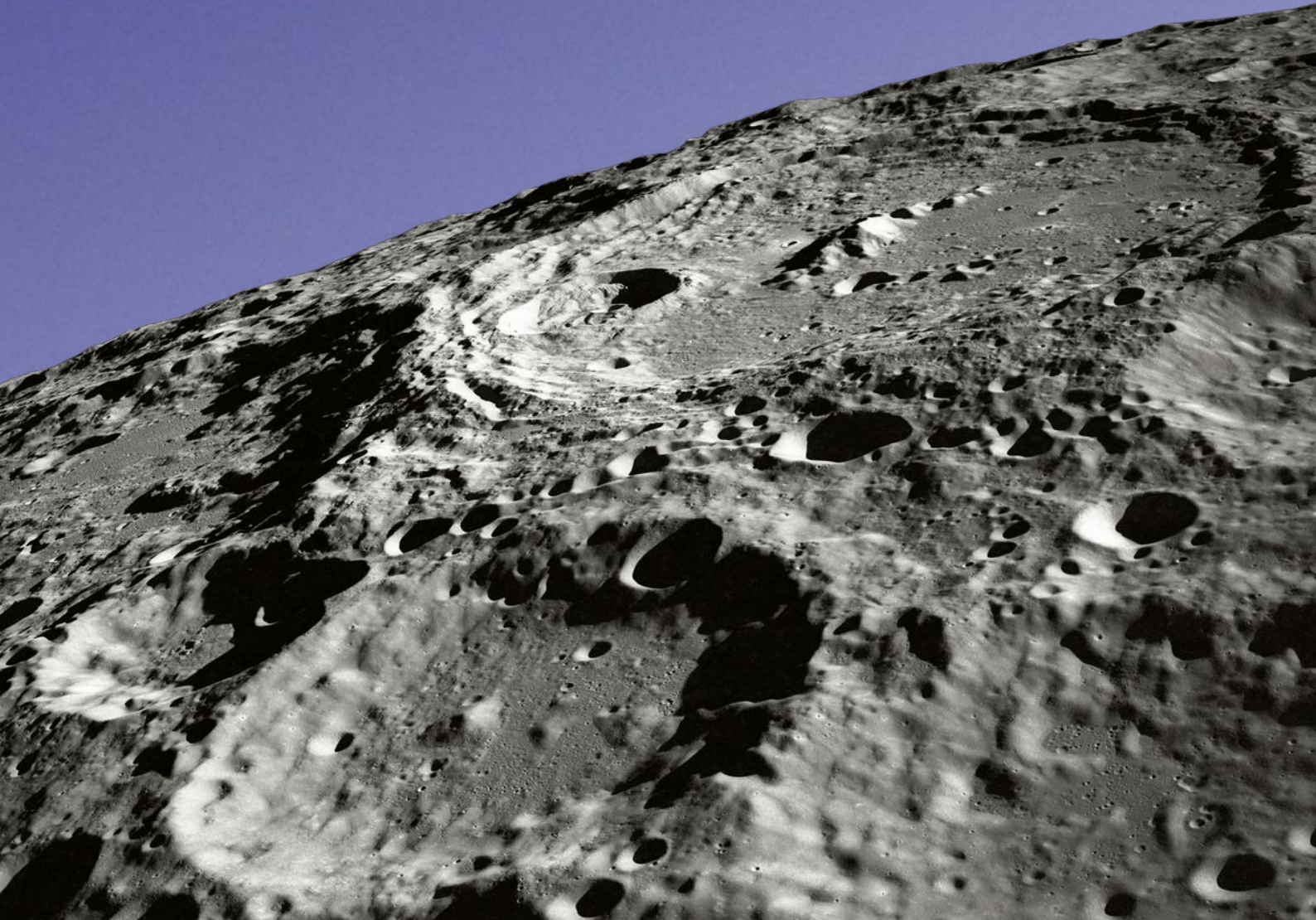




OPEN LUNAR
FOUNDATION

Annual Report

2025



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Letter from the Executive Director



In the early 2010s, when the first ideas that would become Open Lunar began to take shape, the lunar landscape looked very different. Commercial lunar missions were speculative, international lunar coordination was largely theoretical, and the idea that dozens of public and private actors would soon be operating on and around the Moon felt distant. Humanity had been to the Moon before, but never in this way. The Apollo era proved what was technically possible; today's return would be about what becomes permanent, shared, and precedent-setting.

By Open Lunar's founding in 2018, as those early conversations crystallised into a shared vision, momentum was beginning to build, but governance was not keeping pace. Launch costs were falling, national programs were re-prioritising the Moon, and commercial ventures were emerging faster than shared norms, data systems, or coordination mechanisms. It was a moment full of promise, but also risk: critical precedents were beginning to form in the absence of transparency, communication, or collective stewardship.

In this second half of the decade, the Moon is no longer a future scenario. It is an active, contested, and rapidly evolving domain. Missions are flying, investments are accelerating, and de facto rules are being set in real time. The questions Open Lunar was created to address, how we coordinate, how we share information, and how we steward a shared celestial body, are no longer theoretical. They are urgent. Which is why Open Lunar formally engaged lunar stakeholders and international institutions across 2025 to seed potential pathways for global cooperation at the Moon in multiple areas.

This annual report is both a reflection and a thank you. It highlights the progress we made in 2025, advancing transparency systems, coordination frameworks, and practical governance tools, while also acknowledging the challenges of building public-interest infrastructure in a fast-moving and fragmented environment. Above all, it reflects deep gratitude to our team, board, partners, and supporters, whose trust and collaboration make this work possible.

As we look ahead to the coming year, our focus is clear: to continue translating shared values into durable systems that guide lunar activity responsibly, cooperatively, and with long-term stewardship at their core. The choices being made now will echo far beyond the Moon, and Open Lunar remains committed to helping ensure those choices are ones we can be proud of.

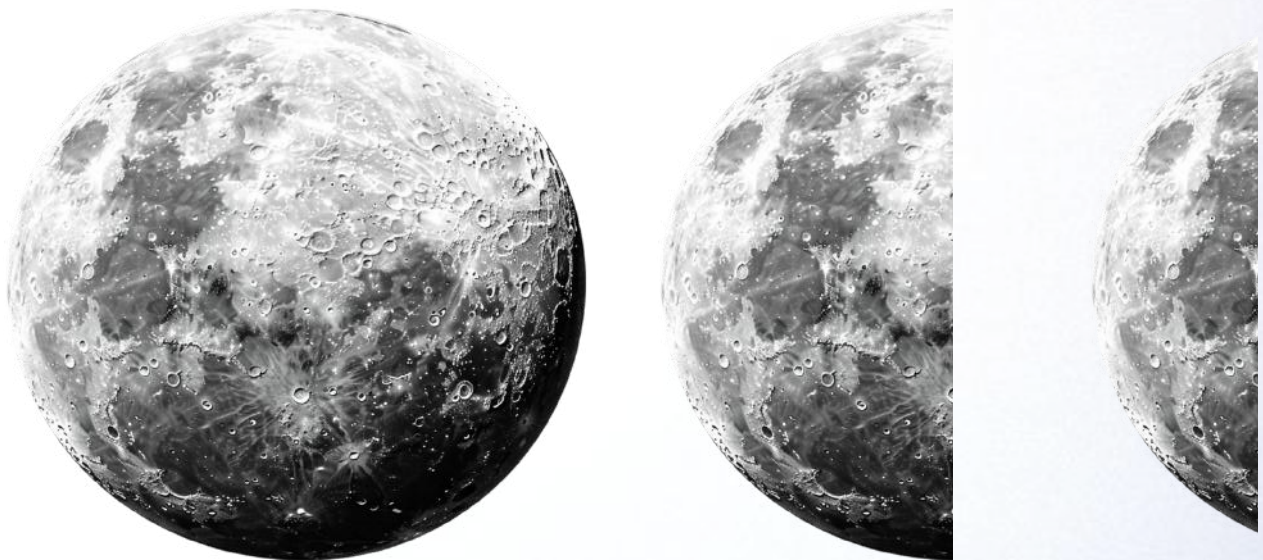
Rachel Williams
Executive Director

Vision

Open Lunar Foundation's vision is for a peaceful, human presence on the Moon for the long term, which contributes to the positive evolution of society for the benefit of all life.

Mission

Open Lunar Foundation's mission is to ensure a peaceful, cooperative, and sustainable human presence on the Moon by fostering international cooperation, developing open standards, and advancing research.



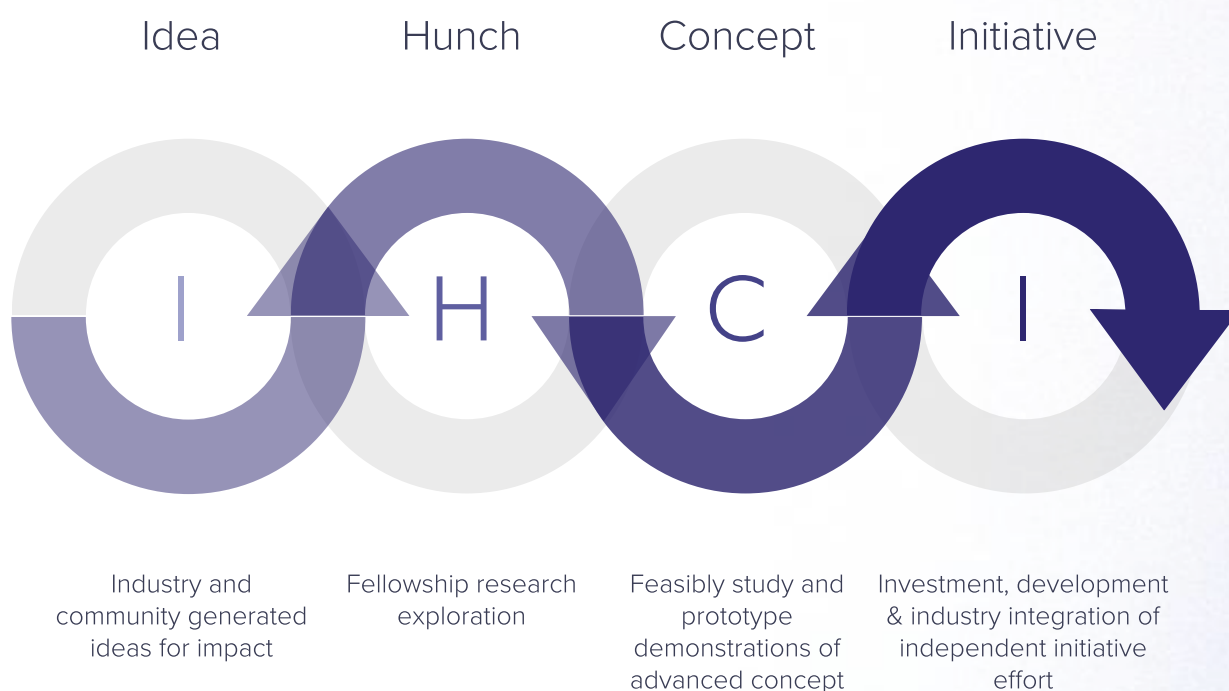
Innovation Process

Our innovation process has been shaped and refined over many years of hands-on work. Today, it functions as a practical, repeatable way to **turn ideas into real-world impact**.

We use this process to bring together experts from across science, policy, industry, and civil society to co-design projects that influence governance, set norms, and encourage cooperation. Rather than working alone, we act as a trusted convener and steward—curating participation, aligning incentives, and ensuring outcomes stay focused on the public interest.

This approach allows Open Lunar to generate far greater impact than we could through internal work alone, while maintaining more purpose and accountability than a traditional accelerator or open community model. It relies on the voluntary contributions of senior experts and reflects our core values of collaboration, transparency, and shared responsibility.

In practice, this looks like taking an idea through to initiatives such as the Lunar Ledger—where governments, companies, and researchers voluntarily share information through a neutral platform to reduce risk, improve coordination, and set cooperative norms early.



“ Through our innovation approach, we build shared governance infrastructure directly with the actors who will ultimately operate within it. Early partner engagement creates ownership that drives adoption and replication, extending impact far beyond individual collaborations.

Mehak Sarang
Director of Industry Integration

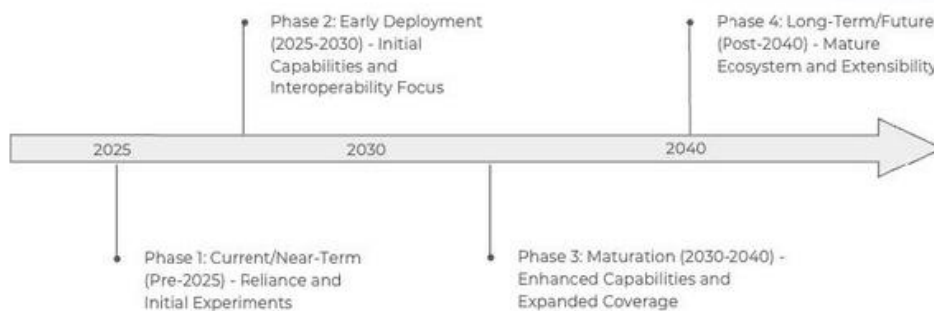
Hunch

Lunar Positioning, Navigation, and Timing (PNT)

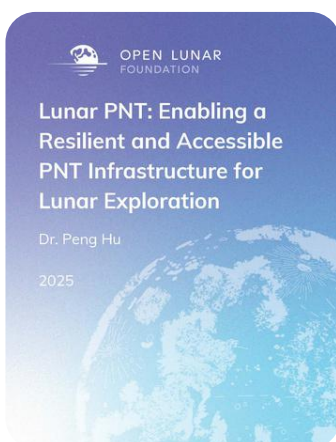
2025 Fellow: **Dr. Peng Hu**



The next-generation landers need accurate trajectories, rovers need the confidence to know where they are, and scientists need clocks that agree across sites and orbits. Dr. Peng Hu developed a phased blueprint for scaling lunar positioning, navigation, and timing (PNT) capabilities as open infrastructure. It starts by leveraging faint Earth GNSS signals, as demonstrated by the Firefly Blue Ghost 1 lander in 2025, then grows into dedicated lunar services. This will provide reliable time, able to be leveraged by many, resilient at the poles, and ready for science and safety.



Lunar PNT evolution roadmap
Lunar PNT White Paper



Phase one leverages GPS, Galileo spillover, and mission-tested lunar receivers. Phase two adds dedicated transmitters in lunar orbit, built by multiple providers but compatible by design. Phase three places surface time stations near operations, giving timing when terrain blocks the sky. Interfaces such as LunaNet and augmented forward signals let agencies and companies securely stack services instead of duplicating them. That increases accuracy towards centimetre precision and broadens coverage. Peng highlights authentication and governance so the network stays trustworthy as it grows.

[Read: Lunar PNT: Enabling a Resilient and Accessible PNT Infrastructure for Lunar Exploration](#)

Read the details: [Lunar PNT | White Paper](#) • [Lunar PNT | Fellowship Showcase](#) • [Lunar PNT: Enabling Sustainable Infrastructure for Lunar Missions | Blog Post](#)

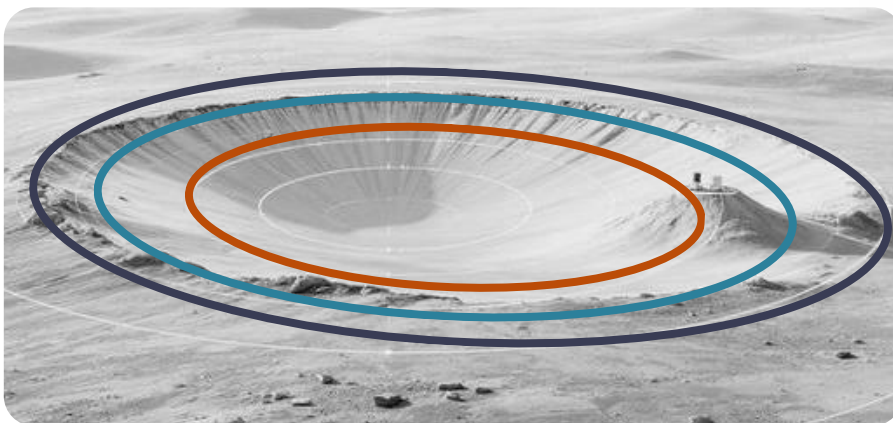
Hunch

Designated Lunar Areas

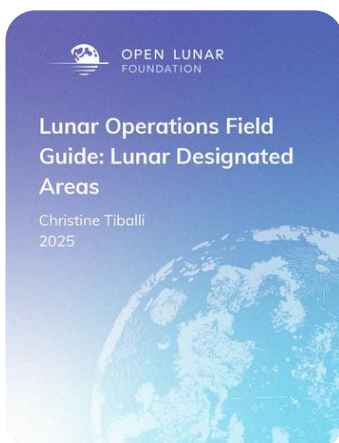
2025 Fellow: **Christine Tiballi**



Designated Lunar Areas respond to a growing coordination challenge. As more missions concentrate around high-value lunar sites, general principles of “due regard” are unlikely to prevent interference, contamination, or unsafe proximity. Christine’s work treats coordination as an engineering-adjacent design problem grounded in mission location, activity, and duration. The objective of her Fellowship is to preserve open access while introducing predictable, mission-ready mechanisms that reduce conflict risk as lunar traffic, infrastructure, and surface operations scale.



The 3-ring safety system
Lunar Areas Field Guide



The model uses a three-ring structure. The inner core area supports critical operations and sensitive deployments with clearly defined constraints. The middle harmonisation area provides space for mitigation measures where activities may overlap. The outer coordination buffer zone remains broadly accessible, given the compliance with shared operating and deconfliction requirements. The approach focuses on areas around shared infrastructure and higher-risk activities. The boundaries and protocols are shaped by operational needs such as safety, contamination control, and access, and can be adapted as traffic increases and new systems are introduced.

Read: [Lunar Areas Field Guide](#)

Read the details: [Lunar Areas Field Guide](#) • [Fellowship Showcase](#) • [Blog Post #1](#) • [Blog Post #2](#) • [Blog Post #3](#)

Hunch

Policy Tabletop: Between The Craters

Contributors: **Samuel Jardine • Mehak Sarang**

Partners: **Secure World Foundation • Dark Matter Labs • Foresight Institute • Berggruen Institute Climate Cartographics**



Between the Craters is designed as a lunar governance tabletop. It brought together 40+ senior representatives from governments, space agencies, industry, academia, NGOs, media, and international organisations at the 2025 International Astronautical Congress. The aim was to stress-test how actors behave when lunar operations become politically charged, information is incomplete, and coordination mechanisms lag behind reality. Earth-based pressures were baked in to reflect how surface decisions are shaped by politics, signalling, and time pressure.



“

This enthusiasm indicates that narrative-based simulations can bridge disciplinary and institutional silos by giving participants a shared experiential vocabulary.

Liam Cohen
Berggruen Institute



“

A highly unique tabletop that brought together in the same room experts and professionals who otherwise wouldn't interact and got us thinking about key lunar policy issues and challenges holistically in an engaging, comprehensive, and collaborative way.

Senior government official

Read the details: [Between the Craters | Project Page](#) • [Blog Post #1](#)

Concept

Lunar Timekeeping

Contributors: **Ashley Kosak • Philip Linden**

Partners: **MoonDAO • Rochester Institute of Technology (RIT)**

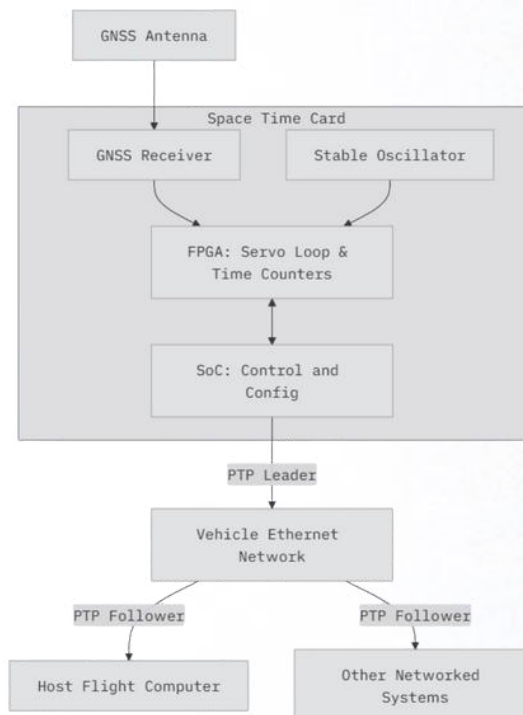


The Lunar Timekeeping Concept explores how to establish a lunar time reference that improves navigation, coordination, and safety when assets cannot rely on continuous links to Earth. The project moved from idea to hardware. Partnering with MoonDAO, Open Lunar Foundation sponsored six engineering students at Rochester Institute of Technology to build a low-cost timing payload for a lunar CubeSat, the Time Card project.



“ If we’re going to bring one thing to the Moon, it better do more than one job - and PNT paired with communications is a powerful way to increase value.

Philip Linden
Open Lunar Fellow



High-level overview of the Space Time Card System Architecture

With support from Open Lunar, Phil and Ashley also launched **Epoch** in late 2025 as an open-source lunar time standard that helps students, developers, and industry coordinate where GNSS cannot reach, using networks of clocks rather than a single clock.

Read the details: [Lunar Timekeeping | Project Page](#) • [A Brief on Lunar Coordinated Time • Possibilities for a Local Lunar Time Standard | White Paper](#) • [Keeping time at the Moon | Blog Post](#)

Initiative

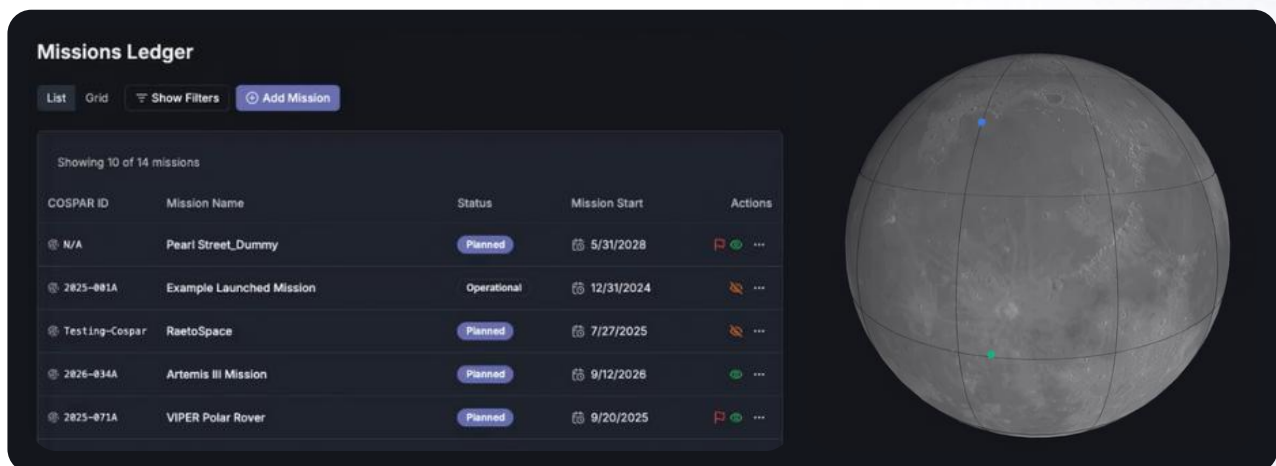
Lunar Ledger

lunarledger.space

Contributors: **Christine Tiballi** • **Samuel Jardine** • **Mehak Sarang** • **Rachel Williams**

Partners: **Firefly Aerospace** • **ispace** • **Astrolab (Venturi Space)** • **JAOPS** • **Dymon**

The Lunar Ledger is an open, operator-centric database of lunar objects and activities. By centralising verified data, the Ledger supports safer planning and responsible growth while complementing existing state-level, UNCOPUOS databases, registries, and information-sharing mechanisms. In 2025, the Lunar Ledger evolved from concept to a real product. Open Lunar introduced the Ledger's first commercial partners and showcased early commitments to voluntary information sharing, including partner signings at IAC 2025 in Sydney. Founding partners validated that sharing mission plans early and consistently improves transparency and coordination, and with it the success of the missions.



Moon visualization tool
Lunar Ledger



“

At Astrolab, we know the value of acting with transparency and inspiring trust; we see the potential of the Lunar Ledger to positively influence the coming lunar industry by being the voluntary, collaborative platform by which we can keep everyone informed of our activities on the Moon, and stay informed of the activities of others.

Spokesperson
Astrolab-Venturi Space

Initiative

Lunar Ledger

lunarledger.space

The partner community comprises of commercial operators, agencies, researchers, policymakers, and civil society organisations. A carefully selected **advisory board** ensures credibility and practical usability, and that the Ledger remains open, neutral, and stewarded responsibly.

“ Continuing the trend of transparency Firefly demonstrated during Blue Ghost Mission 1, we are joining the Ledger to set an example of stewardship for safe and sustainable lunar operations.

Will Coogan
Lunar Lander Chief Engineer
Firefly Aerospace



The Ledger sits within the multilateral ecosystem. Since 2022, the initiative has engaged 350+ stakeholders globally, and in 2025, it featured in UN-facing dialogues, including being cited at the UN Conference on the Commercial Lunar Landscape and Policy Needs. Open Lunar Foundation also contributed formal statements and side events at UNCOPUOS and presented at the 2025 ITU Space Sustainability Forum, linking product design to international expectations.

Read more: [Moon missions need their own Wikipedia and beyond. Open Lunar is building it.](#) • [A Global Registry of Lunar Objects and Activities](#) • [Bright Moon - Creating a Global Registry of Lunar Activities](#) • [How a Lunar Registry Can Increase Mission Success](#)

Initiative

Lunar Policy Platform (LPP)

lunarpolicyplatform.org

Contributors: **Dr. Antonino Salmeri • Sam Jardine • Giuliana Rotola**

The Lunar Policy Platform (LPP) is a global network dedicated exclusively to lunar policy, working toward peace, safety, and sustainability on the Moon. In 2025, LPP successfully transitioned into an independent legal form and delivered practical policy tools that make information sharing implementable. It released Lunar Information Sharing (LIS) 101, as the first policy document outlining the why, what, where, how, and when of lunar information sharing, based on nine months of consultations with 45+ stakeholders. Open Lunar supported LIS 101 not only through funding but also by helping to carry it into multilateral practice. LPP presented Version 2 at the 68th UNCOPUOS, co-hosted with Open Lunar Foundation, which drew over 20 Member State delegations and enabled direct feedback and early buy-in.

“ As footprints multiply on the Moon, transparency, trust, and inclusion become urgent priorities; governance cannot lag behind exploration if we hope to ensure a peaceful and sustainable future on and around the lunar surface.

Dr. Antonino Salmeri
Director
Lunar Policy Platform



Open Lunar Foundation also funded and actively supported LPP’s Guide to Lunar Science & Ethics (GLES). This consultation-based policy resource maps scientific, cultural, and ethical interests on the Moon and outlines baseline practices for balancing them as activity accelerates. The Guide was developed through five months of global consultations with scientific institutions and civil society, and it was presented similarly at UNCOPUOS, ensuring the work was tested against real diplomatic constraints and stakeholder expectations.

Read more: [Lunar Information Sharing 101 • Guide to Lunar Science and Ethics](#)

Advocacy

Open Lunar strengthened global cooperation around safe lunar operations by representing the importance of practical, shared infrastructure at numerous forums. Below are the highlighted efforts around the year.

May 5-16

Committee on the Peaceful Uses of Outer Space (COPUOS)

Co-submitted the paper “Lunar policy for peace, safety, and sustainability” with the Lunar Policy Platform and held eleven bilateral meetings across four continents.

Outcome: Broader diplomatic awareness of Open Lunar’s governance priorities and alignment opportunities.

September 29 - October 3

International Astronautical Congress (IAC)

Publicly launched the Lunar Ledger with MoUs (ispace, Firefly, Astrolab) and premiered the Between the Craters tabletop.

Outcome: Seven requests for future runs and three government endorsements to bring the tabletop simulation to COPUOS.

October 7-8

International Telecommunication Union (ITU) Space Sustainability Forum

Delivered an invited talk on lunar information sharing to a large technical/policy audience and conducted a dozen bilateral meetings.

Outcome: Deepened ties with telecom/standards stakeholders critical to PNT and registry adoption.

November 17-18

UN Conference on the Commercial Lunar Landscape and Policy Needs

Multiple industry speakers referenced the Lunar Ledger, and a moderator directly sought ispace’s view, prompting a strong public endorsement.

Outcome: Third-party validation and momentum for 2026 adoption.

Board of Directors



Chris Hadfield
Board Chair



Carlos Alvarado Quesada
Director



Lindy Elkins-Tanton
Director



Tanja Masson-Zwaan
Director



Will Pomerantz
Director



Jessy Kate Schingler
Director, Secretary, Treasurer



Robbie Schingler
Director

Team



Rachel Williams
Executive Director



Mehak Sarang
Director of Industry Integration



Rae Smith-Cohn
Director of Operations



Christine Tiballi
Lunar Ledger Lead



Samuel Jardine
Lead Stakeholder Contractor



Chelsea Robinson
Contractor Advisor, Co-Founder



Jatan Mehta
Science Communications
Contractor

With Gratitude

Every achievement you read about would not have been possible without generous support. To our founding donors, DAF supporters, Institute patrons, Founders Pledge members, and advisors: thank you for supporting our vision towards a peaceful, human presence on the Moon.



“

It is inevitable that we become an interplanetary species. Let's work together to do this right.

Chris Hadfield
Board Chair

“

Settling other planets is an inherent part of humankind's drive to push borders. Enabling a fair and equitable international framework for all is my lifelong passion.

Tanja Masson-Zwaan
Director



Talks and Press

MIT SpaceTech	Why Governance Matters Now: Reflections on Building a Sustainable Lunar Economy
LSIC Spring Meeting	Lunar Ledger I Lightning Talk
LSIC Spring Meeting	Lunar Ledger I Breakout Session
Moon Village Association	International Virtual Workshop on Interoperability & Lunar Activities Database Panel contribution
LSIC Monthly Meeting	Lunar Data Access
IAC Sydney 2025	Lunar Ledger Launch (Payload, SpaceWatch.Global)
ITU Space Sustainability Forum	The Lunar Ledger: A Global Lunar Database of Objects and Activities
Tech Week by a16z	Space Solutions Panel
UN COPUOS Plenary	Open Lunar statement under Agenda Item 4



Donations and Grants

We are deeply grateful to donors whose generosity makes our work impactful. Their belief in Open Lunar Foundation's vision of a peaceful, cooperative future in space fuels everything we do.

On behalf of the Open Lunar board and staff, thank you for standing with us as we work toward a lunar presence that benefits all of humanity. Your support means the world to us - and beyond.

In 2025, Open Lunar received:

- 3 Core Donations
- 1 Project Grant from The Institute
- 1 Donor Advised Fund (DAF) donation
- Individual donations

Financial Reports

Form 990

- [2022](#)
- [2023](#)
- [2024](#)

Financial Statements

- [2022](#)
- [2023](#)
- [2024](#)

To access the previous year's reports, please reach out to contact@openlunar.org.



Join Us

Help build a peaceful, cooperative, and sustainable lunar presence, grounded in open standards, shared infrastructure, and real-world results.



Operators, researchers

run pilots, share mission metadata, co-develop specifications

Join our Slack community

Institutions, companies

co-produce policy, simulations, and standards

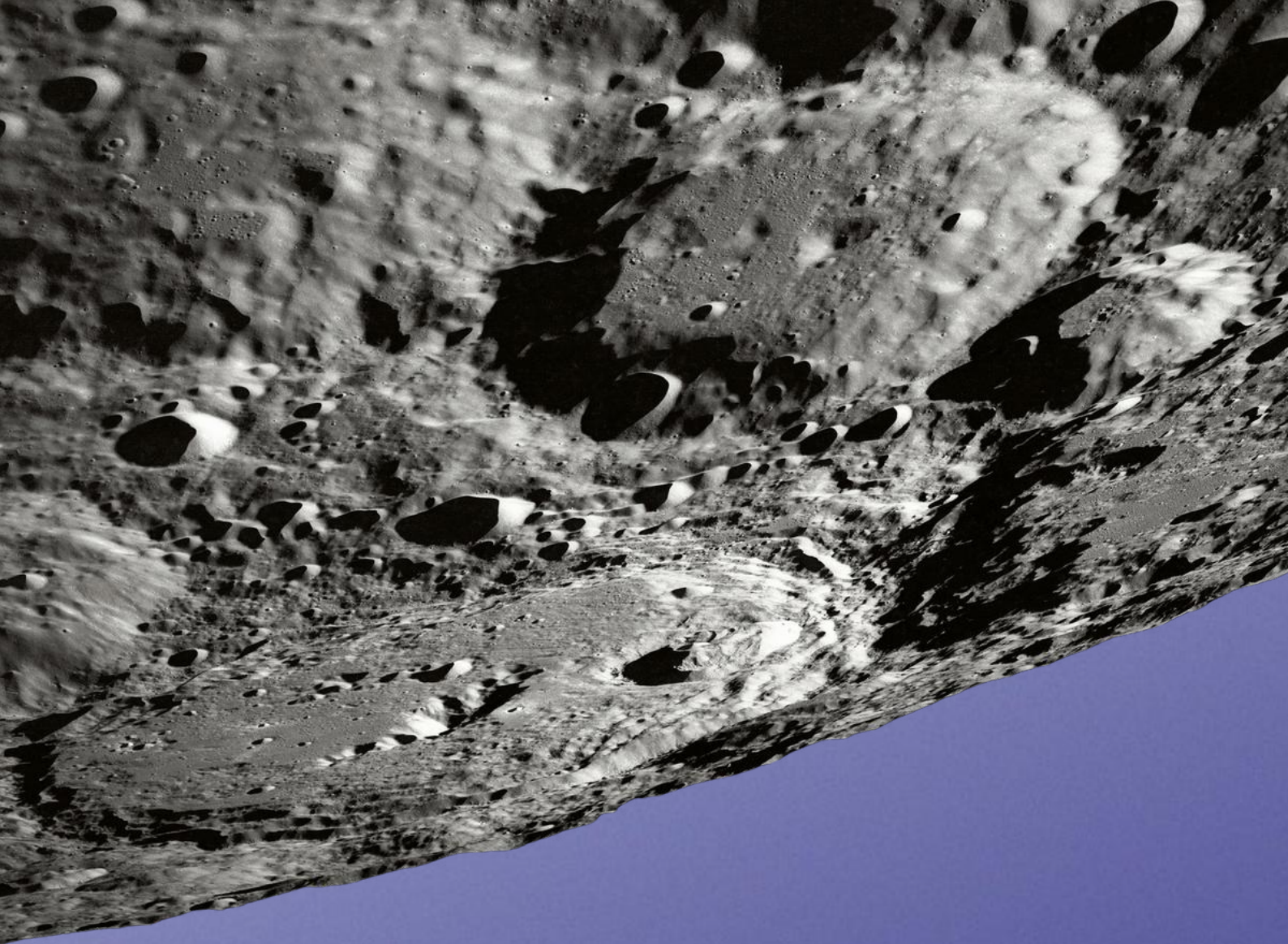
Partner with us

Philanthropy, individuals

fund open infrastructure and fellowships

Join our donor circle

Sign up for our [newsletter](#) and receive Open Lunar news in your inbox monthly!



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