

“Beyond Borders: Uniting Nations in Lunar Exploration”: A Recap of the Space Summer School 2023

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ABSTRACT

The Moon Village Association Italian associates and institutional partners successfully organized a remarkable Space Summer School in Italy on July 24th and 25th, 2023. This event coincided with the celebration of International Moon Day 2023. The school was conducted in a hybrid mode, blending in- person and virtual participation, making it accessible to a wide audience. With an overwhelming response, more than 70 individuals registered for the

event, showcasing the significant interest and enthusiasm among stakeholders from various backgrounds. The school provided an unparalleled networking experience, bringing together speakers and attendees from over ten (10) different countries across Europe, Asia, America, and Africa

As an NGO, the MVA's primary objective is to establish a permanent global forum for governments, industry, academia, and the public invested in lunar exploration. With over 600 participants, the MVA embodies a wide spectrum of technical, scientific, cultural, and interdisciplinary fields. The IMD is an annual event celebrated worldwide to raise awareness about the status and future prospects of sustainable Moon exploration and utilization.

The experience of organizing and leading the school event, along with the participants' follow up three months after the school, will be documented in this essay. This documentation seeks to illustrate the school's role in addressing global societal issues and understanding the significance of such activities in tackling challenges related to the Moon and beyond. Overall, the school proved to be a resounding success, leaving a lasting impact on the international lunar exploration community, and nurturing a collective vision for humanity's future in space.

Keywords: space education, non-profit organization, cross-disciplinary teaching

“Más allá de las fronteras: uniendo naciones en la exploración lunar”: resumen de la escuela de verano espacial 2023

RESUMEN

Los asociados y socios institucionales italianos de la Moon Village Association organizaron con éxito una extraordinaria Escuela de Verano Espacial en Italia los días 24 y 25 de julio de 2023. Este evento coincidió con la celebración del Día Internacional de la Luna 2023. La escuela se llevó a cabo de forma híbrida, combinando participación presencial y virtual, haciéndolo accesible a un amplio público. Con una respuesta abrumadora, más de 70 personas se registraron para el evento, lo que demuestra el gran interés y entusiasmo entre las partes interesadas de diversos orígenes. La

escuela brindó una experiencia de networking incomparable, reuniendo a oradores y asistentes de más de diez (10) países diferentes de Europa, Asia, América y África.

Como ONG, el objetivo principal del MVA es establecer un foro global permanente para los gobiernos, la industria, el mundo académico y el público que invierte en la exploración lunar. Con más de 600 participantes, el MVA abarca un amplio espectro de campos técnicos, científicos, culturales e interdisciplinarios. El IMD es un evento anual que se celebra en todo el mundo para crear conciencia sobre el estado y las perspectivas futuras de la exploración y utilización sostenible de la Luna.

En este ensayo se documentará la experiencia de organizar y liderar el evento escolar, junto con el seguimiento de los participantes tres meses después de la escuela. Esta documentación busca ilustrar el papel de la escuela al abordar problemas sociales globales y comprender la importancia de tales actividades para abordar los desafíos relacionados con la Luna y más allá. En general, la escuela demostró ser un éxito rotundo, dejando un impacto duradero en la comunidad internacional de exploración lunar y alimentando una visión colectiva para el futuro de la humanidad en el espacio.

Palabras clave: educación espacial, organización sin fines de lucro, enseñanza interdisciplinaria

“超越边界：在探月中联合各国”： 2023年太空暑期班回顾

摘要

月球村协会(MVA)意大利同事和机构合作伙伴于2023年7月24日至25日在意大利成功举办了一场精彩的太空暑期班。该活动恰逢2023年国际月球日庆祝活动。暑期班以混合模式进行，融合了线下和线上参与，使其可供广大受众获取。此次活动反应热烈，报名人数超过70人，展现了来自不同背景的利益攸关方的浓厚兴趣和热情。暑期班提供了无与伦比的社交体验，将来自欧洲、亚洲、美洲和非洲的十多个不同国家的演讲者和与会者聚集在一起。

作为一个非政府组织，MVA的主要目标是为“政府、工业界、学术界和用于月球探究的公众投资”建立一个永久性的

全球论坛。MVA拥有600多名参与者，涵盖了广泛的技术领域、科学领域、文化领域和跨学科领域。IMD是一项全球性的年度盛会，旨在提高人们对可持续月球探索和利用的现状和未来前景的认识。

本文将记录“组织和领导暑期班活动”的经验，以及参与者在暑期班结束后三个月的跟进情况。本文旨在阐明暑期班在应对全球社会问题方面的作用，并理解此类活动在应对与月球及其他相关挑战方面的重要性。总体而言，暑期班取得了巨大的成功，对国际月球探索界产生了持久的影响，并培养了关于“人类的太空未来”的集体愿景。

关键词：太空教育，非营利组织，跨学科教学

The Moon Village Association (MVA www.moonvillageassociation.org) Italian associates and institutional partners organized a Space Summer School (Italian MVA Space Summer School: Towards the Humans Return to the Moon – International Moon Day) in Italy to celebrate International Moon Day 2023 (IMD2023 International Moon Day – by the Moon Village Association).

The MVA is a non-governmental organization. Its goal is to create a permanent global informal forum for stakeholders like governments, industry, academia, and the public interested in the development of the Moon Village. The MVA fosters cooperation for existing or planned global moon exploration programs, public and private. It comprises more than 600 participants in MVA activities from more than 50 countries and 33 Institutional members around the globe, representing a diverse array of technical, scientific, cultural,

and interdisciplinary fields. The IMD is an annual event held for the general public and celebrated across the planet. It is an excellent opportunity to educate the public, and to promote and raise, at the international level, the awareness of the status and prospects for humanity, sustainable moon exploration and utilization of the moon, and the need to act together to regulate activities on and around the moon. With the approval of the United Nations, this event fosters increased global cooperation between stakeholders worldwide and promotes increased participation in this goal of the future generation. The school pursued the purposes of the IMD2023, focused on “Beginning the New Lunar Journey for Humanity,” and promoted the expertise and research interests of Italian associates and the Italian MVA institutional partner to create networking in this field of research between students and stakeholders.

The Moon Village Association and the Italy-Germany event

Prior to the commencement of the school, on the 20th of July, a thematic afternoon event was organized by MVA Italy and MVA Germany, featuring a series of four engaging talks presented by distinguished speakers from esteemed institutions in both countries. The primary objective of this collaborative event was to facilitate and strengthen international cooperation in the field of space exploration. With the world's attention turning to the IMD2023 festivities, MVA Italy and MVA Germany recognized the significance of fostering connections and sharing knowledge between nations and their respective space programs. The thematic afternoon served as a remarkable event inside the IMD2023 celebrations, setting the stage for fruitful discussions and partnerships extending beyond borders. Four talks were delivered by experts from across the Italian and German research institutions, academia, and industry. These experts touched upon various aspects of lunar exploration, innovation, and the future of space endeavors. These presentations exemplified the rich diversity of perspectives and expertise that international collaboration can bring to the forefront of space exploration, reaching its zenith during the Italian MVA school—a cornerstone of the Moon Village Association's commitment to nurturing a global community of space enthusiasts and professionals.

The SESA2023 Conference Panel

We had the privilege of organizing a panel at the Space Education & Strategic Applications Conference (SESA2023), hosted by the Policy Studies Organization. This panel served as a vital platform for addressing critical questions that profoundly impact the future of the MVA school and its subsequent editions. We focused our discussions on several key aspects, each of which holds significant importance for the continued success and evolution of the program.

Firstly, we delved into what participants most appreciate about the MVA school's unique methods and organization. This inquiry allowed us to gain valuable insights into the aspects of the program that resonate most with the students and professionals involved. Their feedback provided a foundation for understanding the strengths that should be preserved and further developed in the future. Secondly, we explored the matter of the high degree of interdisciplinarity inherent to the MVA school experience. Whether this interdisciplinary approach should continue to be a cornerstone of the program in future iterations was a pertinent question. The discussions highlighted the undeniable value of interdisciplinarity in preparing individuals for careers in space-related fields, thus reinforcing the importance of its persistence. Lastly, participants were invited to suggest potential improvements for the next edition of the MVA school. Their input and ideas were invaluable in guiding the program's growth and refinement. It

became evident that ongoing enhancements would be crucial to ensure the school remains at the forefront of space education.

One of the most compelling outcomes of these discussions was the realization that the demand for technical and management personnel with multidisciplinary backgrounds is poised to grow even further in the future. This observation holds particular significance for investors and space agencies, underscoring the importance of investing in education programs like the MVA school. By nurturing individuals with a well-rounded, multidisciplinary approach, we are better equipped to address the multifaceted challenges of space exploration and development. In conclusion, the insights gleaned from our panel discussions at SESA2023 reaffirmed the vital role of the MVA school in shaping the future of space education and ensuring a capable workforce for the space industry.

An Sample Lecture: “Lagrange Points: Kickstarting a Cis-Lunar Economy for the 21st Century.”

As an example, during the panel, a lecture was presented that underscores the paramount importance of Cis-Lunar Lagrange Points within the Space Industry. The lecture puts forth a novel perspective advocating the comprehensive utilization of these points as a foundational infrastructure for fostering sustainable space exploration and resource exploitation. A key emphasis will be placed on rec-

ognizing Lagrange Points as integral elements of space programs, facilitating resource accessibility for lunar and interplanetary missions. The imperative role of efficient resource management through Lagrange Points is underscored, positioning it as crucial for the sustainable growth of the New Space Economy and prospective space endeavors.

In the context of a space-focused summer school, this lecture held particular significance as it serves to stimulate the visionary aspects of exploration and investigation. By delving into the strategic utilization of Cis-Lunar Lagrange Points, attendees can gain insights into a paradigm-shifting approach that transcends conventional space endeavors. Understanding the integral role these points play in space programs fosters a deeper appreciation for their potential to serve as a catalyst for sustainable space exploration and resource utilization. This visionary perspective encourages participants to think beyond the immediate challenges and explore innovative solutions, nurturing a mindset that is essential for shaping the future of space exploration.

Conclusions

In conclusion, the MVA school's emphasis on interdisciplinarity extends beyond the subjects studied; it is deeply ingrained in the program's very fabric through its speakers' diverse affiliations. By drawing on the collective expertise of space agencies, enterprises, academic and research institutions, and students and young professional asso-

ciations, the program equips its participants with a holistic understanding of the multifaceted world of space exploration. This multifaceted approach prepares individuals for a broad range of career opportunities and ensures they are well-versed in the collaborative nature of the space industry, where diverse perspectives and expertise are essential

for success. The MVA school truly exemplifies the spirit of interdisciplinary education in the realm of space exploration. The school’s unique attributes, commitment to interdisciplinarity, and willingness to adapt based on feedback will continue to propel it forward as a cornerstone of space education and workforce development.

References

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