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ASTRAX LUNAR CITY PROJECT 2025

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Abstract

Since 2007, ASTRAX has been leading the development of a lunar city, known as ASTRAX LUNAR CITY. This initiative consists of the ASTRAX LUNAR CITY Business Community, a network of businesses engaged in lunar-based commerce, and the ASTRAX LUNAR CITY Residence Club, which enjoys the products and services generated within this ecosystem. To date, approximately 400 businesses have joined this initiative. To promote economic activities within the lunar city, ASTRAX has implemented various initiatives, including lunar address management, regular citizen meetings, 3D mapping of the virtual lunar city, supply-demand matching platforms, and dedicated applications. In particular, monthly citizen meetings serve as a hub for business proposals and technical exchanges among participants. Through these discussions, new space-related business ideas have emerged, including the concept of 'Lunar Beer,' specifically designed to be consumed on the Moon, which has led to concrete business developments. This study examines the development of ASTRAX LUNAR CITY, focusing on real-world market formation where private companies are actively participating. Additionally, it explores the technologies supporting lunar city business activities (AI, metaverse, NFT, etc.) and their potential applications, analyzing the interaction between future lunar economy and real-world terrestrial economies. Furthermore, using cases such as the commercialization of 'Lunar Beer,' this study investigates how private companies can engage in and benefit from the expanding space economy.

Keywords: ASTRAX LUNAR CITY, Business Community, Residence Club, Space Economy

1. Introduction

Since 2007, ASTRAX has been promoting activities that envision the construction of “ASTRAX LUNAR CITY” on the Moon by jointly purchasing lunar land sold by the U.S.-based Lunar Embassy together with various enterprises.

A distinctive feature of this initiative is that it advances lunar development not as a national project, but through the efforts of commercial companies and ordinary citizens. Rather than being a merely conceptual urban vision, it has functioned as a social experiment aimed at a future space society.

Unlike national-level space programs, ASTRAX LUNAR CITY is conceived as a project in which anyone can participate, allowing participants to regard lunar development as their own undertaking.

Since 2019, the activities and vision of ASTRAX Lunar City have expanded internationally, with continuous presentations at the International Astronautical Congress (IAC), participation in the Moon Village Association (MVA), and involvement in the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS). Through activities that anticipate life on the Moon, various initiatives have been carried out in the

fields of economy, education, and cultural exchange. Although small in scale, these efforts are positioned as demonstrative practices that concretize the vision of a future space society.

The purpose of this paper is to review and analyze the growth process of ASTRAX LUNAR CITY to date, and to clarify the significance and challenges of its activities. Special focus is placed on activities conducted after previously published studies up to 2023, particularly the monthly citizen meetings held in 2024 and 2025, and the expansion of the community to approximately 400 enterprises. Furthermore, this paper examines the services designed with the lunar economy in mind, assessing how they have influenced terrestrial economic activities through the practices of 2024–2025. Based on these outcomes, it aims to indicate future directions for demonstration efforts in terrestrial, lunar, and broader space economies.

2. Overview of ASTRAX LUNAR CITY

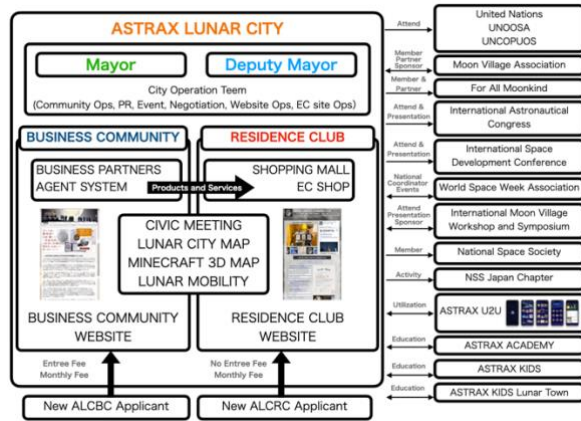


Figure 1. Conceptual diagram of ASTRAX LUNAR CITY

ASTRAX LUNAR CITY is composed of two main communities.

The first is the Business Community, in which companies, entrepreneurs, and organizations jointly purchase lunar land together with ASTRAX. It serves as a forum for sharing and examining business ideas utilizing lunar land. As of August 2025, 393 enterprises are participating, aiming not only at realizing future lunar service businesses but also contributing to the revitalization of terrestrial business activities.

The second is the Residence Club, launched in 2020 and targeted at the estimated six million lunar landowners worldwide who purchased land from the Lunar Embassy. This club does not require any business activities as a precondition; rather, it offers a free and open system for anyone to join as “residents” who simply wish to enjoy lunar life.

The foundation of ASTRAX LUNAR CITY lies in the management of lunar land addresses owned by its members, which enables tracking and organizing participants. Based on this address information and the background of landowners, systems for matching supply and demand as well as online activities have been developed. This matching system links the Business Community with the Residence Club, making it possible to provide and receive products and services. It thus forms the basis for building service concepts and conducting economic activities envisioned for lunar life. On this foundation, concrete initiatives have been developed. Online, projects have included the creation of “Kids Lunar City” using Minecraft, the development of dedicated applications, and the operation of “Lunar City Channel” (currently suspended) as a hub for information dissemination. Additional efforts have involved designing a lunar city within metaverse spaces and creating virtual maps, enabling participants to visually experience lunar society. Moreover, beyond virtual environments, plans are underway to construct simulation facilities in Japan, representing a new stage of

development as “demonstration sites” that bridge future lunar cities with the real world.

Since 2017, the ASTRAX LUNAR CITY Citizen Meetings have been continuously held, totaling 37 sessions by July 2025. These meetings serve as open forums for interaction and discussion, playing a role in connecting activities envisioned for lunar life with actual economic practices. The details of these activities are presented in the following chapter.

3. Recent Activities and Achievements

Details of activities up to 2023 are discussed in other papers (4)(12)(23)(30)(65). Here, the focus is placed on activities conducted since 2023.

3.1 Continuation of Citizen Meetings

The ASTRAX LUNAR CITY Citizen Meetings began in 2017 and had been held a total of 37 times by July 2025. From 2024 to 2025, regular monthly meetings continued, adopting a hybrid format that combined online and in-person participation. This system enabled broad interaction among participants from both Japan and abroad, with the future prospect of direct participation from the lunar surface.

Within these meetings, members presented business ideas and progress reports, engaged in technical exchanges, and discussed the design of rules for lunar society. Notably, in the first half of 2024, the main agenda centered on the development of lunar beer and its commercialization on Earth, which led to the actual product launch later that year.

In the first half of 2025, discussions focused on the introduction of an NFT-based land certification system and on plans for residential simulation experiments in lunar base mock-up facilities. While the NFT system remains at the conceptual stage, future developments are anticipated.

3.2 Production and Sales of Lunar (Space) Beer

One of the most representative initiatives that emerged from the ASTRAX LUNAR CITY Citizen Meetings is the concept of “Lunar Beer.” This project is both an attempt to explore the potential for drinking culture in a lunar environment and an effort to establish connections with terrestrial craft beer businesses.

In 2024, following the formulation of the brand concept and the design of labels, the product was actually released to the market. This became the first practical commercial product born from the activities of ASTRAX LUNAR CITY. It served as a model case in which a product developed with lunar living in mind spread into the real terrestrial market.

Furthermore, in the first half of 2025, sales expansion and promotional activities gained momentum, and Lunar

Beer attracted significant attention as a symbolic example of linking space business with everyday consumer culture. This case concretely demonstrates the process by which services envisioned for lunar economic activities can spill over into terrestrial economies, thereby holding significance as an entry point to the broader space economy.



Figure 2. Label design of “Lunar Beer”

3.3 Creation of LINE Character Stamps

In order to make ASTRAX LUNAR CITY more familiar to the general public, in 2022 a set of SNS (LINE) stamps was created featuring its image character. Furthermore, in 2025, a new set of character stamps themed on “Lunar Beer” was released.

These initiatives extend the activities of ASTRAX LUNAR CITY beyond business and research into cultural and community-oriented dimensions. By spreading through SNS and messaging applications, they helped promote the lunar city development concept to a wide range of audiences, including younger generations.



Figure 3. SNS character stamps



Figure 4. SNS Lunar Beer character stamps

3.4 Progress of the ASTRAX LUNAR CITY Simulation Facility Plan

In 2024, a prototype of the ASTRAX LUNAR CITY simulation facility was completed in Japan, and in early 2025, technical verifications such as dome redeployment and repair experiments for damaged sections were conducted on a trial basis. These provided valuable opportunities for testing that are directly connected to the practical challenges of maintaining lunar structures.

In the summer of 2025, a short-term residential simulation was also conducted, entering a stage of accumulating knowledge essential for actual lunar habitation, such as verifying daily living rhythms and

methods of resource management. Details of this project are discussed in a separate paper, “Construction of the ASTRAX LUNAR CITY Simulation Facility in Japan 2025.”(99).



Figure 5. Assembly of Lunar Base Simulation Facility



Figure 6. Exterior View of Individual Room Module in Lunar Base Simulation Facility



Figure 7. Interior View of Individual Room Module in Lunar Base Simulation Facility

3.5 Expansion of the Community

Against the backdrop of ongoing Citizens’ Meetings, the progress of concrete business initiatives, and the expansion of cultural activities, participation in the ASTRAX LUNAR CITY Business Community has continued to grow, reaching 393 companies as of August 2025. This demonstrates that the ASTRAX LUNAR CITY development initiative has gone beyond a mere conceptual vision, becoming a foundation that attracts a wide range of companies and organizations through tangible economic and cultural activities.

4. Discussion

4.1 The Role of ASTRAX LUNAR CITY

ASTRAX LUNAR CITY functions not only as a conceptual vision of living on the Moon but also as a platform for social experimentation. Through the regular exchanges in the Citizens’ Meetings, the sharing of agendas, and the testing of business ideas, it serves as an experimental arena for simulating future lunar habitation, while simultaneously linking directly to business and cultural activities on Earth.

In particular, tangible outcomes such as the launch of “Lunar Beer” and the creation of LINE character stamps are positioned as examples of how lunar city activities can directly ripple into the real-world terrestrial economy.

4.2 A Private-Sector-Led Space Economy Model

Unlike development driven by national governments or large-scale space agencies, ASTRAX LUNAR CITY presents a “grassroots” model of space economy led by private enterprises and ordinary citizens. This suggests that entry into space business does not necessarily require vast capital or advanced technology; rather, it can be achieved through ideas and community participation. In the future, the involvement of such small-scale and diverse players is expected to become a crucial element

in sustaining the space economy (see references on the Solar System Economic Sphere (25)(52)).

4.3 Maturity and Reliability of the Community

By 2025, the Citizens' Meetings had been held 37 times, and the number of participating companies had expanded to 393, demonstrating long-term continuity and credibility. The fact that this initiative has been maintained as a continuous community, rather than as a series of one-off events, represents a significant asset in building cooperative frameworks for future real-world applications.

This continuity can be regarded as forming the foundation of a "reliable private network" necessary for realizing lunar society.

5. Future Prospects

5.1 Positioning of ASTRAX LUNAR CITY as of 2025

Since its inception in 2007, ASTRAX LUNAR CITY has grown over approximately 18 years into a model that combines social experimentation for the construction of a future lunar city with ripple effects on the real-world economy. The regular convening of Citizens' Meetings, the expansion of the Business Community to 393 companies, and tangible achievements such as the launch of Lunar Beer and the completion of the lunar base simulation facility have demonstrated the feasibility of lunar city development led by the private sector.

5.2 Future Possibilities

Based on the activities up to 2025, the future possibilities can be summarized as follows:

(1) Advancement of Demonstration Experiments

Through lodging simulations at the lunar base simulation facility, it is expected that essential elements of lunar habitation—such as daily living rhythms and resource management—will be concretely examined.

(2) Expansion of Commercialization

Following "Lunar Beer," food, daily commodities, and experiential services related to space society may be commercialized, with the potential to ripple into terrestrial markets.

(3) Implementation of Technologies

The introduction of new technologies, such as NFT-based land certification and AI-driven demand

forecasting, may enhance the reliability and scalability of the future lunar city economy.

(4) International Development

Through continued dissemination at international platforms such as the IAC and MVA, collaboration with private players from other countries is expected to advance, with the potential to develop into an "International Private Lunar City Network."

(5) Connection with Space Education

By strengthening collaboration with space education—such as Japan's online Graduate School of Educational Technology—it will be possible to contribute to nurturing the next generation of talent and developing human resources capable of playing active roles in space.

5.3 Future Challenges

For ASTRAX LUNAR CITY to further develop, it is necessary to address the following challenges in a systematic manner:

(1) Accumulation of Empirical Data

Through demonstration experiments such as lodging simulations at the lunar base simulation facility, it is essential to accumulate residential data and resource management results, thereby building a solid scientific foundation.

(2) Continuous Commercialization

Building upon "Lunar Beer," the development and market deployment of subsequent products and services must be advanced in order to sustainably expand the economic sphere.

(3) Expansion of International Collaboration

Presentations and exchanges at international platforms such as the IAC and MVA symposiums should be strengthened to build networks with private communities in other countries.

5.4 Roadmap Toward the Realization of a Future Lunar City

ASTRAX LUNAR CITY is not limited to a mere concept or simulation, but rather outlines an experimental roadmap toward the realization of a future lunar society.

In the short term, demonstration experiments utilizing the simulation facility will be conducted repeatedly to verify models of daily life, technology, and social systems.

In the medium term, products and services derived from the activities of ASTRAX LUNAR CITY will be expanded, establishing a circulation model that links the terrestrial economy with the space economy.

In the long term, through international collaboration, the initiative aims to achieve the realization of a privately led lunar city, transitioning “from concept to reality.”

6. Conclusion

Since its inception in 2007, ASTRAX LUNAR CITY has steadily developed as a fully private-sector-led social experiment in lunar development. In particular, recent tangible outcomes—such as the continued convening of the ASTRAX LUNAR CITY Citizens’ Meetings, the establishment of the lunar base simulation facility, and the commercialization of “Lunar Beer”—have gone beyond the bounds of mere concepts or urban planning, establishing concrete points of connection with the terrestrial economy.

These initiatives present a new model of cultivating a space economy driven not by national projects but by private initiative. Furthermore, the continuity and expansion of the community have built a reliable foundation indispensable for the realization of future lunar cities.

Looking ahead, ASTRAX will continue to steadily build upon concrete activities such as further sustaining the Citizens’ Meetings, expanding participation to over 400 companies, programmatic utilization of the lunar base simulation facility, and the expansion of distribution channels for “Lunar Beer.”

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IAC-25-D4,2,12

ASTRAX LUNAR CITY PROJECT 2025

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Abstract

ASTRAX は 2007 年より、ASTRAX 月面シティと呼ばれる月面都市開発プロジェクトを推進している。このプロジェクトは、ASTRAX 月面シティビジネスコミュニティ（ビジネス活動を行う事業者のネットワーク）と、ASTRAX 月面シティレジデンスクラブ（そこで生み出された商品やサービスを楽しむコミュニティ）から構成され、現在までに約 400 社の事業者が参加している。これまで、月面シティにおける経済活動の促進を目的に、月の住所管理、定期的な市民会議の開催、仮想月面都市の 3D マッピング、供給と需要のマッチングシステムの開発、専用アプリケーションの提供など、多様なプラットフォームを構築してきた。特に、市民会議は毎月開催されており、参加者による事業提案や技術交流が活発に行われている。これまでの議論の中から、宇宙環境を想定した商品開発のアイデアが生まれ、月面環境でも飲める「月面ビール」の構想が誕生するなど、具体的なビジネス展開が進んでいる。本研究では、ASTRAX 月面シティの成長過程を整理し、すでに民間企業が参加し実際の市場形成が始まっている事例に焦点を当てる。また、月面シティの事業活動を支える技術（AI、メタバース、NFT など）とその適用可能性を検討し、未来の月面経済と現実の地上経済の相互作用を分析する。さらに、実際に事業化された「月面ビール」のように、宇宙関連ビジネスが地上経済にも影響を与える事例を通じ、民間企業がどのように宇宙経済に参入できるかを考察する。

Keywords: ASTRAX LUNAR CITY, Business Community, Residence Club, Space Economy

1. はじめに

ASTRAX は 2007 年より、米国ルナエンバシー社が販売する月の土地を各事業者と連名で購入し、月面に「ASTRAX 月面シティ（ASTRAX LUNAR CITY）」という街を構築することを想定した活動を推進してきた。

この活動は、国家事業としてではなく、民間企業や一般市民の力によって月面開拓を進めるという点に大きな特徴がある。単なる仮想的な都市構想にとどまらず、将来的な宇宙社会を見据えた社会実験の場として機能してきた。

ASTRAX 月面シティは、国家レベルの宇宙計画とは異なり、誰もが参加可能な形で月面開拓を構想。それによって参加者は自分ごととして月面開拓を考えることができる場となっている。その活動内容と構想について、2019 年以降は国際宇宙会議（IAC）での継続発表、国際月面ビレッジ学会（MVA）、国連宇宙空間平和利用委員会（COPUOS）への参画など、国際的な活動へと展

開している。月面での暮らしを見据えた活動を通じて、経済活動、教育、文化的交流など多様な試みが行われてきた。これらは小規模ながらも、将来の宇宙社会像を具体化するための実証的な取り組みとして位置づけられる。

本論文の目的は、ASTRAX 月面シティのこれまでの成長過程を整理・分析し、その活動の意義と課題を明らかにすることである。

2023 年までに発表された既存論文以降に行われた活動、とくに 2024 年および 2025 年に実施された毎月の市民会議や、約 400 社規模へ拡大したコミュニティの取り組みに焦点を当てる。さらに、本論文では月面経済を想定して構築されたサービスに注目する。

それらが地上の経済活動へどのように波及するのかを、2024～2025 年の活動を通じて検証する。そして、その成果をもとに、今後の地上・月面・宇宙経済における実証へ向けた方向性を示すことを目指す。

2. ASTRAX 月面シティの概要

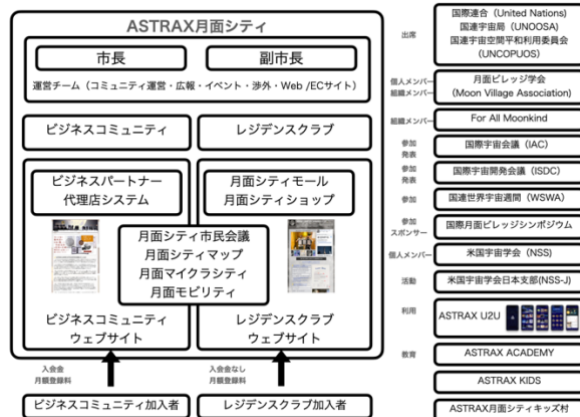


図1. ASTRAX 月面シティ概念図

ASTRAX 月面シティは、二つのコミュニティによって構成されている。

1 つは「ビジネスコミュニティ」であり、ASTRAX と共同で月の土地を購入し、企業や事業者、団体が参加し、月の土地を活用したビジネスアイデアを共有・検討する場である。2025 年 8 月時点で 393 社が参加しており、将来的な月面サービス事業の実現を目指すと同時に、地上での事業の活性化にも寄与している。

もう 1 つは「レジデンスクラブ」であり、2020 年に、世界中に 600 万人いると言われるルナエンバシー社の月の土地所有者を対象に発足した。月面での事業を前提とせず、「月面ライフを楽しみたい住民」として誰でも無料で参加できる仕組みとなっている。

ASTRAX 月面シティの基盤は、メンバーが所有する月の土地の住所を管理し、それをもとに参加者を把握する仕組みにある。この住所情報と所有者のバックグラウンドを前提として、需要と供給のマッチングやオンライン活動が展開されている。需要と供給のマッチングシステムは、ビジネスコミュニティとレジデンスクラブを結びつけ、商品やサービスの提供と受益を可能にし、月面生活を想定したサービス構築・経済活動を実現する基盤となっている。

これらの基盤をもとに、具体的な取り組みが展開されてきた。オンライン上では、Minecraft を活用した「キッズ月面シティ」の構築や、専用アプリケーション、情報発信の場としての「月

面シティチャンネル」（現在は停止中）の運用が試みられた。また、メタバース空間での月面都市構想やマップ制作といった取り組みも行われ、参加者が月面社会を視覚的に体験できる環境の整備が進められてきた。さらに、仮想空間にとどまらず、日本国内でのシミュレーション施設構築計画が進められており、未来の月面都市と現実世界を結びつける「実証実験の場」として新たな展開が始まっている。

2017 年から継続的に開催されてきた「ASTRAX 月面シティ市民会議」は、2025 年 7 月までに通算 37 回を数えた。市民会議は、誰でも参加可能な交流と議論の場として、月面生活を想定した活動を実際の経済活動へとつなげる役割を担っている。

その活動内容については、次章で詳しく紹介する。

3. 最新の活動と成果

2023 年までの活動の詳細は、別論文参照（●●、●●、●●、●●、）ここでは、2023 年以降の活動をまとめる。

3.1 市民会議の継続開催

ASTRAX 月面シティ市民会議は 2017 年に開始され、2025 年 7 月までに通算 37 回を数えた。2024 年から 2025 年にかけても毎月定例開催を継続し、オンラインと対面を組み合わせたハイブリッド形式を取り入れることで、国内外からの幅広い参加者が交流できる仕組みが確立されている。これは、将来月面からの参加も想定されている。

市民会議では、メンバーによる事業アイデアやその進捗の発表、参加者同士の技術交流、月面社会のルール設計など、多様な議論が行われた。特に 2024 年前半の会議では「月面ビールの開発と地上での商品化」が主要な議題となり、同年中に実際の商品化へとつながった。

2025 年前半の会議では、「NFT による土地証明システム」や「月面基地模擬施設での宿泊実験計画」が取り上げられた。NFT システムの導入については現段階では構想段階にとどまっているが、今後の展開が期待される。

3.2 月面（宇宙）ビールの制作と販売

市民会議から生まれた代表的な事例が「月面ビール」の構想である。これは、月面環境下での飲酒文化の可能性を探る試みであると同時に、地上のクラフトビール事業との連動を図る取り組みでもある。

2024 年には、ブランドコンセプトの策定やラベルデザインの検討を経て、実際に商品が発売された。これは ASTRAX 月面シティの活動から誕生した初の実用的な商材であり、月面シティ生活を想定して開発された商品が地上での現実市場へ波及するモデルケースとなった。

さらに 2025 年前半には、販売展開や広報活動が本格化し、「月面ビール」は「宇宙ビジネスを日常の消費文化と結びつける象徴的な事例」として注目を集めた。この事例は、月面での経済活動を想定して作られたサービスが地球上の経済活動に波及するプロセスを具体的に示すものであり、宇宙経済の入り口としての意義を持っている。



図 2. 「月面ビール」のラベル

3.3 LINE キャラクタースタンプの制作

ASTRAX 月面シティをより一般層に親しみやすいものとするため、2022 年には ASTRAX 月面シティのイメージキャラクターを用いた SNS (LINE) スタンプが制作された。さらに 2025 年には、「月面ビール」をテーマとした新たなキャラクタースタンプが販売開始された。これらの取り

組みは、ビジネスや研究活動にとどまらず、文化的・コミュニティ的側面からも月面シティの活動を広げるものである。SNS やメッセージアプリを通じて活動を拡散し、若年層を含む多様な層に ASTRAX 月面シティ開拓構想をアピールする効果を持った。



図 3. SNS のキャラクタースタンプ



図 3. SNS の月面ビールキャラクタースタンプ

3.4 月面シティ模擬施設計画の進展

2024 年には、日本国内において月面シティ模擬施設のプロトタイプが完成し、2025 年初めには、ドームの再展開や損傷部分の修復実験といった技術的検証が試験的に実施された。これらは月面建築物の維持管理という実践的課題に直結する貴重な検証機会となった。

同じく 2025 年夏には短期滞在型の宿泊シミュレーションを実施し、生活リズムの検証や資源管理の方法論など、実際の月面居住に向けた知見を積み上げる段階に入っている。本件については、別論文「日本における ASTRAX 月面シティシミュレーション施設の構築 2025」にて詳細に論じる(99)。



図 4. 月面基地模擬施設組み立て



図 5. 月面基地模擬施設個室モジュール外観



図 6. 月面基地模擬施設個室モジュール内装

3.5 コミュニティ規模の拡大

継続的な市民会議の開催や、具体的な事業化の進展、文化的活動の広がり背景に、ASTRAX 月面シティビジネスコミュニティの参加者は増加を続け、2025 年 8 月時点で 393 社に達した。これは、月面シティ開拓構想が単なる理念にとどまらず、実際の経済活動や文化活動を通じて多くの企業や事業者を惹きつける基盤となっていることを示している。

4. 考察

4.1 ASTRAX 月面シティが果たす役割

ASTRAX 月面シティは、月面で生活することを想定した都市構想にとどまらず、社会実験の場として機能している。市民会議を通じた定期的な交流、議題の共有、事業アイデアの検証は、将来の月面居住を模擬する実験場であり、同時に地上のビジネスや文化活動に直結している。

特に「月面ビール」の発売や LINE スタンプといった具体的成果は、月面都市活動が地上の現実経済に直接波及する事例として位置づけられる。

4.2 民間主導の宇宙経済モデル

国家や大規模宇宙機関による開発とは異なり、ASTRAX 月面シティは民間企業や一般市民による「草の根型」宇宙経済のモデルを示している。これは、必ずしも巨大な資本や技術を持たなくても、アイデアやコミュニティを通じて宇宙ビジネスに参入できる可能性を提示するものだ。今後、こうした小規模かつ多様なプレイヤーの参画が宇宙経済を支える重要な要素となるだろう。論文参照（太陽系経済圏●●、月面経済圏●●）

4.3 コミュニティの成熟と信頼性

2025 年までに 37 回開催された市民会議と 393 社に拡大した参加企業は、長期的な継続性と信頼性を示している。単発的なイベントではなく、継続的なコミュニティとして運営されている点は、将来の実社会での協力体制を築くうえで大きな資産となる。

この継続性が、月面社会を実現するための「信頼できる民間ネットワーク」の基盤を形成しているといえる。

5. 今後の展望

5.1 2025 年時点での ASTRAX 月面シティの位置づけ

ASTRAX 月面シティは、2007 年の構想開始から約 18 年を経て、未来の月面都市構築に向けたの社会実験と現実経済への波及を両立するモデルへと成長した。市民会議の定期開催、393 社に拡大したビジネスコミュニティ、そして月面ビールの発売や月面基地模擬施設の完成といった具体的な成果は、民間主導による月面都市開発の可能性を実証している。

5.2 今後の可能性

2025 年までの活動を踏まえると、今後の可能性は以下のように整理できる。

(1) 実証実験の深化

月面基地模擬施設での宿泊シミュレーションを通じ、生活リズムや資源管理といった月面居住

に不可欠な要素を具体的に検証することが期待される。

(2) 商品化の拡大

「月面ビール」に続き、宇宙社会に関連した食品・生活用品・体験サービスなどが商品化され、地上の市場に波及する可能性がある。

(3) 技術の実装

NFT による土地証明や AI による需要予測といった新技術の導入が進み、未来の月面都市経済の信頼性と拡張性が高まる可能性がある。

(4) 国際的な展開

IAC や MVA といった国際的な場での継続的な発信を通じ、他国の民間プレイヤーとの連携が進み、「国際民間月面都市ネットワーク」へ発展する可能性がある。

(5) 宇宙教育との接続

日本のオンライン大学院「教育テック大学院」などの学校教育を活用した宇宙教育との連携を強化し、次世代人材の育成および宇宙で活躍できる人材の育成に寄与する可能性がある。

5.3 今後の課題

ASTRAX 月面シティがさらに発展していくためには、以下の課題に計画的に取り組む必要がある。

(1) 実データの蓄積

月面基地模擬施設での宿泊シミュレーションなどの実証実験を通じて、居住データや資源管理の実験結果を蓄積し、科学的根拠を積み上げる。

(2) 継続的な事業化

「月面ビール」に続く商品・サービスの開発と市場展開を進め、持続的に経済圏を拡大していく。

(3) 国際連携の拡大

IAC や MVA シンポジウムといった国際的な場での発表・交流を強化し、他国の民間コミュニティとネットワークを築く。

5.4 将来的な月面都市実現へのロードマップ

ASTRAX 月面シティは、単なる構想やシミュレーションにとどまらず、未来の月面社会に向けた実験的ロードマップを描いている。

直近では、模擬施設を活用した実証実験を重ね、生活・技術・社会制度のモデルを検証する。

中期的には、ASTRAX 月面シティの活動から派生した商品・サービスを拡充し、地上の経済と宇宙経済の循環モデルを確立する。

長期的には、国際連携を通じて「計画から現実へ」移行する民間主導の月面都市実現を目指す。

6. 結論

ASTRAX 月面シティは、2007 年の構想開始以来、完全民間主導による月面開拓の社会実験として着実に発展してきた。特に最近の ASTRAX 月面シティ市民会議の継続開催や月面基地模擬施設の整備、「月面ビール」の商品化など、具体的な成果は単なる理念や都市計画の枠を超え、地上経済との接点を確立している。

これらの取り組みは、国家事業に依存せず、民間の主體的な力で宇宙経済を育てていく新しいモデルを提示している。そして、コミュニティの継続性と拡大は、将来の月面都市実現に不可欠な信頼性のある基盤を形成してきた。

ASTRAX は、市民会議のさらなる継続開催や参加事業者 400 社超え、月面基地模擬施設を利用した企画のプログラム化、「月面ビール」の販路拡大といった具体的な活動を、一つひとつ着実に積み重ねていく。

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【95】A VERSATILE SPACE APPLICATION TOOL TO SUPPORT LIFE IN SPACE: INTRODUCTION TO ASTRAX U2U 宇宙での生活をサポートするための万能宇宙アプリケーションツール：ASTRAX U2U (Universal User Interface)の紹介

【96】A SPACE VALUE STANDARD TO SUPPORT LIFE IN SPACE: INTRODUCTION TO ASTRAX VALUE 宇宙での生活をサポートするための宇宙価値基準: ASTRAX VALUE の紹介

【97】DEVELOPMENT OF ASTRAX SPACE MISSION SUPPORT CONTROL CENTER 2025ASTRAX 民間宇宙船運用支援管制センターの開発 2025

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