2014
  - Negotiation Process in 2015 at UN HQ New York
    - No consensus
  - To get into UN Process ..
    - Geneva, Vienna, New York- 2018!?

# UN Treaty making process

- By consensus
- No Treaty formulations after Moon Agreement in 1979.
- *Will Soft Law practice tending towards establishing a Customary law either State Practice or an Instant Customary Law by Opinio Juris?!*



# Technological Developments and Challenges

- **Uncontrollable Growth of Space Debris population**
  - Active Debris Removal - Technological, Legal & Policy issues
- **Space Security issues**
  - Growing dependence Vs. Vulnerability
  - Protection of space assets
- **Legal issues in**
  - Remote Sensing – National Security issues with respect to availability of High Resolution imageries
  - Satellite Communication and Navigations Services – National Security and Liability issues
- **Commercial issues**
  - Space Technology - Dual-Use nature - Export Control Issues – **MTCR, Wassenaar Arrangement**
  - Launch Services – Technology and Trade related issues.

# Further Developments

- **Non-Governmental Participation**
- **Space Resources Mining**
- **Small / Nano Satellite constellations**
- **IPR Issues**
- **Non-Proliferation & Technology Controls**
  - **Multi lateral Export Control Regimes**
  - **MTCR, Wassenaar Arrangement**
- ***Space Tourism ...***

# Space Resources Mining

- **Exploration vs Exploitation**
- **Exploitation of resources**
  - **U.S. Commercial Space Launch Competitiveness Act 2015 - Title IV--Space Resource Exploration And Utilization**
  - **U.S. Free Enterprises Act 2017**
  - **IISL Position Paper- *Appropriation of Territory Vs Resources***
  - **Luxembourg adopted a Law on the exploration and use of space resources on July 13, 2017**
  - **National Diet of Japan adopted a resolution to discuss the necessary steps to support the space resource industry, in Nov 2016**
  - **The Hague Space Resources Governance Working Group- Building Blocks**

# Space Governance

- **International Law for outer space activities**
  - UN Treaties, Principles, Guidelines, Resolutions
- **National Space Policies and Law**
- **Participation of Non Governmental Entities**
  - Art VI of OST – State Responsibility - Authorization and Continuous supervision
  - Liability Issues
  - Risk sharing

# **India's Position in UN Treaties on Outer Space Activities**

|                                |                                                                      |
|--------------------------------|----------------------------------------------------------------------|
| <b>Outer Space Treaty</b>      | <b>Signature : March 3, 1967<br/>Ratification : January 18, 1982</b> |
| <b>Rescue Agreement</b>        | <b>Accession : July 9, 1979</b>                                      |
| <b>Liability Convention</b>    | <b>Accession : July 9, 1979</b>                                      |
| <b>Registration Convention</b> | <b>Accession : January 18, 1982</b>                                  |
| <b>Moon Agreement</b>          | <b><u>Signature : January 18, 1982</u></b>                           |



# Re-Entry of ESA's VEGA Launch Vehicle



**Two rocket bodies (COPV- Composite overwrapped pressure vessel and a fuel tank) of upper stage of their launch vehicle VEGA/ AVUM have re-entered the earth on November 02, 2016, in Tamilnadu**



# National level Developments

- **Compliance to UN Treaties –**
  - Peaceful uses, Registration of space objects
  - International cooperation
  - TCBMs –Announcement / Notifications of Space Launches ... ..
- **Prevailing Policies**
  - SATCOM, Remote Sensing Data Policy
  - Technology Transfer, Industry Participation, Safety ...
- **Productionisation of Space Syste**
- **Encouragement of Non-Governmental space activities**
  - International Responsibility
  - Liability for Damages Authorization
- **Bill on Space Activities Act, 2017**
  - Under consultation process
  - Rules making and Implementation

# Conclusion

- **Outer Space – *Province of Man-kind***
- **Fair & Responsible use of Outer Space Activities by all space faring nations and stake holders**
- **Space Systems for wide variety of applications – Becomes critical national infrastructure –Space Security becomes very important.**
- ***Outer Space environment to be used for peaceful purposes and to be sustained for future generation.***
- **Outer Space Resources – Common Heritage of mankind – System Rationale management to derive benefits of all countries**
- ***Way Forward.. Cooperation all nation states towards reaching common security in outer space affairs***
- ***India, as a –***
  - ***major space faring nation and***
  - ***a strong Proponent of Peaceful uses of Outer Space***
  - ***Plays a big role .***

- **Thank you for your kind attention !**

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