

MANFRED LACHS SPACE LAW MOOT COURT COMPETITION 2021

TEAM No. 5

IN THE INTERNATIONAL COURT OF JUSTICE

AT THE

PEACE PALACE, THE HAGUE

Case Concerning Mega-Constellations, Autonomous Space Operations and
Freedom of Scientific Investigation

Proclivia

v.

Asteria

ON SUBMISSION TO THE INTERNATIONAL COURT OF JUSTICE

MEMORIAL FOR THE APPLICANT

PROCLIVIA

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TABLE OF AUTHORITIES

TREATIES AND MULTILATERAL AGREEMENTS

Charter of the United Nations, 26 June 1945, 1 U.N.T.S. XVI.....	7
Convention on International Liability for Damage Caused by Space Objects, entered into force Oct. 9, 1973, 24 U.S.T. 2389, 961 U.N.T.S. 187.....	<i>passim</i>
The Antarctic Treaty, 402 U.N.T.S. 71, <i>entered into force</i> June 23, 1961.....	<i>passim</i>
Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies, Oct. 10, 1967, U.S.T. 2410, 610 U.N.T.S. 205.....	<i>passim</i>
United Nations Conference on Environment and Development, Rio Declaration on Environment and Development, UN Doc. A/CONF.151/26 (June 14, 1992).....	9,11
United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397....	4,13,29
Vienna Convention on the Law of Treaties, <i>opened for signature</i> May 23, 1960, 1155 U.N.T.S., 34.....	<i>passim</i>

INTERNATIONAL CASES AND ARBITRAL AWARDS

Administrative Decision No. II (U.S. v. Germany) 1930, 7 R.I.A.A 23.....	16
Barcelona Traction, Light and Power Company, Limited (Belgium v Spain) (New Application:1962), Judgement, 1970 I.C.J. Rep. 3 (Feb. 5).....	4,25
Case Concerning Pulp Mills on the River Uruguay (Arg. v. Uru.), 2010 I.C.J. 1, 96-97 (Apr. 20).....	10
Corfu-Channel Case (United Kingdom v. Albania), Judgement, 1949 I.C.J. Rep. 4.....	7
Deep Seabed Mining, Advisory Opinion, 2011 ITLOS Rep. No. 17 (Feb 1).....	11
Factory at Chorzow (Merits) (Ger./Pol.), Judgement 1928 P.C.I.J. (ser.A) No. 17. (Sept. 13).....	17
Gabčíkovo-Nagymaros Project, (Hungary v Slovakia), Judgment, 1997 ICJ Rep 7.....	9
Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, 1996 I.C.J. Rep. 226...9	
Nuclear Tests Case, 1995 I.C.J. 288, 412 (Sep. 22).....	11
Spanish Zone of Morocco Claims (1923), Rapport III (1924) 2 UNRI.....	34
The “Naulilaa” (Portugal v. Germany) 1928 2 R.I.A.A 1011.....	16
Trail Smelter Arbitration (U.S./Can.) 3 R.I.A.A. 1905 (1941).....	7,31

U.N. SOURCES

A/AC.105/C.2/2017/CRP.6.....	25
Building Blocks for the Development of an International Framework on Space Resource Activities, Working Paper submitted by Luxembourg and the Netherlands, U.N.Doc. A/AC.105/C.2/L.315.....	29
Comm. On the Peaceful Uses of Outer Space, at 129, U.N. GAOR A/61/20.....	32
Comm. on the Peaceful Uses of Outer Space, Legal Subcommittee, Report on its 8 th Session, Jun. 9 -Jul. 4, 1969, UN.Doc. A/AC.105/58(July 4, 1969).....	14
Comm. on the Peaceful Uses of Outer Space, Legal Subcommittee, Report on the 2 nd part of its 3 rd Session, Oct. 5-23, 1964, UN.Doc. A/AC.105/21 (May 21, 1965).....	14
Comm. On the Peaceful Uses of Outer Space, Rep. of the Legal Subcomm. on its Fifty-First Session, U.N. Doc. A/AC.105/C.2/2012/CRP.19.....	5
Draft Conclusions provisionally adopted by the ILC Drafting Committee on the Identification of Customary International Law, A/CN.4/L.869 (2015).....	3
G.A. Res. 68/74, at (Dec. 16, 2013).....	5,6
Int’l L. Assn. Rep. of the 61 st Conference in Paris, ILA/2/39/1 (1984).....	9

Int'l L. Comm'n, Rep. on the Work of its Fifty-Third Session, Draft Articles on Prevention of Transboundary Harm, with commentaries, U.N.Doc. GAOR A/56/10.....	10,16,17
Report of the U.N. Conference on the Human Environment, U.N. Doc. A/CONF.48/14.....	31
U.N.Doc. A/AC.105/C.2/SR.57.....	26

BOOKS

BIN CHENG, STUDIES IN INTERNATIONAL SPACE LAW (1997).....	9,12,17,28
CHITTHARANJAN AMERASINGHE, EVIDENCE IN INTERNATIONAL LITIGATION (2005).....	16
DONALD R. ROTHWELL, THE POLAR REGIONS AND THE DEVELOPMENT OF INTERNATIONAL LAW (1996).....	33
DR. DIEDERIKS-VERSCHOOR & DR. V. KOPAL, AN INTRODUCTION TO SPACE LAW (2008).....	20
GEORGE T. HACKET, SPACE DEBRIS AND THE CORPUS IURIS SPATIALIS (Editions Frontières 1994).....	8,14,26
H.L.A. HART & T. HONORE, CAUSATION IN THE LAW (1985).....	16,21,22
IAN BROWNLIE, 1 SYSTEM OF THE LAW OF NATIONS: STATE RESPONSIBILITY (Oxford University Press 1983).....	34
IAN BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW (1983).....	14
LOTTA VIKARI, THE ENVIRONMENTAL ELEMENT IN SPACE LAW (2008).....	7,8,32,33
MANFRED LACHS, THE LAW OF OUTER SPACE: AN EXPERIENCE IN CONTEMPORARY LAWMAKING (Brill 2010).....	26,33
MYERS S. MCDUGAL, LAW AND PUBLIC ORDER IN SPACE (1963).....	29
RENE PROVOST, STATE RESPONSIBILITY IN INTERNATIONAL LAW (2002).....	14
STEPHEN GOROVE, DEVELOPMENTS IN SPACE LAW: ISSUES AND POLICIES (Kluwer Academic Publishers 1991).....	28
STEPHEN GOROVE, STUDIES IN SPACE LAW: CHALLENGES AND PROSPECTS (1977).....	32
SUSAN J. BUCK, THE GLOBAL COMMONS: AN INTRODUCTION (Island Press, 1998).....	25

COLLECTED WORKS

Andrea Bianchi, <i>Environmental Harm Resulting from the Use of Nuclear Power Sources in Outer Space: Some Remarks on State Responsibility and Liability</i> , in INTERNATIONAL RESPONSIBILITY FOR ENVIRONMENTAL HARM 231(Francesco Francioni et al. eds., 1991).....	31
Armel Kerrest & Lesley Jane Smith, <i>Article III</i> , in 2 COLOGNE COMMENTARY ON SPACE LAW, 139 (Stephan Hobe et al. eds. 2009).....	12
Armel Kerrest & Lesley Jane Smith, <i>Article VII</i> , in 1 COLOGNE COMMENTARY ON SPACE LAW, 126, 139 (Stephan Hobe et al. eds. 2009).....	18
Giuseppe Palmisano, <i>Fault</i> , in 3 MAX PLANCK ENCYCLOPAEDIA PUBLIC INT'L L. 1128 (2012).....	14
Hamilton DeSaussure, <i>The Freedoms of Outer Space and their Maritime Antecedents</i> , in SPACE LAW: DEVELOPMENT AND SCOPE 3 (Nandasiri Jasentuliyana ed., 1992).....	26
He Qizhi, <i>Space Law and the Environment</i> , in SPACE LAW: DEVELOPMENT AND SCOPE 159 (Nandasiri Jasentuliyana ed., 1992).....	31
Horst Blomeyer-Bartenstein, <i>Due Diligence</i> , in 10 ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW 138 (1987).....	11,14
Jean Francois Mayence & Thomas Reuter, <i>Article XI</i> , in 1 COLOGNE COMMENTARY ON SPACE LAW 609 (Stephan Hobe et al. eds., 2009).....	20
Manfred Lachs, <i>The International Law of Outer Space</i> , III RECUEIL DES COURS 105 (1964).....	26

Michael Gerhard, <i>Article VI</i> , in 1 COLOGNE COMMENTARY ON SPACE LAW 373 (Stephan Hobe et al. eds. 2009).....	5,6,34
Philippe Gautier, <i>Non-Binding Agreements</i> , in 7 MAX PLANCK ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW 706 (R. Wolfrum ed., 2012).....	8
Ronald L. Spencer, Jr., <i>International Space Law: A Basis for National Regulation</i> , in NATIONAL REGULATION OF SPACE ACTIVITIES 8 (Ram S. Jakhu ed., 2010).....	5
Sergio Marchisio, <i>Article IX</i> , in 1 COLOGNE COMMENTARY ON SPACE LAW 551 (Stephan Hobe et al. eds. 2009).....	7,9,19
Timo Koivurova, <i>Due Diligence</i> , in 3 MAX PLANCK ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW 236 (R. Wolfrum ed., 2012).....	9

ARTICLES AND COLLOQUIA

Bin Cheng, <i>Article VI of the 1967 Space Treaty Revisited</i> , 26 JOURNAL OF SPACE LAW 7 (1998).....	2,3,4
Charles C Okolie, <i>Legal Requirements for the Protection of Outer Space and the Global Environment</i> , 33 I.I.S.L. PROC. 158 (1990).....	33
F. Kenneth Schwetje, <i>Protecting Space Assets: A Legal Analysis of “Keep-out Zones”</i> , JOURNAL OF SPACE LAW 131 (1987).....	29,30
Fabio Tronchetti & Maria Pozza, ‘Domestic authorization and supervision of mega constellations of satellites: pushing the boundaries of international space law?’ 60 I.I.S.L. PROC. (2017).....	5
Frans G von der Dunk, <i>Sovereignty Versus Space - Public Law and Private Launch in the Asian Context</i> , 5 SINGAPORE JOURNAL OF INTERNATIONAL AND COMPARATIVE LAW 22 (2001).....	4
Glanville Williams, <i>Causation in Law</i> , 19 CAMBRIDGE LAW JOURNAL (1961).....	16,21,22
Hamza Hameed, <i>The Concept of Launching State in Democratized NewSpace</i> , 61 I.I.S.L. PROC. 61 (2018)..	13
Hardie Jr., <i>Foreseeability: A Murky Crystal Ball for Predicting Liability</i> , 23(2) CUMBERLAND LAW REVIEW 349 (1992-93).....	16
He Qizhi, “ <i>Environmental Impact of Space Activities and Measures for International Protection</i> ” 16(2) JOURNAL OF SPACE LAW (1988).....	32
Howard Baker, <i>Liability for Damage Caused in Outer Space by Space Refuse</i> , 13 ANNALS OF AIR & SPACE LAW 183 (1988).....	14
James P. Lampertius, <i>The Need for an Effective Liability Regime for Damage Caused by Debris in Outer Space</i> , 13 MICHIGAN JOURNAL OF INTERNATIONAL LAW 447 (1992).....	32
Karl-H. Bockstiegel, <i>The Term “Launching State” in International Law</i> , 37 I.I.S.L. PROC. 80 (1994).....	13
Karl-Heinz Böckstiegel, <i>Procedures to Clarify the Law Regarding Environmental Aspects of Activities in Outer Space</i> , 32 I.I.S.L. PROC. 65 (1989).....	33
Katherine M. Gorove, <i>International Responsibility for Endangering the “Space Commons”: Focus On A Hypothetical Case</i> , 33 I.I.S.L. PROC. (1990).....	34
Larry F. Martinez, <i>The Legal Dimensions of Cyber-Conflict with Regard to Large Satellite Infrastructures and Constellations</i> , 67 I.I.S.L. PROC. (2016).....	28
Matthew Schaefer, <i>Analogues Between Space Law and Law of the Sea/International Maritime Law: Can Space Law Usefully Borrow or Adapt Rules from these other areas of Public International Law?</i> 55 I.I.S.L. PROC. 4 (2012).....	11
Michel Bourley, <i>Rules of International Law Governing the Commercialisation of Space Activities</i> , 39 I.I.S.L. PROC. 160 (1996).....	3,4
Neta Palkovitz, <i>Dealing with The Regulatory Vacuum in LEO: New Insurance Solutions For Small Satellite Constellations</i> , 67 I.I.S.L. PROC. (2016).....	28

Olavo de O. Bittencourt Neto, <i>Preserving the Outer Space Environment: The 'Precautionary Principle' approach to Space Debris</i> 56 I.I.S.L. PROC. (2013).....	11
Patricia M Sterns and Leslie I Tennen, <i>Principles of Protection of Outer Space Environment in the corpus juris spatialis</i> , 30 I.I.S.L. PROC. (1997).....	33
Paul B. Larsen, <i>Outer Space Traffic Management: Space Situational Awareness Requires Transparency</i> , 51 I.I.S.L. PROC. 338, 346 (2008).....	20,30
Paul Dempsey, <i>Liability for Damage caused by space objects under international law and domestic law</i> , 37 ANNALS OF AIR & SPACE LAW 333 (2012).....	14
Paul G Dembling, <i>Establishing Liability for Outer Space Activities</i> , 13 I.I.S.L. PROC. 87, 88 (1970).....	14
Peter J. Beck, <i>The Antarctic Treaty System after 25 Years</i> , 42 THE WORLD TODAY 196, 197 (1986).....	25
Ram Jakhu & Steven Freeland, <i>The Relationship between the Outer Space Treaty and Customary International Law</i> , 59 I.I.S.L PROC. (2016).....	3,25
Ram S Jakhu, <i>Legal Issues Relating to the Global Public Interest in Outer Space</i> , 32 JOURNAL OF SPACE LAW 31 (2006).....	7
Riccardo Pisillo-Mazzeschi, <i>The Due Diligence Rule and the Nature of the International Responsibility of States</i> , 35 GERMAN YEARBOOK OF INTERNATIONAL LAW 9 (1992).....	9
Richard Brown, Jr., <i>General Principles of Liability</i> , 51 TULANE LAW REVIEW 820 (1976-1977).....	22
Ricky J. Lee, <i>Liability Arising from Article VI of the Outer Space Treaty: States, Domestic Law and Private Operators</i> , 48 I.I.S.L. PROC. 216 (2005).....	3
Sompong Sucharitkul, <i>State Responsibility and International Liability under International Law</i> , LOYOLA OF LOS ANGELES INTERNATIONAL AND COMPARATIVE LAW REVIEW 821 (1996).....	14
Stephen E. Doyle, <i>Space Law and the Government - 50 years later</i> , 39 JOURNAL OF SPACE LAW 1 (2013).....	10
Stephen Gorove, <i>Interpreting Article II of the Outer Space Treaty</i> , 37 FORDHAM LAW REVIEW 349 (1969).....	27
Stephen Gorove, <i>Liability in Space Law: An Overview</i> , 8 ANNALS OF AIR & SPACE LAW 373 (1983).....	4,14
Stephen Gorove, <i>Limitations of the Principle of Freedom and Exploration and Use in the Outer Space Treaty: Benefits and Interests</i> , 13 I.I.S.L. PROC. 74 (1971).....	27
Tugrul Cakir, <i>From the Unilateral Acts of States towards Unilateralism in Space Law</i> , 61 I.I.S.L PROC. 15 (2018).....	31
Vladimir Kopal, <i>The Need for International Law Protection of Outer Space Environment Against Pollution of Any Kind, Particularly Against Space Debris</i> , 32 I.I.S.L. PROC. 107 (1989).....	28
William B. Wirin, <i>Practical Implications of Appropriate State-Launching State Definitions</i> , 37 I.I.S.L. PROC. 109 (1994).....	13
Yuri Takaya-Umehara et al, <i>The Principle of Non-Appropriation and the Exclusive Uses of LEO by Large Satellite Constellations</i> 61 I.I.S.L. PROC. 855 (2018).....	28

INTERNET SOURCES

Amy Thompson, <i>Traffic Jams From Satellite Fleets Are Imminent- What It Means for Earth</i> , OBSERVER (Sep. 5, 2019, 3:39 PM), https://observer.com/2019/09/satellite-space-congestion-spacex-starlink-esa-aeolus/	28
Jack Wright Nelson, <i>The Artemis Accords and the Future of International Space Law</i> , AMERICAN SOCIETY OF INTERNATIONAL LAW (Dec. 10, 2020) https://www.asil.org/sites/default/files/ASIL_Insights_2020_V24_I31.pdf	30

Jeff Foust, Mega-Constellations and mega-debris, THE SPACE REVIEW (October 10, 2016), <https://www.thespacereview.com/article/3078/1>.....9

Jessy Kate Schingler, *Imagining safety zones: Implications and open questions*, THE SPACE REVIEW (Jun. 8, 2020) <https://www.thespacereview.com/article/3962/1>.....31

Kiran Mohan Vazhapully, *Space Law at the Crossroads: Contextualizing the Artemis Accords and the Space Resources Executive Order*, OPINIOJURIS (Jul. 22, 2020).....29

Louis de Gouyon Matignon, *Orbital Slots and Space Congestion*, SPACE LEGAL ISSUES (Jun. 8, 2019) <https://www.spacelegalissues.com/orbital-slots-and-space-congestion/>.....28

Louis de Gouyon Matignon, *Project Kuiper, A Satellite Constellation by Amazon*, SPACE LEGAL ISSUES (Sep. 24, 2019) <https://www.spacelegalissues.com/the-future-space-legal-issues/>.....28

Mathilde Minet, *The Space Legal Issues With Mega-constellations*, SPACE LEGAL ISSUES (Nov. 3, 2020), <https://www.spacelegalissues.com/mega-constellations-a-gordian-knot/>.....28

MISCELLANEOUS

LEO ECONOMY FAQs, <https://www.nasa.gov/leo-economy/faqs>.....27

Principles for Cooperation in the Civil Exploration and Use of the Moon, Mars, Comets, and Asteroids for Peaceful Purposes, Oct. 13, 2020.....29,30

The United Nations Register Of Objects launched into Outer Space. <https://www.unoosa.org/oosa/en/spaceobjectregister/index.html>.....20,30

LEO, https://www.esa.int/ESA_Multimedia/Images/2020/03/Low_Earth_orbit.....27

QUESTIONS PRESENTED

- I -

Whether ASTERIA violated international law by not authorising and continuously supervising the space activities of CUSKO?

- II -

Whether ASTERIA is liable under international law for the loss of the D.A.M.E.-7T satellite?

Whether PROCLIVIA is liable under international law for the loss of the CUSKO satellite?

- III -

Whether ASTERIA is internationally responsible for impeding PROCLIVIA's exercise of the freedom of scientific investigation?

STATEMENT OF FACTS

THE BACKGROUND

The privately-owned CUSKO (Consortium Utilizing Satellites in Key Orbits) entity was first registered in PROCLIVIA. In early 2025, it announced its plan to deploy the CUSKO-E-TM constellation. The constellation featured two revolutionary technologies: it was *monostazine*-propelled, and employed an autonomous attitude and orbit control system (AOCS). The SARASTRO (Satellite Autonomy enabling Revolutionary ASTROnautics) software was programmed to automatically execute orbital manoeuvres on the basis of background surveillance data.

In April 2025, CUSKO filed for a license under the PROCLIVIAN Space Act, requesting authorisation to launch and operate the CUSKO-E-TM constellation. Under the Space Act, CUSKO was subjected to comprehensive operational risk assessment, a safety plan and an environmental impact assessment. The PROCLIVIAN authorities declined CUSKO's licensing request because of the novel automated operations concept, the novel propellant and the uncertainties associated with a self-operating fleet of satellites. The authorities also notified CUSKO that it was impossible to qualify and quantify the associated risks.

The ASTERIAN authorities invited CUSKO to relocate to ASTERIA. Furthermore, they offered tax exemptions and land to CUSKO. CUSKO followed the ASTERIAN government's invitation in December 2025, officially registering the company in ASTERIA and relocating its head office to its capital city Hayden. However, the satellite manufacturing plant and mission support centre remained in PROCLIVIA. Following CUSKO's relocation, the ASTERIAN government did not enact any specific national space law.

THE LAUNCH AND DEPLOYMENT OF CUSKO-E-TM

In June 2026, CUSKO launched and deployed the first CUSKO-E-TM satellites from its own ORAMI (Operational Rocket Ascent Management Infrastructure) platform. The ORAMI platform, originally a PROCLIVIAN oil rig, was converted by CUSKO into a floating launch pad towed to, and anchored in, the exclusive economic zone of ASTERIA in January 2026. By December 2026, the CUSKO-E-TM constellation was declared operational, and ASTERIA issued a commemorative coin to celebrate what it termed “a safe eco-logical spaceflight revolution”.

COMPLICATIONS WITH CUSKO-E-TM

In February 2027, *The Discovery Journal*, reported concerns regarding the functioning of the *monostazine*-propelled engines and the SARASTRO system. Allegedly, several satellites had been lost within weeks after their deployment, and at least one unplanned close conjunction event occurred. These concerns prompted the CUSKO management to issue a press release. Pertinently, CUSKO did not deny the allegations.

ASTERIA requested the CUSKO management to clarify any potential risks arising from the deployment and operation of the constellation. Upon receipt of an unsatisfactory response, ASTERIA unilaterally publicly declared a “safety zone” at the orbital altitude of the CUSKO-E-TM constellation, requesting space actors intending to enter or cross that zone to submit advance information of their plans so as to avoid risk of collision. However, ASTERIA did not provide any information on either the final configuration of the constellation or the programming parameters of the SARASTRO software.

THE LAUNCH AND DEPLOYMENT OF D.A.M.E.-7T

In September 2028, PROCLIVIA launched and subsequently registered the newest generation of its governmental *Discovery of the Antarctic and Maritime Explorer*(D.A.M.E.) satellites into outer space: D.A.M.E.-7T. The D.A.M.E.-7T was the world's most advanced, complex, and expensive Earth observation satellite. The satellite was destined to become a central part of PROCLIVIA's decades-long Antarctic investigation. The D.A.M.E.-7T was equipped with the *Waltzing Wizard*: a ground-breaking collision avoidance system that, on the basis of background surveillance data, would automatically calculate the best possible trajectory.

THE COLLISION

In order to reach its designated orbit, the D.A.M.E.-7T had to cross the orbital altitude of the CUSKO-E-TM constellation. As the D.A.M.E.-7T approached the satellite constellation in September 2028, the two software systems executed conflicting emergency escape manoeuvres. Ultimately, this resulted in an on-orbit collision. Part of the resultant cloud of debris remained suspended at its orbital altitude. However, several large fragments of the D.A.M.E.-7T were also propelled to a perigee of 400km.

THE AFTERMATH

In 2033, a plutonium battery of the D.A.M.E.-7T re-entered the Earth's atmosphere, and eventually crashed into Antarctica. The resultant radioactive pollution brought an abrupt end to PROCLIVIA's decades-long scientific investigations in Antarctica. CUSKO and ASTERIA stand accused of irresponsible profitmaking at the cost of hindering safe access to space for others.

JOINT INVESTIGATION

Following the spacecraft collision, PROCLIVIA and ASTERIA initiated discussions through diplomatic channels, and agreed to undertake a joint technical investigation. The investigation was completed in early 2030, and ASTERIAN and PROCLIVIAN experts: (a) agreed that all background surveillance data had been accurate, and was not a factor in the collision; but (b) failed to agree on the exact circumstances leading to the collision. Unable to resolve their dispute, PROCLIVIA and ASTERIA have agreed to present their case before the International Court of Justice.

THE RELEVANT TREATIES

ASTERIA and PROCLIVIA are both parties to the UN Charter and the Antarctic Treaty. While PROCLIVIA is a party to all five UN space treaties, ASTERIA has only signed (but not ratified) the Outer Space Treaty. The *Orokanga Accord* is a non-legally binding “Declaration of Friendly Relations, Good Neighbourliness and Scientific Cooperation” between ASTERIA and PROCLIVIA, in 1998.

TIMELINE OF EVENTS

Early 2025	CUSKO publicly announced CUSKO-E-TM
April 2025	CUSKO's license rejected by PROCLIVIA
December 2025	CUSKO officially registered in ASTERIA and its head office relocated
June 2026	First CUSKO-E-TM satellite launched and deployed
December 2026	150 CUSKO satellites successfully deployed
February 2027	Concerns regarding <i>monastazine</i> -propelled engines and the SARASTRO software raised among the mission support experts of CUSKO
June 2027	ASTERIA requested PROCLIVIAN authorities for a copy of technical documentation of CUSKO
1 June 2027	UNCOPUOS session; ASTERIA announced that it had become a Party to the Liability Convention, and repeated the request for advanced information of plans to enter "safety zone" at the orbital altitude of CUSKO-E-TM
September 2028	PROCLIVIA launched D.A.M.E.-7T
15 September 2028	D.A.M.E.-7T collided with a CUSKO-E-TM satellite
Early 2030	Joint Technical Investigation completed

SUMMARY OF ARGUMENT

[I] ASTERIA VIOLATED INTERNATIONAL LAW BY NOT AUTHORISING AND CONTINUOUSLY SUPERVISING THE SPACE ACTIVITIES OF CUSKO

Article VI of the OST has reached the status of customary law and applicable to ASTERIA. ASTERIA is in the best position to assert jurisdiction over CUSKO's activities and therefore, is the "appropriate state" under Article VI. It bears the duty to authorize and continuously supervise the operation of the CUSKO-E-TM satellites. ASTERIA failed to collect necessary information before allowing CUSKO's space activity. It also failed to create a mechanism for continuously monitoring the activity. Having failed these basic requirements of authorisation and supervision under Article VI, it violated its obligation under the same.

As per general international law, further codified under Article IX of the OST, ASTERIA is required to pay due regard to the corresponding interests of other states. Prior to the launch, ASTERIA failed to collect information regarding the risks involved in the activity. It did not continuously supervise or intervene in order to reduce the risks. It did not take all steps to prevent the unplanned close conjunction event that would have created space debris. Further, it did not take all measures to prevent the risk of collision at the orbital zone of CUSKO-E-TM. By failing to mitigate the risk of harming the interests of other state, ASTERIA violated its obligation to pay due regard to the interests of other states.

ASTERIA is also required to exercise due diligence and take all appropriate steps to identify and mitigate risks to the outer space environment. ASTERIA did not collect the information to assess the risk involved in the CUSKO-E-TM satellite. Even after the launch, it was unable to collect the requisite information. It did not take all possible measures to mitigate the risk of the

creation of space debris that would harm the outer space environment. Thus, ASTERIA failed to exercise due diligence.

[IIA] ASTERIA IS LIABLE FOR THE LOSS OF THE D.A.M.E.-7T SATELLITE

ASTERIA procured the launch of the CUSKO E TM satellite by being actively involved in it. Therefore, ASTERIA is the launching state of CUSKO-E-TM.

Under Article III, LIAB, ASTERIA will be held liable if there is fault. Fault is constituted by negligence. ASTERIA did not conduct sufficient background checks on the CUSKO E TM constellation. Further, following allegations of a close space conjunction, ASTERIA neither initiated an investigation to verify the concerns nor remedied the situation. It also unilaterally declared a safety zone that was not based on any communication by the CUSKO management or on any reliable information. Therefore, ASTERIA was negligent in authorizing and supervising the operation of the CUSKO-E-TM satellite and will be held liable under Article III, LIAB.

The risk of a space collision is reasonably foreseeable damage. It would not have occurred if the CUSKO E TM satellite had not been deployed. Therefore, ASTERIA's actions can be causally linked to the space collision. Since ASTERIA is the launching state and there is proximate causation between ASTERIA's actions and the loss of the D.A.M.E.-7T satellite, ASTERIA will be liable under Article VII, OST as well.

ASTERIA is liable under general international law as it failed to authorize and continuously supervise the operation of the CUSKO-E-TM satellite. ASTERIA is also liable for failing to exercise due diligence and due regard to the corresponding interests of other states.

[IIB] PROCLIVIA IS NOT LIABLE FOR THE LOSS OF THE CUSKO-E-TM SATELLITE

There is no specific and binding obligation on PROCLIVIA to provide ASTERIA with details of the trajectory and collision avoidance system of D.A.M.E.-7T.

The international law obligations of cooperation, consultation and due regard are general in nature. They do not extend to specific and detailed information pertaining to satellite trajectories and novel technologies.

Further, ASTERIA's unilateral declaration of an unreasonable safety zone does not create any binding obligation on PROCLIVIA either. Since there is no breach of an obligation, there is no fault. Hence, PROCLIVIA cannot be held liable under Article III, LIAB.

According to the independent investigation, the background surveillance data was correct. Therefore, no causal link can be established between PROCLIVIA's non-submission of information and the space collision. Therefore, since there is no proximate causation, PROCLIVIA cannot be held liable under Article VII, OST or general international law either.

[III] ASTERIA IS INTERNATIONALLY RESPONSIBLE FOR IMPEDING PROCLIVIA'S EXERCISE OF THE FREEDOM OF SCIENTIFIC INVESTIGATION

Article I of the Outer Space Treaty is declaratory of customary international law, and enshrines the freedom of scientific investigation in outer space. PROCLIVIA and ASTERIA are party to the Antarctic Treaty. Article II of the Antarctic Treaty guarantees the "freedom of scientific investigation and cooperation toward that end." Therefore, ASTERIA is internationally obligated to respect PROCLIVIA's exercise of the freedom of scientific investigation.

The freedom of scientific investigation is part of the broader freedom of exploration enshrined in Article I of the Outer Space Treaty, and subject to limitations. However, the onus lies on ASTERIA to establish that its activities do not extend beyond lawful limitations on the freedom of scientific investigation.

ASTERIA has restricted free access to outer space through the proliferation of satellites in Low Earth Orbit and resultant exacerbation of the risk of collision. The orbital positioning of the CUSKO-E-TM satellite constellation amounts to national appropriation by means of use or occupation. Such appropriation is prohibited by Article II of the Outer Space Treaty.

ASTERIA's unilateral declaration of an unreasonable safety zone unlawfully limits PROCLIVIA's exercise of the freedom of scientific investigation. The extent of the safety zone, its unspecified duration, and associated disclosure requirements cement its unreasonableness. . Failure to meet the test of reasonableness renders the safety zone violative of international law.

Article IX of the Outer Space Treaty, the Antarctic Treaty system, and principles of general international law oblige states to prevent transboundary harm. This obligation safeguards the value of scientific research. ASTERIA has harmfully contaminated both the outer space environment and the surface of Antarctica. The creation of space debris pollutes outer space, and prejudices research. As a result of nuclear contamination, PROCLIVIA was forced to shut down *SEEKER-I* and *SABERT-V*. ASTERIA did not undertake either appropriate or adequate measures to prevent, mitigate, or curb such contamination. Therefore, ASTERIA's conduct violates international law.

International responsibility is established between states when an unlawful international act can be imputed to a state. It follows that any impediment to the freedom of scientific investigation caused by ASTERIA's national activities shall attract its international responsibility. CUSKO is under the exclusive control and jurisdiction of ASTERIA. Resultantly, the satellite constellation's orbital positioning, the associated safety zone, and the harmful contamination of outer space and Antarctica are attributable to ASTERIA. Therefore, ASTERIA is internationally responsible for impeding PROCLIVIA's exercise of the freedom of scientific investigation.

ARGUMENT

[I] ASTERIA VIOLATED INTERNATIONAL LAW BY NOT AUTHORISING AND CONTINUOUSLY SUPERVISING THE SPACE ACTIVITIES OF CUSKO

Prior to the launch of CUSKO-E-TM, ASTERIA did not enact a national space law requiring authorisation through any risk assessment.¹ This was despite the fact that the CUSKO-E-TM mega-constellation featured novel technologies.² Soon the functioning of the engine and the SARASTRO system raised concerns among CUSKO's mission support experts.³ The loss of some satellites and the occurrence of at least one close conjunction event was also reported.⁴ It was only after this, that ASTERIA asked CUSKO for clarification regarding the risks involved.⁵ Even post this, it was unable to receive satisfactory levels of information.⁶

PROCLIVIA submits that ASTERIA's failure to authorise and continuously supervise the space activities of CUSKO amounts to a violation of the customary obligation enshrined in Article VI of the OST [1]; failure to act with 'due regard' to the corresponding interests of other states [2]; and failure to exercise "due diligence" [3].

[1] ASTERIA violated its customary obligation to "authorise and continuously supervise" enshrined in Article VI of the OST

¹ *Compromis* ¶4.

² *Compromis* ¶2.

³ *Compromis* ¶6.

⁴ *Id.*

⁵ *Compromis* ¶8.

⁶ *Compromis* ¶9.

Article VI specifically provides that "activities of non-governmental entities ... shall require authorization and continuing supervision by the appropriate State Party".⁷ The violation of the authorisation and continuing supervision obligation constitutes an independent and separate cause of responsibility.⁸ It is submitted that ASTERIA was obligated to authorise and supervise the space activities of CUSKO [1.1] and it did not fulfil this obligation [1.2].

[1.1] ASTERIA was obligated to "authorise and continuously supervise" as enshrined in Article VI of the OST

PROCLIVIA submits that the Article VI obligation is applicable to ASTERIA [A]; ASTERIA is the "appropriate state" and thus, the bearer of this obligation [B].

[A] The obligation enshrined in Article VI is applicable to ASTERIA because it is customary law

Generally, a treaty does not create obligations for a state without its consent.⁹ Admittedly, ASTERIA is not a party to the OST.¹⁰ However, the VCLT clarifies that this does not preclude a rule set forth in a treaty from becoming binding upon non-parties as a customary rule of international law.¹¹ The obligation to authorise and supervise as enshrined in Article VI has fulfilled the test of consistent state practice and *opinio juris* and is thus, applicable as custom.

⁷ Article VI, Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies, Oct. 10, 1967, U.S.T. 2410, 610 U.N.T.S. 205 [hereinafter OST].

⁸ Bin Cheng, *Article VI of the 1967 Space Treaty Revisited*, 26 JOURNAL OF SPACE LAW 7, 13-14 (1998).

⁹ Article 34, Vienna Convention on the Law of Treaties, *opened for signature* May 23, 1960, 1155 U.N.T.S.[hereinafter VCLT].

¹⁰ *Compromis* ¶19.

¹¹ Article 38, VCLT.

The obligation has been implemented by most major space-faring, and even non- space faring, states.¹² This consistent state practice has also been furthered by states that are not parties to the treaty, such as Philippines¹³ and Malaysia.¹⁴ No state has expressly declared intention against abiding by the obligations laid down under Article VI.¹⁵ Such failure to react over time to a practice proves *opinion juris*.¹⁶ Therefore, Article VI is now accepted as customary international law applicable to all states.¹⁷ Therefore, despite ASTERIA not ratifying the OST, the obligation enshrined in Article VI is applicable to ASTERIA.

[B] ASTERIA is the bearer of the obligation as it is the appropriate state

The authorisation and continuous supervision under Article VI have to be conducted by the “appropriate state”.¹⁸ The appropriate state is responsible to the entire international community for the satisfaction of these obligations.¹⁹ It is the state that is best placed to assert jurisdiction over the non-governmental entity engaged in space activities.²⁰ This jurisdiction can be personal, territorial, or quasi-territorial.²¹

¹² Ram Jakhu & Steven Freeland, *The Relationship between the Outer Space Treaty and Customary International Law*, 59 I.I.S.L PROC. (2016).

¹³ Philippines Republic Act No. 11363 (2019).

¹⁴ Statement by Permanent Representative of Malaysia to the United Nations at the 61st Session of the UNCOPUOS (2018).

¹⁵ *Id.*

¹⁶ Draft Conclusion 10(3) of the Draft Conclusions provisionally adopted by the ILC Drafting Committee on the Identification of Customary International Law, A/CN.4/L.869 (2015).

¹⁷ *Id.*

¹⁸ Article VI, OST.

¹⁹ Michel Bourley, *Rules of International Law Governing the Commercialisation of Space Activities*, 39 I.I.S.L. PROC. 160 (1996).

²⁰ Ricky J. Lee, *Liability Arising from Article VI of the Outer Space Treaty: States, Domestic Law and Private Operators*, 48 I.I.S.L. PROC. 216 (2005).

²¹ Bin Cheng, *Article VI of the 1967 Space Treaty Revisited*, 26 JOURNAL OF SPACE LAW 7, 29 (1998).

Personal jurisdiction lies with the state whose nationals conduct the activity.²² In *Barcelona Traction*, the ICJ rules that a company's nationality is determined by the place of its registered head office.²³ This rule applies to outer space activities.²⁴ CUSKO is officially registered in ASTERIA, and its head office is located there.²⁵ Therefore, CUSKO is a national of ASTERIA.

Further, ASTERIA exercises quasi-territorial jurisdiction over the space activity of launching the satellites. For the launch of the satellites, an oil rig was converted into a floating launch pad towed to, and anchored in the Exclusive Economic Zone ['EEZ'] of ASTERIA.²⁶ Therefore, the activity of launching the CUSKO-E-TM satellites was conducted from the EEZ of ASTERIA. The coastal state has the exclusive jurisdiction to regulate the operation and use of installations and structures in its EEZ.²⁷ Therefore, the use of the floating launch pad towed is under ASTERIA's exclusive jurisdiction.

Resultantly, ASTERIA is best placed to assert effective jurisdiction over CUSKO's activities. Therefore, ASTERIA is the appropriate state, and is responsible for authorising and continuously supervising CUSKO's activities.

²² Stephen Gorove, *Liability in Space Law: An Overview*, 8 ANNALS OF AIR & SPACE LAW 373 (1983); Bin Cheng, *Article VI of the 1967 Space Treaty Revisited*, 26 JOURNAL OF SPACE LAW 7 (1998).

²³ The *Barcelona Traction Case (Belgium v Spain)*, Judgement, 1970 I.C.J. Rep. 4, (February 5).

²⁴ Frans G von der Dunk, *Sovereignty Versus Space - Public Law and Private Launch in the Asian Context*, 5 SINGAPORE JOURNAL OF INTERNATIONAL AND COMPARATIVE LAW 22 (2001); Bourley, *supra* note 19.

²⁵ *Compromis* ¶4.

²⁶ *Compromis* ¶5.

²⁷ Article 60, United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter UNCLOS].

[1.2] ASTERIA did not authorise and continuously supervise as required under Article VI of the OST

[A] ASTERIA did not meet the requirements of authorisation under Article VI of the OST

At the very least, the duty to authorise requires the collection of sufficient information to accept a request for conducting any space activity.²⁸ The appropriate state must ascertain overall safety and assure compliance with international law.²⁹ This includes assuring absence of “harmful contamination”³⁰ and “harmful interference with activities of other States”.³¹ This authorisation can either be through a national space legislation or by agreement with the entity conducting the activity.³² Illustrative of the nascent state practice around mega-constellations, the USA imposed the condition on OneWeb to enforce debris mitigation and practices.³³ ASTERIA failed to adopt either method and therefore, failed to adhere to its obligation.

ASTERIA actively avoided implementing a national space legislation.³⁴ Prior to the launch of the CUSKO-E-TM satellites, ASTERIA did not collect information regarding comprehensive risk, safety plans, or environmental impact. This is evidenced by the fact that it requested these

²⁸ Ronald L. Spencer, Jr., *International Space Law: A Basis for National Regulation*, in NATIONAL REGULATION OF SPACE ACTIVITIES 8 (Ram S. Jakhu ed., 2010).

²⁹ *Id.* at 415; Comm. On the Peaceful Uses of Outer Space, Rep. of the Legal Subcomm. on its Fifty-First Session, U.N. Doc. A/AC.105/C.2/2012/CRP.19; G.A. Res. 68/74, at (Dec. 16, 2013).

³⁰ Article IX, OST.

³¹ *Id.*

³² Michael Gerhard, *Article VI*, in 1 COLOGNE COMMENTARY ON SPACE LAW 373 (Stephan Hobe et al. eds. 2009).

³³ Fabio Tronchetti & Maria Pozza, ‘Domestic authorization and supervision of mega constellations of satellites: pushing the boundaries of international space law?’ 60 I.I.S.L Proc. (2017).

³⁴ *Compromis* ¶4.

assessments from PROCLIVIA.³⁵ ASTERIA was obligated to collect this information from CUSKO, and assess compliance with the OST. Therefore, ASTERIA violated its obligation to authorise the space activities of CUSKO.

[B] ASTERIA did not meet supervision requirement enshrined in Article VI of the OST

Article VI enshrines the obligation to exercise “continuing supervision” of the activities of non-governmental entities in outer space.³⁶ This requires states to provide adequate mechanisms for receiving information from such non-governmental entities under their jurisdiction.³⁷ Such mechanisms include systems of on-site inspections or a general reporting requirement.³⁸ Means for intervention, deterrence, or punishment must be used in case of non-conformity.³⁹ Such enforcement mechanisms could include administrative measures: suspension or revocation of authorisation, or penalties.⁴⁰

Despite requesting the CUSKO management, ASTERIA did not receive in-depth information.⁴¹ This demonstrates that even if ASTERIA established any means for collecting information, they were inadequate and lacked enforcement mechanisms. Further, ASTERIA acknowledged, with the announcement of a safety zone, that there was a risk of collision in entering the orbital zone of the CUSKO-E-TM constellation.⁴² Despite this, no means of

³⁵ *Compromis* ¶9.

³⁶ Article VI, OST.

³⁷ Gerhard, *supra* note 32, at 421; G.A. Res. 68/74, at (Dec. 16, 2013).

³⁸ G.A. Res. 68/74, at (Dec. 16, 2013).

³⁹ Gerhard, *supra* note 32, at 421.

⁴⁰ G.A. Res. 68/74, at (Dec. 16, 2013).

⁴¹ *Compromis* ¶9.

⁴² *Compromis* ¶8.

intervention, deterrence or punishment we employed against CUSKO. Therefore, ASTERIA violated its customary obligation to supervise, as enshrined in Article VI.

[2] ASTERIA did not act with due regard to the corresponding interests of other states

As a rule of general international law, the legitimate interests of other states must be taken into consideration when a state exercises its rights.⁴³ This was famously referred to in the *Trail Smelter* case.⁴⁴ The Court interpreted the principle to order not just reparation but also measures to prevent future injury. Therefore, the principle extends to an obligation to take suitable preventive measures to avoid harm.⁴⁵

In the specific context of outer space, Article IX lays down the obligation to pay “due regard to the corresponding interests of all other States Parties.” This lays down the obligation to ensure that the exercise of rights and freedoms in outer space does not interfere with, or compromise the safety of, space operations of other states.⁴⁶ States must thus prove beyond reasonable doubt that every possible step was undertaken to prevent harm to other States.⁴⁷ As Article IX advances a general norm, it is binding on non-parties as well.⁴⁸

ASTERIA reaffirmed its commitment to pay due regard to the interests of PROCLIVIA in the *Orokanga Accord* which declares Neighbourliness between the two states. The principle of “good neighbourliness” has been enshrined in the preamble of UN Charter as “due account

⁴³ Ram S Jakhu, *Legal Issues Relating to the Global Public Interest in Outer Space*, 32 JOURNAL OF SPACE LAW 31 (2006); *Corfu-Channel Case* (United Kingdom v. Albania), Judgement, 1949 I.C.J. Rep. 4 at 22.

⁴⁴ *Trail Smelter Arbitration* (U.S./Can.) 3 R.I.A.A. 1905 (1941).

⁴⁵ LOTTI VIHKARI, *THE ENVIRONMENTAL ELEMENT IN SPACE LAW* 152 (2008).

⁴⁶ Sergio Marchisio, *Article IX*, in 1 COLOGNE COMMENTARY ON SPACE LAW 551 (Stephan Hobe et al. eds. 2009).

⁴⁷ *Id.*

⁴⁸ *Id.*

being taken of the interests and well-being of the rest of the world”.⁴⁹ Even though it is a non-legal agreement, it can have legal implications as it is based on existing sources and rules of international law.⁵⁰ It, along with the close relations maintained between the states,⁵¹ reflects their conduct and confirms their recognition of these general obligations. Thus, ASTERIA had the obligation to take all steps to ensure that the interests of other states are not hindered.

By the omission of authorisation and supervision, ASTERIA failed to take all preventive measures to avoid harm to other states as required by the principle of due regard. As previously submitted, it failed to collect information prior to the launch or even after it, regarding the risks involved in the activity.⁵² It did not continuously supervise or intervene in order to reduce the risks.⁵³ It did not take any steps to prevent the unplanned close conjunction. The event led to satellites going missing and thus, to the creation of space debris which infringes upon the rights of other nations to have an unimpaired environment.⁵⁴ Further, ASTERIA could not ensure that there is no risk of collision on entering the orbital zone of CUSKO-E-TM. A collision would definitely lead to injury to property and which is harmful to the interest of other states.⁵⁵ ASTERIA did not take all possible steps to ensure safety and mitigate the risk of harm to the interests of other states. Therefore, it violated its obligation to pay due regard to the interests of other states.

⁴⁹ Preamble, Charter of the United Nations, 26 June 1945, 1 U.N.T.S. XVI.

⁵⁰ Philippe Gautier, *Non-Binding Agreements*, in 7 MAX PLANCK ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW 706, 710 (R. Wolfrum ed., 2012).

⁵¹ *Compromis* ¶3.

⁵² Submitted at I[1][1.2][A].

⁵³ Submitted at I[1][1.2][B].

⁵⁴ GEORGE T. HACKET, *SPACE DEBRIS AND THE CORPUS IURIS SPATIALIS* 66 (Editions Frontières 1994).

⁵⁵ VIHKARI, *supra* note 45, at 152.

[3] ASTERIA did not exercise due diligence

The obligation to exercise due diligence is a general principle of international law.⁵⁶ It extends to taking preventive action against environmental harm to the global commons, such as outer space.⁵⁷

In the specific context of the Outer Space, this pre-existing customary⁵⁸ rule of due diligence is codified under Article IX of the OST. It lays down the obligation to “adopt appropriate measures” to avoid the harmful contamination of outer space.⁵⁹ This entails taking all appropriate measures to firstly identify, and then, minimise the risk of harmful contamination.⁶⁰ Harmful contamination includes unintentional creation of space debris.⁶¹ Consequently, this obligation extends to taking all appropriate steps to identify the risk of and avoid the creation of space debris.

Activities in outer space are *per se* ultra-hazardous activities⁶² and should be carried out with a very high standard of care and due diligence.⁶³ Further, this risk is more prominent in the use

⁵⁶ Timo Koivurova, *Due Diligence*, in 3 MAX PLANCK ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW 236 (R. Wolfrum ed., 2012).

⁵⁷ *Id.*, at 237; Principle 2, United Nations Conference on Environment and Development, Rio Declaration on Environment and Development, UN Doc. A/CONF.151/26 (June 14, 1992) [hereinafter Rio Declaration].

⁵⁸ Int'l L. Assn. Rep. of the 61st Conference in Paris, ILA/2/39/1 (1984), at 391; Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, 1996 I.C.J. Rep. 226; Gabčíkovo-Nagymaros Project, (Hungary v Slovakia), Judgment, 1997 ICJ Rep 7.

⁵⁹ Article IX, OST.

⁶⁰ Marchisio, *supra* note 46, at 573.

⁶¹ *Id.*; BIN CHENG, STUDIES IN INTERNATIONAL SPACE LAW (1997).

⁶² Marchisio, *supra* note 46, at 572.

⁶³ Riccardo Pisillo-Mazzeschi, *The Due Diligence Rule and the Nature of the International Responsibility of States*, 35 GERMAN YEARBOOK OF INTERNATIONAL LAW 9, 45 (1992).

of a mega-constellation,⁶⁴ such as CUSKO-E-TM. Especially because it is operating in the Low Earth Orbit where the risk of collision is the highest.⁶⁵ Let alone complying with a higher standard of due diligence, ASTERIA failed to implement even the basic measures mentioned.

The ILC Draft articles on Prevention of Transboundary Harm from Hazardous Activities elaborate upon the general customary principle regarding the management of transboundary risks.⁶⁶ Accordingly, due diligence requires establishing suitable monitoring mechanisms,⁶⁷ and providing a system of prior authorization for relevant activities,⁶⁸ based on prior assessment of the potential for transboundary harm.⁶⁹ Such assessment specifically must include an Environmental Impact Assessment.⁷⁰ At the very least, a state must inform itself of factual and scientific components that relate to a contemplated activity.⁷¹

ASTERIA's lack of an adequate system of prior collection of information and authorisation, as well as a system for later monitoring is evidenced by the diplomatic note it sent the PROCLIVIAN authorities.⁷² The information requested via the note included comprehensive operational risk assessment, safety plan, and even an environmental impact assessment.⁷³ This proves ASTERIA's failure to collect this information prior to the launch, as well as the absence

⁶⁴ Jeff Foust, Mega-Constellations and mega-debris, *THE SPACE REVIEW* (October 10, 2016), <https://www.thespacereview.com/article/3078/1>.

⁶⁵ Stephen E. Doyle, *Space Law and the Government - 50 years later*, 39 *JOURNAL OF SPACE LAW* 1, 7 (2013).

⁶⁶ Int'l L. Comm'n, Rep. on the Work of its Fifty-Third Session, Draft Articles on Prevention of Transboundary Harm, with commentaries, U.N.Doc. GAOR A/56/10 [hereinafter Draft Articles on PTH].

⁶⁷ Article 5, Draft Articles on PTH.

⁶⁸ Article 6, Draft Articles on PTH.

⁶⁹ Article 7, Draft Articles on PTH.

⁷⁰ Article 7, Draft Articles on PTH; Case Concerning Pulp Mills on the River Uruguay (Arg. v. Uru.), 2010 I.C.J. 1, 96-97 (Apr. 20).

⁷¹ *Id.*

⁷² *Compromis* ¶9.

⁷³ *Compromis* ¶2.

of monitoring channels to acquire this information after the launch. Thus, it failed to take necessary preventive measures to ensure due diligence.

Further, as it was ruled in the context of due diligence obligation under the UNCLOS, in the *Deep Seabed Mining* Advisory Opinion, a lower standard cannot be applied to developing nations or nations with lesser economic capability.⁷⁴ The underlying rationale was “.... the need to prevent commercial enterprises based in developed States from setting up companies in developing States in the hope of being subjected to less burdensome regulations and controls....”.⁷⁵ This is an equally valid concern in the sphere of outer space.⁷⁶ Moreover, the lack of a space legislation or any national law provision regarding due diligence does not excuse the omission of due diligence.⁷⁷

Further, the “precautionary principle” underlines that the lack of scientific knowledge or information or uncertainty concerning the hazardous effects of an activity is not an excuse for not carrying measures to prevent adverse environmental impacts.⁷⁸ This principle is recognised as customary law⁷⁹ and extends to outer space.⁸⁰ In this regard, ASTERIA’s violation of its duty to assess risks cannot be excused by the fact that PROCLIVIA did not provide it with the

⁷⁴ *Deep Seabed Mining*, Advisory Opinion, 2011 ITLOS Rep. No. 17 (Feb 1).

⁷⁵ *Id.* at 48, ¶159.

⁷⁶ Matthew Schaefer, *Analogues Between Space Law and Law of the Sea/International Maritime Law: Can Space Law Usefully Borrow or Adapt Rules from these other areas of Public International Law?* 55 I.I.S.L. PROC. 4 (2012).

⁷⁷ Horst Blomeyer-Bartenstein, *Due Diligence*, in 10 ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW 138, 140 (1987).

⁷⁸ Principle 15, Rio Declaration.

⁷⁹ Request for an Examination of the Situation in Accordance with Paragraph 63 of the Courts Judgment of 20 December 1974 in the Nuclear Tests Case, 1995 I.C.J. 288, 412 (Sep. 22) (dissenting opinion by Palmer, J.).

⁸⁰ Article III, OST; Olavo de O. Bittencourt Neto, *Preserving the Outer Space Environment: The ‘Precautionary Principle’ approach to Space Debris* 56 I.I.S.L. PROC. (2013).

assessments of CUSKO-E-TM. Therefore, ASTERIA violated its duty to exercise due diligence under both, Article IX of the OST and general international law.

[IIA] ASTERIA IS LIABLE UNDER INTERNATIONAL LAW FOR THE LOSS OF THE D.A.M.E.-7T SATELLITE

At 02h56 UTC on 15 September 2028, as a result of two uncoordinated emergency manoeuvres, D.A.M.E.-7T collided with a CUSKO-E-TM satellite, causing the destruction of both spacecraft. PROCLIVIA submits that ASTERIA is liable under Article III, LIAB [1], and general international law [2] for the loss of the D.A.M.E.-7T satellite.

[1] ASTERIA is liable under Article III, LIAB

States are held liable for damage caused to and by a space object in outer space under Article III, LIAB.⁸¹ CUSKO-E-TM and D.A.M.E.-7T are satellites and hence space objects.⁸² The loss of D.A.M.E.-7T constitutes damage and occurred in outer space.⁸³ PROCLIVIA submits that ASTERIA is liable for the loss of the D.A.M.E.-7T satellite because ASTERIA is the launching state of CUSKO-E-TM[1.1]; ASTERIA is at fault [1.2]; and the damage caused to the D.A.M.E.-7T satellite was due to the fault of ASTERIA [1.3].

[1.1] ASTERIA is the launching state of CUSKO-E-TM

Under Article I of the LIAB, a launching state is defined as “(i) A State which launches or procures the launching of a space object; (ii) A State from whose territory or facility a space

⁸¹ Article III, Convention on International Liability for Damage Caused by Space Objects, entered into force Oct. 9, 1973, 24 U.S.T. 2389, 961 U.N.T.S. 187 [hereinafter LIAB].

⁸² CHENG, *supra* note 61, at 464.

⁸³ Armel Kerrest & Lesley Jane Smith, *Article III, in 2 COLOGNE COMMENTARY ON SPACE LAW*, 139 (Stephan Hobe et al. eds. 2009).

objects is launched.”⁸⁴ To qualify as a launching state either or both of the definitional requirements must be met.

The launch of the CUSKO-E-TM satellite took place from the Exclusive Economic Zone [‘EEZ’] of ASTERIA.⁸⁵ The EEZ is not the sovereign territory of any nation.⁸⁶ Further, the facility from which the launch occurred was licensed in PROCLIVIA⁸⁷ but converted and used for launching in the EEZ of ASTERIA.⁸⁸ Therefore, neither PROCLIVIA nor ASTERIA classify as a launching state under the second definition.

However, ASTERIAN authorities procured the launch. Therefore, ASTERIA is the launching state under the first definition. A state procures a launch by requesting it or by being actively involved in it.⁸⁹ ASTERIA invited CUSKO to relocate to ASTERIA, offering them land to build their company premises and tax concessions.⁹⁰ ASTERIA also included CUSKO’s satellite operation in their spaceflight revolution.⁹¹ This shows active involvement in the launching process. Hence, ASTERIA is the launching state of CUSKO under the first definition.

[1.2] ASTERIA is at fault

⁸⁴ Article I(3), LIAB.

⁸⁵ *Compromis* ¶5.

⁸⁶ Article 55, UNCLOS.

⁸⁷ *Compromis* ¶5.

⁸⁸ *Compromis* ¶5.

⁸⁹ Karl-H. Bockstiegel, *The Term “Launching State” in International Law*, 37 I.I.S.L PROC. 80, 81 (1994); William B. Wirin, *Practical Implications of Appropriate State-Launching State Definitions*, 37 I.I.S.L. PROC. 109 (1994); Hamza Hameed, *The Concept of Launching State in Democratized NewSpace*, 61 I.I.S.L. PROC. 61 (2018).

⁹⁰ *Compromis* ¶4.

⁹¹ *Compromis* ¶5.

Liability under Article III, LIAB is based on fault. PROCLIVIA submits that negligence constitutes fault and that ASTERIA was negligent. ‘Fault’ is not defined under the LIAB; therefore, recourse must be taken to general international law to interpret the term.⁹² According to general international law, negligence constitutes fault.⁹³ This interpretation is supported by the *travaux*⁹⁴ and eminent jurists.⁹⁵ PROCLIVIA submits that ASTERIA was negligent on the basis of evidence.

Negligence means the failure to exercise a certain standard of prudence and due diligence that is considered reasonable in the circumstances.⁹⁶ For outer space operations a higher standard of due diligence is required as it is an ultra-hazardous activity.⁹⁷

Due diligence requires states to take all necessary precautionary measures when it is aware of any harm resulting from its space activity.⁹⁸ ASTERIA was aware that CUSKO had been denied clearance in PROCLIVIA owing to its unquantifiable risks. Despite that, ASTERIA did not conduct sufficient background checks on the operation of the CUSKO-E-TM

⁹² Article 31, VCLT.

⁹³ Giuseppe Palmisano, *Fault*, in 3 MAX PLANCK ENCYCLOPAEDIA PUBLIC INT’L L. 1128 (2012); IAN BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW, 441 (1983).

⁹⁴ Comm. on the Peaceful Uses of Outer Space, Legal Subcommittee, Report on its 8th Session, Jun. 9 -Jul. 4, 1969, at Annex II, 19, UN.Doc. A/AC.105/58(July 4, 1969); Comm. on the Peaceful Uses of Outer Space, Legal Subcommittee, Report on the 2nd part of its 3rd Session, Oct. 5-23, 1964, at Annex II, 20 UN.Doc. A/AC.105/21 (May 21, 1965).

⁹⁵ Howard Baker, *Liability for Damage Caused in Outer Space by Space Refuse*, 13 ANNALS OF AIR & SPACE LAW 183 (1988); Paul Dempsey, *Liability for Damage caused by space objects under international law and domestic law*, 37 ANNALS OF AIR & SPACE LAW 333, 343 (2012).

⁹⁶ Horst Blomeyer-Bartenstein, *Due Diligence*, in 10 ENCYCLOPAEDIA OF PUBLIC INTERNATIONAL LAW 138, 141 (R. Dolzer *et al* eds., 1981)

⁹⁶ Paul G Dembling, *Establishing Liability for Outer Space Activities*, 13 I.I.S.L. PROC. 87, 88 (1970).

⁹⁷ RENE PROVOST, STATE RESPONSIBILITY IN INTERNATIONAL LAW, 133 (2002).

⁹⁸ Sompong Sucharitkul, *State Responsibility and International Liability under International Law*, LOYOLA OF LOS ANGELES INTERNATIONAL AND COMPARATIVE LAW REVIEW 821, 835 (1996); Gorove, *supra* note 22, at 376; HACKET, *supra* note 54, at 180.

constellation.⁹⁹ ASTERIA requested PROCLIVIA for CUSKO's technical documentation¹⁰⁰ after they had authorized the launch. This proves that it was information they were not privy to prior to the authorization.

Further, following the allegations made by *Discovery Journal*, which are not denied by CUSKO,¹⁰¹ ASTERIA did not take adequate action. It neither initiated an investigation to verify the concerns nor remedied the situation. It also unilaterally declared a safety zone that was not based on any communication by the CUSKO management or on any reliable information.¹⁰² This safety zone failed to meet the requirement of reasonableness and also impeded on the freedom of scientific investigation of other states.¹⁰³

Without reliable information and risk assessment ASTERIA allowed the operation of the CUSKO-E-TM satellite. PROCLIVIA submits that that ASTERIA's failure to exercise the requisite standard of due diligence constitutes negligence. Since ASTERIA did not exercise due diligence in ensuring that the operation of the satellite was safe, it can be held liable for the collision.

Thus, the loss of D.A.M.E.-7T was due to the negligence of ASTERIA, the launching state of CUSKO. This constitutes fault and therefore ASTERIA is liable under Article III, LIAB for the damage to the D.A.M.E.-7T satellite.

⁹⁹ *Compromis* ¶4.

¹⁰⁰ *Compromis* ¶8.

¹⁰¹ *Compromis* ¶6.

¹⁰² *Compromis* ¶6.

¹⁰³ Submitted at III.

[1.3] The damage caused to the D.A.M.E.-7T satellite was due to ASTERIA's fault

PROCLIVIA submits that ASTERIA's actions caused the loss of the D.A.M.E.-7T satellite because reasonable inference of causation can be drawn [A]; and the test of proximate causation is satisfied [B].

[A] Reasonable inference of causation can be drawn

In situations where conclusive evidence is unavailable, reasonable inferences can be drawn.¹⁰⁴ The independent investigation did not offer any conclusive evidence regarding the exact factors behind the collision,¹⁰⁵ however, it can be reasonably inferred that CUSKO's faulty operation caused the collision based on the test of proximate causation.

[B] The test of proximate causation is satisfied

The act must satisfy the test of proximate causation for damages to be recoverable. To satisfy this test, the damage must be caused by the initial act, i.e. the damage must be such that it would not have occurred but for the initial act.¹⁰⁶ The damages claimed must also be reasonably foreseeable to the state party.¹⁰⁷ In the case of activities that are ultra-hazardous, damage is

¹⁰⁴ CHITTHARANJAN AMERASINGHE, EVIDENCE IN INTERNATIONAL LITIGATION, 234 (2005).

¹⁰⁵ *Compromis* ¶17.

¹⁰⁶ H.L.A. HART & T. HONORE, CAUSATION IN THE LAW 114,121 (1985); Glanville Williams, *Causation in Law*, 19 CAMBRIDGE LAW JOURNAL J 62, 63 (1961).

¹⁰⁷ Administrative Decision No. II (U.S. v. Germany) 1930, 7 R.I.A.A 23; The "Naulilaa" (Portugal v. Germany) 1928 2 R.I.A.A 1011.

considered reasonably foreseeable if any risk of damage is present.¹⁰⁸ This standard of foreseeability is supported by the travaux.¹⁰⁹ The Draft Articles on Transboundary Harm define ultra-hazardous activities as those which involve a risk of significant transboundary harm.¹¹⁰ In these activities the danger is rarely expected to materialize but when it does it assumes grave proportions.¹¹¹ Further, the risk from these activities can never be quantified and therefore any risk of damage is assumed to be foreseeable keeping the ultra-hazardous nature of these activities in mind.¹¹² Outer space activities are classified as ultra-hazardous activities¹¹³ and therefore the risk of a space collision will be considered reasonably foreseeable.

Here, the damage would not have occurred if the CUSKO-E-TM satellite had not been deployed. Further, based on the report by Discovery Journal¹¹⁴ and the declaration of the “safety zone”¹¹⁵ PROCLIVIA submits that ASTERIA did foresee the danger of space collisions. It did not exercise due diligence in preventing this possibility. Hence, the deployment of the CUSKO-E-TM satellites satisfies the test of proximate causation.

[2] ASTERIA is liable under general international law

The outer space regime does not exclude application of general international law to activities of humans in outer space. In international law, liability is fault-based¹¹⁶ and arises from

¹⁰⁸ Hardie Jr., *Foreseeability: A Murky Crystal Ball for Predicting Liability*, 23(2) CUMBERLAND LAW REVIEW 349 (1992-93).

¹⁰⁹ *Id.*

¹¹⁰ Article 2, Draft Articles on PTH.

¹¹¹ *Id.*

¹¹² Article 1, Draft Articles on PTH.

¹¹³ *Id.*

¹¹⁴ *Compromis* ¶4.

¹¹⁵ *Compromis* ¶6.

¹¹⁶ CHENG, *supra* note 61, at 231.

violation of a duty by a state.¹¹⁷ This liability extends to all damages that were proximate consequences of the violation.¹¹⁸ ASTERIA failed to authorize and continuously supervise the operation of the CUSKO-E-TM satellite.¹¹⁹ ASTERIA is also liable for failing to exercise due diligence¹²⁰ and due regard to the corresponding interests of other states.¹²¹ The violation of these duties constitutes fault. Further, there is a causal link between ASTERIA's actions and the collision.¹²² Therefore, ASTERIA is liable under general international law.

[IIB] PROCLIVIA is not liable under international law for the loss of the CUSKO-E-TM satellite

The loss of the CUSKO-E-TM satellite occurred as a result of the space collision between CUSKO-E-TM and D.A.M.E.-7T. Under Article III, LIAB, the launching state of the space object is liable for damage caused in outer space.¹²³ However, PROCLIVIA submits that it will not be liable for the damage caused to CUSKO-E-TM as PROCLIVIA was not at fault [1]; and there is no causal link between PROCLIVIA's actions and the space collision [2].

[1] PROCLIVIA was not at fault

¹¹⁷ *Factory at Chorzow (Merits) (Ger./Pol.)*, Judgement 1928 P.C.I.J. (ser.A) No. 17. (Sept. 13).

¹¹⁸ CHENG, *supra* note 61, at 253.

¹¹⁹ Submitted at I[1].

¹²⁰ Submitted at I[2].

¹²¹ Submitted at I[3].

¹²² Submitted at IIA[1][1.3]

¹²³ Article III, LIAB.

Liability under Article III of the LIAB is based on fault.¹²⁴ Fault is constituted either by an explicit breach of an international obligation or by negligence.¹²⁵ PROCLIVIA submits that it was not at fault because it did not have any international obligation to share the information requested by ASTERIA [1.1] and PROCLIVIA was not negligent in operating the D.A.M.E.-7T satellite [1.2].

[1.1] PROCLIVIA is not internationally obligated to share the information requested by ASTERIA

ASTERIA may contend that PROCLIVIA violated international law by failing to adhere to the requirements of the “safety zone” and by failing to respond to ASTERIA’s diplomatic note requesting for CUSKO-E-TM’s technical documentation. However, neither of these omissions can constitute fault because PROCLIVIA was not under a legally binding obligation to respond to either of these requests.

[A] PROCLIVIA was not obligated to comply with the safety zone requirement

Regarding “the safety zone” requirements, PROCLIVIA was under no specific, binding obligation to provide ASTERIA with detailed information about the D.A.M.E.-7T satellite. While a general obligation of due regard exists to notify other space faring nations of space activities under Article IX, OST,¹²⁶ this obligation does not extend to giving states specific, detailed information regarding satellite trajectories and novel technologies.¹²⁷

¹²⁴ Armel Kerrest & Lesley Jane Smith, *Article VII*, in 1 COLOGNE COMMENTARY ON SPACE LAW, 126, 139 (Stephan Hobe et al. eds. 2009).

¹²⁵ *Id.*

¹²⁶ Article IX, OST.

¹²⁷ Marchisio, *supra* note 46.

Further, under Article XI, OST, the duty to inform the public only extends to disclosing information that is “feasible and practicable”.¹²⁸ The Waltzing Wizard system was equipped to determine the best trajectory based on background data.¹²⁹ In such a situation it was not feasible for the PROCLIVIAN authorities to give ASTERIA the exact satellite trajectory. State practice also attests that disclosure norms are not obligatory¹³⁰ and depend upon the state alone.¹³¹ Therefore, PROCLIVIA was not bound to disclose such information to ASTERIA or the public at large.

Information regarding novel technologies and satellite trajectories does not fall under the duty of international cooperation either. The United Nations Register Of Objects launched into outer space is an illustration of the scope of cooperation under international law.¹³² Space-faring nations submit to the Secretary-General the date and location of launch, basic orbital characteristics, and general functions of space objects.¹³³ However, the disclosure of a space object’s trajectory lies beyond the scope of duties enshrined in international law.¹³⁴

Therefore, there is no existing obligation under international law that mandates the disclosure of such specific and detailed information. While the general obligations of due regard,

¹²⁸ Article XI, OST.

¹²⁹ *Compromis* ¶11.

¹³⁰ DR. DIEDERIKS-VERSCHOOR & DR. V. KOPAL, AN INTRODUCTION TO SPACE LAW 13 (2008).

¹³¹ Jean Francois Mayence & Thomas Reuter, *Article XI*, in 1 COLOGNE COMMENTARY ON SPACE LAW 609, 631 (Stephan Hobe et al. eds., 2009).

¹³² The United Nations Register Of Objects launched into Outer Space. <https://www.unoosa.org/oosa/en/spaceobjectregister/index.html>

¹³³ See ST/SG/SER.E/926 (India), ST/SG/SER.E/922 (United Kingdom), ST/SG/SER.E/957 (United Arab Emirates), ST/SG/SER.E/803 (USA), ST/SG/SER.E/953 (Russian Federation).

¹³⁴ Paul B. Larsen, *Outer Space Traffic Management: Space Situational Awareness Requires Transparency*, 51 I.I.S.L. PROC. 338, 346 (2008).

consultation and cooperation do exist their scope does not extend to the information requirement of the safety zone.

Further, a unilateral declaration of a safety zone by ASTERIA does not *ipso facto* create any legally binding obligations on PROCLIVIA. In fact, PROCLIVIA submits that, given its size and uncertain time duration, the safety zone was an unlawful measure and unreasonable impediment on the freedoms of other states.¹³⁵ In such a situation, not only is the request for information non-legally binding, it is also unreasonable and unlawful.¹³⁶ Since there is no breach of an international obligation, there is no fault.

[B] PROCLIVIA was not obligated to comply with the diplomatic note

ASTERIA had also requested for technical documentation that CUSKO had submitted to PROCLIVIA as a part of the PROCLIVIAN licensing process. It has already been submitted that CUSKO was functioning under the jurisdiction of ASTERIA.¹³⁷ Thus, ASTERIA was the appropriate and responsible state for its activities.¹³⁸ ASTERIA was obligated to obtain the information that it requested PROCLIVIA, directly from CUSKO, before the launch of the satellite.¹³⁹ ASTERIA's violation of its duty to assess risks cannot be precluded by PROCLIVIA's inability to provide the requested information.¹⁴⁰ None of the obligations regarding international cooperation, consultation, and due regard extend to providing

¹³⁵ *Compromis* ¶17.

¹³⁶ H.L.A. HART & T. HONORE, CAUSATION IN THE LAW 114-121 (1985); Glanville Williams, Causation in Law, 19 CAMBRIDGE LAW JOURNAL 62, 63 (1961).

¹³⁷ Submitted at I[1].

¹³⁸ Submitted at I[1].

¹³⁹ Submitted at I[3].

¹⁴⁰ Submitted at I[3].

information to a state regarding activities in its own jurisdiction. Since this failure to respond to the note does not constitute a breach of an international obligation, there is no fault.

[1.2] PROCLIVIA was not negligent in operating the D.A.M.E.-7T satellite

Negligence is based on a failure to exercise prudence that is considered reasonable in the given circumstances.¹⁴¹ Complying with an unlawful information standard cannot be termed reasonable. Further, there was no evidence indicating that the operation of the D.A.M.E.-7T satellite was faulty. PROCLIVIA even provided Endeavour Enterprises with CUSKO's technical assessments¹⁴² to maximise the efficacy of their own novel technology. Lastly, it may be contended that PROCLIVIA's non-adherence to the PAMINA standard¹⁴³ constitutes negligence. The PAMINA standard is an ISO standard which contains recommendations of a general nature for the use of autonomous transportation systems.¹⁴⁴ ISO standards are merely recommendatory in nature and are not legally binding.¹⁴⁵ Therefore, PROCLIVIA's non-compliance with the PAMINA standard cannot be termed negligent.

[2] There is no causal link between PROCLIVIA's actions and the space collision

Even if it is contended that PROCLIVIA was at fault, PROCLIVIA's failure to notify ASTERIA does not satisfy the test of proximate causation. According to the investigation, the background surveillance data was accurate and was not a factor in the collision.¹⁴⁶ Therefore,

¹⁴¹ Richard Brown, Jr., *General Principles of Liability*, 51 *TULANE LAW REVIEW* 820, 826 (1976-1977)

¹⁴² *Compromis* ¶12.

¹⁴³ *Compromis* ¶7

¹⁴⁴ *Compromis* ¶19

¹⁴⁵ *Compromis* ¶19.

¹⁴⁶ *Compromis* ¶17.

the fact that PROCLIVIA did not submit advanced information of their plans did not cause the space collision. To satisfy the test of proximate causation, the damage must be the cause of the initial act.¹⁴⁷ Since, non-submission of information did not lead to the collision, there is no causal link between PROCLIVIA's actions and the loss of the CUSKO-E-TM satellite and hence PROCLIVIA cannot be held liable.

Since no causation can be established between PROCLIVIA's actions and the loss of the CUSKO-E-TM satellite, PROCLIVIA is not liable under or general international law as well.

¹⁴⁷ H.L.A. HART & T. HONORE, CAUSATION IN THE LAW 114-121 (1985); Glanville Williams, Causation in Law, 19 CAMBRIDGE LAW JOURNAL 62, 63 (1961).

[III] ASTERIA IS INTERNATIONALLY RESPONSIBLE FOR IMPEDING PROCLIVIA'S EXERCISE OF THE FREEDOM OF SCIENTIFIC INVESTIGATION

The outer space and Antarctic treaties are premised on the value of scientific research in the global commons. The D.A.M.E.-7T was the world's most advanced, complex, and expensive Earth observation satellite.¹⁴⁸ The satellite was destined to become a central part of PROCLIVIA's scientific investigation of Antarctica.¹⁴⁹ However, its collision with a CUSKO-E-TM satellite led to its destruction.¹⁵⁰ The resultant radioactive pollution also put an abrupt end to PROCLIVIA's Antarctic investigations, forcing it to shut down research stations *SEEKER-I* and *SABERT-V*.¹⁵¹

PROCLIVIA submits that ASTERIA is internationally obligated to respect PROCLIVIA's exercise of the freedom of scientific investigation [1]. It further submits that the freedom of scientific investigation is part of the freedom of exploration, and subject to limitations [2]. ASTERIA has impaired PROCLIVIA's exercise of the freedom of scientific investigation in two ways: restriction of free access to outer space [3], and harmful contamination of the outer space and Antarctic environments [4]. Finally, PROCLIVIA submits that ASTERIA is internationally responsible for the aforementioned impediment [5].

[1] ASTERIA is internationally obligated to respect PROCLIVIA's exercise of the freedom of scientific investigation

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ *Compromis* ¶15.

¹⁵¹ *Compromis* ¶16.

Article I of the OST grants the freedom of scientific investigation in outer space to all states.¹⁵² The freedoms of Article I form part of customary international law.¹⁵³ In *Barcelona Traction*,¹⁵⁴ this Court recognised that certain treaty obligations, including those of Article I OST,¹⁵⁵ are also *erga omnes* obligations owed to the international community at large. Therefore, ASTERIA's non-ratification of the OST is immaterial. Customary law obligates the Respondent to respect PROCLIVIA's exercise of the freedom of scientific investigation in outer space.

Article II of the Antarctic Treaty provides for "freedom of scientific investigation and cooperation toward that end".¹⁵⁶ The provision seeks to preserve Antarctica's pristine form for continued use as a laboratory for science.¹⁵⁷ Textually, this freedom is limited to scientific activities and investigations pursued in the International Geophysical Year (IGY). In practice, this limitation is not observed.¹⁵⁸ Both PROCLIVIA and ASTERIA are party to the Antarctic Treaty.¹⁵⁹ Therefore, ASTERIA is obligated to respect PROCLIVIA's exercise of the freedom of scientific investigation in Antarctica.

[2] The freedom of scientific investigation is part of the freedom of exploration, and subject to limitations.

¹⁵² Article I, OST.

¹⁵³ Ram Jakhu & Steven Freeland, *The Relationship Between the Outer Space Treaty and Customary International Law* 59 I.I.S.L. PROC. 1, 9 (2017); A/AC.105/C.2/2017/CRP.6, art. 5.1.

¹⁵⁴ *Barcelona Traction, Light and Power Company, Limited (Belgium v Spain)* (New Application:1962), Judgement, 1970 I.C.J. Rep. 3 (Feb. 5), ¶2.

¹⁵⁵ Jakhu, *supra* note 43.

¹⁵⁶ Article II, The Antarctic Treaty, 402 U.N.T.S. 71, *entered into force* June 23, 1961 [hereinafter Antarctic Treaty].

¹⁵⁷ Peter J. Beck, *The Antarctic Treaty System after 25 Years*, 42 THE WORLD TODAY 196, 197 (1986).

¹⁵⁸ SUSAN J. BUCK, *THE GLOBAL COMMONS: AN INTRODUCTION* (Island Press, 1998).

¹⁵⁹ *Compromis* ¶19.

The freedom of scientific investigation is part of the broader freedom of exploration enshrined in Article I.¹⁶⁰ The *travaux préparatoires* of the OST reveal that the drafters understood “exploration” as an activity of a research and investigative nature.¹⁶¹ The freedom of use and exploration is limited¹⁶² and qualified¹⁶³ in nature. As the freedom of scientific investigation is part of the freedom of exploration, it logically follows that it is subject to the same set of limitations.

Any interpretation of the freedom principle must be alive to the treaty system and the limitations enshrined therein. However, a presumption lies in favour of the freedoms. If the meaning and scope of a limitation is ambiguous, the freedom principle prevails.¹⁶⁴ Importantly, the burden of proof for a limitation of a freedom lies on the party claiming the limitation.¹⁶⁵

Therefore, the onus lies on ASTERIA to establish that its activities do not extend beyond lawful limitations on the freedom of scientific investigation.

[3] ASTERIA restricted free access to outer space

The freedom of access is a logical extension of the freedom of scientific investigation.¹⁶⁶ It is elemental to the very notion of use and exploration.¹⁶⁷ In the absence of free access, the

¹⁶⁰ Hamilton DeSaussure, *The Freedoms of Outer Space and their Maritime Antecedents*, in *SPACE LAW: DEVELOPMENT AND SCOPE* 3, 8 (Nandasiri Jasentuliyana ed., 1992).

¹⁶¹ UN.Doc. A/AC.105/C.2/SR.57

¹⁶² Jakhu, *supra* note 43.

¹⁶³ Manfred Lachs, *The International Law of Outer Space*, III RECUEIL DES COURS 105 (1964).

¹⁶⁴ HACKET, *supra* note 54, at 66.

¹⁶⁵ *Id.*

¹⁶⁶ MANFRED LACHS, *THE LAW OF OUTER SPACE: AN EXPERIENCE IN CONTEMPORARY LAWMAKING* 45 (Brill 2010).

¹⁶⁷ DeSaussure, *supra* note 160, at 6.

freedom of scientific investigation is rendered meaningless. Therefore, any infringement of free access impedes exercise of the freedom of scientific investigation.

PROCLIVIA submits that ASTERIA has restricted free access to space in two ways: national appropriation of outer space through the orbital positioning of the CUSKO-E-TM satellite constellation [3.1]; and the unilateral declaration of an unreasonable safety zone. [3.2].

[3.1] The orbital positioning of the CUSKO-E-TM satellite constellation amounts to national appropriation of outer space

National appropriation of outer space is prohibited by “claim of sovereignty, by means of use or occupation, or by any other means”.¹⁶⁸ The prohibition on national appropriation, enshrined in Article II of the OST, acts as a limitation on the freedom of use and exploration.¹⁶⁹ A state’s activities amount to national appropriation when, as a result of such activities, other states are deprived of their equal right to use and explore.¹⁷⁰

The CUSKO-E-TM satellite constellation inhabits 25 orbital planes between 790 and 810 km altitude.¹⁷¹ These orbital planes are part of Low-Earth Orbit [LEO].¹⁷² Excessive use of the LEO amounts to appropriation when such use restricts free access to outer space without regard

¹⁶⁸ Article II, OST.

¹⁶⁹ Stephen Gorove, *Limitations of the Principle of Freedom and Exploration and Use in the Outer Space Treaty: Benefits and Interests*, 13 I.I.S.L. PROC. 74 (1971).

¹⁷⁰ Stephen Gorove, *Interpreting Article II of the Outer Space Treaty*, 37 FORDHAM LAW REVIEW 349, 352 (1969).

¹⁷¹ *Compromis* ¶1.

¹⁷² LEO ECONOMY FAQs, <https://www.nasa.gov/leo-economy/faqs> (last visited Mar. 4, 2021); LEO, https://www.esa.int/ESA_Multimedia/Images/2020/03/Low_Earth_orbit (last visited Mar 4, 2021).

to the corresponding interests of other states.¹⁷³ The LEO is one of the most heavily-utilized parts of outer space,¹⁷⁴ and cannot accommodate an unlimited number of satellites.¹⁷⁵

Options for orbital positioning are further reduced by a number of considerations, including the need to maintain distance between satellites to avoid harmful interference and mitigate the risk of collision.¹⁷⁶ Physical congestion of satellites in orbital space heightens the threat of collisions.¹⁷⁷ The proliferation of satellites in LEO poses a physical challenge to the OST's legal goal of long-term sustainable access to outer space for all states.¹⁷⁸ Similar concerns followed the launch of SpaceX's Starlink, Amazon's Project Kuiper, and OneWeb's Phase One.¹⁷⁹

CUSKO-E-TM's presence in LEO is national appropriation by means of use and occupation.¹⁸⁰ The satellite constellation heightened the pre-existing risk of collision in its orbital altitude.¹⁸¹ Further, *ASTERIA*'s excessive use of LEO made it effectively impossible for D.A.M.E.-7T to

¹⁷³ CHENG, *supra* note 61, at 401.

¹⁷⁴ Vladimir Kopal, *The Need for International Law Protection of Outer Space Environment Against Pollution of Any Kind, Particularly Against Space Debris*, 32 I.I.S.L. PROC. 107 (1989).

¹⁷⁵ Neta Palkovitz, *Dealing with The Regulatory Vacuum in LEO: New Insurance Solutions For Small Satellite Constellations*, 67 I.I.S.L. PROC. (2016).

¹⁷⁶ CHENG, *supra* note 61, at 566.

¹⁷⁷ STEPHEN GOROVE, DEVELOPMENTS IN SPACE LAW: ISSUES AND POLICIES 128 (Kluwer Academic Publishers 1991).

¹⁷⁸ Larry F. Martinez, *The Legal Dimensions of Cyber-Conflict with Regard to Large Satellite Infrastructures and Constellations*, 67 I.I.S.L. PROC. (2016).

¹⁷⁹ See Amy Thompson, *Traffic Jams From Satellite Fleets Are Imminent- What It Means for Earth*, OBSERVER (Sep. 5, 2019, 3:39 PM), <https://observer.com/2019/09/satellite-space-congestion-spacex-starlink-esa-aeolus/>; Mathilde Minet, *The Space Legal Issues With Mega-constellations*, SPACE LEGAL ISSUES (Nov. 3, 2020), <https://www.spacelegalissues.com/mega-constellations-a-gordian-knot/>; Louis de Gouyon Matignon, *Project Kuiper, A Satellite Constellation by Amazon*, SPACE LEGAL ISSUES (Sep. 24, 2019) <https://www.spacelegalissues.com/the-future-space-legal-issues/>; Louis de Gouyon Matignon, *Orbital Slots and Space Congestion*, SPACE LEGAL ISSUES (Jun. 8, 2019) <https://www.spacelegalissues.com/orbital-slots-and-space-congestion/>.

¹⁸⁰ Yuri Takaya-Umehara et al, *The Principle of Non-Appropriation and the Exclusive Uses of LEO by Large Satellite Constellations* 61 I.I.S.L. PROC. 855 (2018).

¹⁸¹ *Compromis* ¶8.

safely access its intended orbital altitude. Therefore, it is an unlawful limitation on PROCLIVIA's exercise of the freedom of scientific investigation.

[3.2] The unilateral declaration of an unreasonable “safety zone” unlawfully restricts free access to outer space

ASTERIA unilaterally declared a “safety zone” at the orbital altitude of the CUSKO-E-TM satellite.¹⁸² A safety zone is an “area-based safety measure... necessary to assure safety and to avoid any harmful interference.”¹⁸³ It deprives other states of free access to a designated orbital altitude, and involves a certain measure of exclusion and alienation.¹⁸⁴ ASTERIA asserts that the safety zone is an attempt to mitigate the risk of collision,¹⁸⁵ and might contend that the safety zone is a reinforcement of the principle of due regard.

Admittedly, the establishment of safety zones is a regular occurrence in airspace and on the high seas.¹⁸⁶ However, any declared safety zone must satisfy the test of reasonableness.¹⁸⁷ The UNCLOS provides for the creation of reasonable safety zones around artificial islands, mining activities, and research facilities.¹⁸⁸ NASA's Artemis Accords provide detailed guidance on the establishment and operation of safety zones around lunar installations.¹⁸⁹ Section 11 of the

¹⁸² *Compromis* ¶8.

¹⁸³ 11.3, Building Blocks for the Development of an International Framework on Space Resource Activities, Working Paper submitted by Luxembourg and the Netherlands, U.N.Doc. A/AC.105/C.2/L.315.

¹⁸⁴ Kiran Mohan Vazhapully, *Space Law at the Crossroads: Contextualizing the Artemis Accords and the Space Resources Executive Order*, OPINIO JURIS (Jul. 22, 2020).

¹⁸⁵ *Compromis* ¶8.

¹⁸⁶ F. Kenneth Schwetje, *Protecting Space Assets: A Legal Analysis of “Keep-out Zones”*, JOURNAL OF SPACE LAW 131 (1987).

¹⁸⁷ MYERS S. MCDUGAL, LAW AND PUBLIC ORDER IN SPACE 301-311 (1963).

¹⁸⁸ Article 60, UNCLOS.

¹⁸⁹ Principles for Cooperation in the Civil Exploration and Use of the Moon, Mars, Comets, and Asteroids for Peaceful Purposes, Oct. 13, 2020 [hereinafter, Artemis Accords].

Accords prescribes that the size of safety zones must be determined in a reasonable manner.¹⁹⁰

It is also pertinent to note that the Accords have not been universally welcomed.¹⁹¹

The reasonableness of a safety zone can be ascertained from its extent, duration, and imposed restrictions.¹⁹² ASTERIA's safety zone spans the entire orbital altitude inhabited by 1500 satellites in 25 orbital planes.¹⁹³ In the absence of any indication to the contrary, the safety zone is assumed to be an indefinite establishment. The safety zone can be likened to an unavoidable ring around the Earth. The D.A.M.E.-7T could not reach its designated quasi-polar orbit without crossing ASTERIA's safety zone.¹⁹⁴

It is accepted that ASTERIA's denial of access is limited in nature. The safety zone does not prohibit entry, but warns of dangerous activity.¹⁹⁵ The United Nations Register Of Objects launched into outer space is an illustration of the scope of cooperation under international law.¹⁹⁶ Space-faring nations submit to the Secretary-General the date and location of launch, basic orbital characteristics, and general functions of space objects.¹⁹⁷ However, the disclosure of a space object's trajectory lies beyond the scope of international law.¹⁹⁸ Therefore, ASTERIA's request is unreasonable.

¹⁹⁰ Section 11, Artemis Accords.

¹⁹¹ Jack Wright Nelson, *The Artemis Accords and the Future of International Space Law*, AMERICAN SOCIETY OF INTERNATIONAL LAW (Dec. 10, 2020) https://www.asil.org/sites/default/files/ASIL_Insights_2020_V24_I31.pdf.

¹⁹² Schwetje, *supra* note 186, at 141.

¹⁹³ *Compromis* ¶1.

¹⁹⁴ *Compromis* ¶11.

¹⁹⁵ *Compromis* ¶8.

¹⁹⁶ The United Nations Register Of Objects launched into Outer Space. <https://www.unoosa.org/oosa/en/spaceobjectregister/index.html>

¹⁹⁷ See ST/SG/SER.E/926 (India), ST/SG/SER.E/922 (United Kingdom), ST/SG/SER.E/957 (United Arab Emirates), ST/SG/SER.E/803 (USA), ST/SG/SER.E/953 (Russian Federation).

¹⁹⁸ Larsen, *supra* note 134, at 346.

In light of the concerns of exclusion and the primacy of the access principle, any designation of a specific safety zone must be consented to by all international actors.¹⁹⁹ Not only did ASTERIA unilaterally declare a safety zone but also did not initiate any consultation post-declaration. The extent, unspecified duration, and associated restrictions cement the unreasonableness of ASTERIA's safety zone. Failure to meet the test of reasonableness renders the safety zone violative of international law. Therefore, ASTERIA's safety zone is an unlawful limitation on the freedom of scientific investigation.

[4] ASTERIA's national activities amount to harmful contamination of the outer space and Antarctic environments

The 1941 *Trail Smelter* arbitration is the basis of the general rule of customary international law regarding environmental protection.²⁰⁰ The principle establishes an obligation upon states to not allow the use of their territory in a manner that causes damage in or to the territory of another state.²⁰¹ Principle 21 of the Stockholm Declaration, considered declaratory of customary international law,²⁰² obliges states to prevent environmental damage beyond the limits of national jurisdiction.²⁰³ This protection of common spaces and resources extends to outer space and Antarctica.²⁰⁴

¹⁹⁹ Tugrul Cakir, *From the Unilateral Acts of States towards Unilateralism in Space Law*, 61 I.I.S.L PROC. 15 (2018); Jessy Kate Schingler, *Imagining safety zones: Implications and open questions*, THE SPACE REVIEW (Jun. 8, 2020) <https://www.thespacereview.com/article/3962/1>

²⁰⁰ *Trail Smelter Arbitration (U.S./Can.)* 3 R.I.A.A. 1905 (1941).

²⁰¹ *Id.*

²⁰² He Qizhi, *Space Law and the Environment*, in *SPACE LAW: DEVELOPMENT AND SCOPE* 159 (Nandasiri Jasentuliyana ed., 1992).

²⁰³ Report of the U.N. Conference on the Human Environment, U.N. Doc. A/CONF.48/14.

²⁰⁴ Andrea Bianchi, *Environmental Harm Resulting from the Use of Nuclear Power Sources in Outer Space: Some Remarks on State Responsibility and Liability*, in *INTERNATIONAL RESPONSIBILITY FOR ENVIRONMENTAL HARM* 231, 262 (Francesco Francioni et al. eds., 1991).

Article IX of the OST enshrines the general principle of the prevention of transboundary harm, and obligates states to “avoid ... harmful contamination [of outer space], and also adverse changes in the environment of the Earth resulting from the introduction of extraterrestrial matter”.²⁰⁵ The Article IX principle protects the value of the freedom of scientific research.²⁰⁶ Therefore, ASTERIA is obligated to ensure that its activities do not harmfully contaminate the environment of Antarctica and outer space.

Harmful contamination is the “human alteration of the space environment through the introduction of undesirable elements or through the undesirable use of elements.”²⁰⁷ It denotes an “excessive presence of substances or human activities that upset the balance of the environment or interfere with space activities.”²⁰⁸

Prior to the collision, several CUSKO satellites were lost within weeks of their deployment.²⁰⁹ Post the collision, a cloud of space debris remained suspended at the orbital altitude of the CUSKO-E-TM satellite constellation.²¹⁰ Space debris is deleterious for the outer space environment.²¹¹ The Committee on the Peaceful Uses of Outer Space considers space debris a prime threat to continued access to the benefits of outer space.²¹² It travels at high speeds and, in most instances, cannot be tracked.²¹³

²⁰⁵ Article IX, OST.

²⁰⁶ Bianchi, *supra* note 206, at 262.

²⁰⁷ STEPHEN GOROVE, *STUDIES IN SPACE LAW: CHALLENGES AND PROSPECTS* 153, 154 (1977).

²⁰⁸ He Qizhi, “*Environmental Impact of Space Activities and Measures for International Protection*” 16(2) *JOURNAL OF SPACE LAW* (1988).

²⁰⁹ *Compromis* ¶6.

²¹⁰ *Compromis* ¶15.

²¹¹ VIHKARI, *supra* note 45.

²¹² Comm. On the Peaceful Uses of Outer Space, at 129, U.N. GAOR A/61/20.

²¹³ James P. Lampertius, *The Need for an Effective Liability Regime for Damage Caused by Debris in Outer Space*, 13 *MICHIGAN JOURNAL OF INTERNATIONAL LAW* 447 (1992).

Environmental adversities, such as space debris and nuclear contamination, jeopardize the freedom of exploration and scientific investigation.²¹⁴ Pollution prejudices further research by rendering it either impossible or unreliable.²¹⁵ Contamination of the natural environment endangers the rights of all states to use and explore the cosmos.²¹⁶ Access to space is also compromised by the proliferation of space debris.²¹⁷ In turn, this acts as an impediment to the freedom of scientific investigation.

Several fragments of the D.A.M.E.-7T crashed into the *Uvavian Ice Shelf* as a consequence of ASTERIA's conduct.²¹⁸ The resultant radioactive pollution led to the shutdown of *SEEKER-I* and *SABERT-V*.²¹⁹ The spread of plutonium on the Antarctic surface amounts to harmful contamination on the surface of the Earth. Back-contamination poses a serious risk to the use and exploration of Antarctica, and can permanently alter the Antarctic ecosystem.²²⁰

Both customary international law and treaty regimes obligate ASTERIA to avoid harmful contamination of the Antarctic and outer space environments.²²¹ However, ASTERIA did not undertake either appropriate or adequate measures to prevent, mitigate, or curb such contamination. Therefore, ASTERIA's conduct is violative of international law.

²¹⁴ GOROVE, *supra* note 177, at 129.

²¹⁵ MANFRED LACHS, *THE LAW OF OUTER SPACE: AN EXPERIENCE IN CONTEMPORARY LAWMAKING* 106 (Brill 2010); Karl-Heinz Böckstiegel, *Procedures to Clarify the Law Regarding Environmental Aspects of Activities in Outer Space*, 32 I.I.S.L. PROC. 65 (1989).

²¹⁶ Patricia M Sterns and Leslie I Tennen, *Principles of Protection of Outer Space Environment in the corpus juris spatialis*, 30 I.I.S.L. PROC. (1997).

²¹⁷ VIHKARI, *supra* note 45.

²¹⁸ *Compromis* ¶15; Submitted at [IIA][1][1.3].

²¹⁹ *Compromis* ¶16.

²²⁰ DONALD R. ROTHWELL, *THE POLAR REGIONS AND THE DEVELOPMENT OF INTERNATIONAL LAW* (Cambridge Univ. Press, 1996).

²²¹ Charles C Okolie, *Legal Requirements for the Protection of Outer Space and the Global Environment*, 33 I.I.S.L. PROC. 158, 162 (1990).

[5] ASTERIA is internationally responsible for the aforementioned impediments

Article VI of the OST enshrines the principle of international responsibility for “national activities” in outer space.²²² The provision functions as a limitation of the freedoms of exploration, use, and scientific investigation.²²³ Furthermore, Article 1 of the ARSIWA states that every internationally wrongful act of a state entails its international responsibility.²²⁴

There are two elements of state responsibility: imputability of a wrongful act to a certain state, and thereby arising legal consequences.²²⁵ As a general principle of law, responsibility attaches to conduct, and not to events consequent to such conduct.²²⁶ Conduct includes both act and omission.²²⁷

CUSKO is under the exclusive control and jurisdiction of ASTERIA.²²⁸ The satellite constellation’s orbital positioning and the associated safety zone are unlawful limitations on the freedom of scientific investigation.²²⁹ Further, ASTERIA’s fault caused the collision between the CUSKO-E-TM satellite and the D.A.M.E.-7T.²³⁰ The outer space and Antarctic environments were harmfully contaminated as a consequence of the collision.²³¹ Therefore,

²²² Article VI, OST.

²²³ Gerhard, *supra* note 32.

²²⁴ Article 1, ARSIWA.

²²⁵ IAN BROWNLIE, 1 SYSTEM OF THE LAW OF NATIONS: STATE RESPONSIBILITY (Oxford University Press 1983).

²²⁶ Katherine M. Gorove, *International Responsibility for Endangering the “Space Commons”: Focus On A Hypothetical Case*, 33 I.I.S.L. PROC. (1990).

²²⁷ Spanish Zone of Morocco Claims (1923), Rapport III (1924) 2 UNRI.

²²⁸ Submitted at [I][1][1.1][B].

²²⁹ Submitted at [III][3].

²³⁰ Submitted at [IIA][1][1.3].

²³¹ Submitted at [III][4].

ASTERIA is internationally responsible for impeding PROCLIVIA's exercise of the freedom of scientific investigation.

SUBMISSIONS TO THE COURT

For the foregoing reasons, PROCLIVIA, the Applicant, respectfully requests the Court to adjudge and declare that:

- a. ASTERIA violated international law as it failed to consult and continuously supervise the space activities of CUSKO.
- b. ASTERIA is liable for the loss of the D.A.M.E.-7T satellite.
- c. PROCLIVIA is not liable for the loss of the CUSKO satellite.
- d. ASTERIA is internationally responsible for impeding PROCLIVIA'S exercise of the freedom of scientific investigation under the Outer Space Treaty and the Antarctic Treaty.