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New Lunar Economy: A Prospectus on Lunar Lander Private Startups

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Abstract
With the supply niche that government market demand has provided, private commercial rocket development has reduced the typical space launch cost by a factor of 20. Traditional space population pursued goals set by governments, whereas New Space populations aim for a common, nongovernmental market of space exploration and exploitation. The underlying mechanisms through which lunar landers startups prospect and exploit opportunities remain largely under-theorized and little understood. This paper aims to characterize the lunar lander market and envision its role to deliver materials and equipment for lunar surface ISRU operations.
Keywords: Astropreneurship, Lunar lander companies, Space startup funding.

Background

The Lunar Resources Company (now The Moon Society) designed a commercial Lunar Settlement plan in the 1990s called The Artemis Project. Starting in 1993, the first description and architecture were published in 1995 in Analog Magazine [1]. In 2007, the $20M Google Lunar X Prize was announced with the goal to land a private robotic spacecraft on the Moon, travel at least 500 meters and transmit high-definition video. The challenge ended with no winner [2] [2a] until 2018, when Beresheet entered a lander from Israel's non-profit SpaceIL. As of 2021, it was the only one launched albeit with an unsuccessful landing attempt in 2019 [3]. In 2018, NASA founded the Commercial Lunar Payload Services Program (CLPS) to use commercial lander services for science and technology payloads [4]. Starting in 2018 with 400 entries reported in 2021, Factories in Space (www.factoriesinspace.com) became the largest online commercial space database that grew to 825 in the 2023 survey. However, the number of unique companies was about 755 because some had multiple entries due to being active in separate fields. In the 2021 survey, missions scheduled for 2022 were lunar landers from Astrobotic, Intuitive Machines, and ispace. And, planned launches for 2023 included Firefly's and Masten Space's Moon landers.

Year	Private Company NASA/ CLPS Awarded	Funding Amount ($M)
2019	Astrobotic	79.5
2019	Intuitive Machines	77.0
2020	Masten	75.9
2020	Astrobotic	199.5
2021	Firefly Aerospace	93.3

Year	Private Company NASA/Artemis Awarded	Funding Amount ($M)
2020	Blue Origin	579.0
2020	Dynetics	253.0
2020	Space X	135.0
2021	Space X/Starship	2,890.0
2021	NextSTEP	146.0

Figure 1

By August 2021, P. Lionnet estimated the worldwide space economy consolidated value at about $292 billion [5]. Figure 2 shows the classification of in-space economy companies. Many companies now have multiple entries in the database. Overall, approximately 1/3 of entities are in dormant, concept or early stages. About 1/3 are in active development. About 10% of companies have launched some technologies to orbit [6]. Figure 3 lists the founding years of organizations together with the status categories. Establishment of a company does not correlate to a successful long-term business or to demonstration missions, because most become dormant [7]. As seen from the chart, many commercial organizations are in the early stages, where the visible progress could be limited to a website and a small partially committed team. Only a small number of companies have performed orbital demonstrations or are active. It shows there is still a long path for many in-space economic services to become commonplace.

Fig.2. In-space classification by status

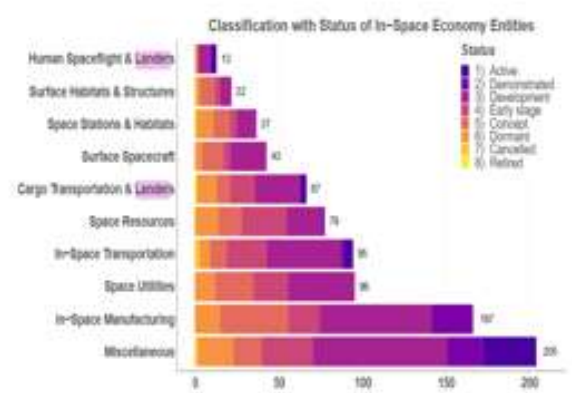
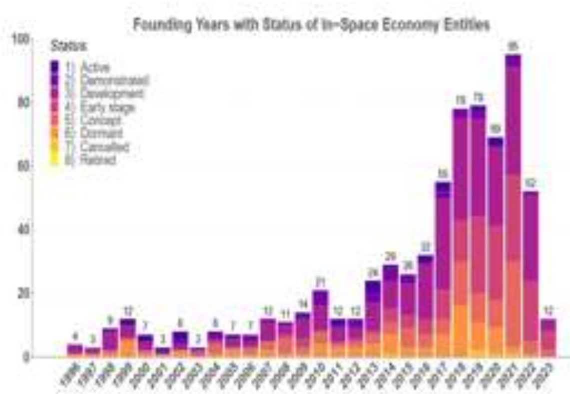


Fig 3. In-space economy founding years by status



Introduction

The cost of space launch dropped from very high levels in the first decade of the space age but then remained high for decades and was especially high for the space shuttle. Apparently, space launch due to cost savings became the supply niche that government market demand provided. In the most recent decade, commercial rocket development has reduced the typical space launch cost by a factor of 20 while NASA's launch cost to ISS has declined by a factor of 4 [8]. Table 1 shows the launch costs of the space shuttle and Falcon 9 plus Dragon to the International Space Station (ISS).

System	Shuttle	Falcon 9 plus Dragon
Total cost per launch, 2018 $M	1,697	150
kg to ISS	16,050	6,000
Total 2018 $k/kg	105.8	25

Table 1. Total launch cost to ISS for space shuttle and Falcon 9 plus Dragon.

The high costs of ordinary launch vehicles and of the space shuttle were due to institutional causes, some of which included military heritage, the need for high reliability, and a non-industrial culture [9]. However, the fundamental cause indicated lack of competition. The traditional space population pursued goals set by governments, with boundaries defined by political and social forces, whereas New Space populations aimed for a common, nongovernmental market [10]. In other words, private commercial startups provide competition. Entrepreneurship literature has shifted from a more practice-oriented approach toward the development of a more general theory of how space startups prospect, develop, and exploit opportunities. The underlying mechanisms through which specific sectors, such as lunar landers, shape new space phenomena and the 'bottom-up' processes through which startups interact in prospecting, developing, and exploiting entrepreneurial opportunities remain largely under-theorized and little understood [11]. The uncertainty that space sectors have impacts on how lander startups prospect, develop, and exploit opportunities [12]. Lunar-based competencies do not require lander startups to have control of resources but only access to resources that provide the potential for a competitive advantage [13]. These resources include, but are not limited to, the experiences and knowledge startups possess.

Recent developments from the New Space industry suggest several new startups to create a self-sustained economy in cislunar space. Industries such as asteroid mining, Moon mining, and on-orbit manufacturing require the existence of an in-space economy developed for business cases to close in the long term, without the need to have the government as a permanent anchor customer [14]. NASA has already awarded commercial contracts for payload delivery to the lunar surface and expects to establish additional partnerships to support upcoming lunar ventures. Several of these payloads require vehicles capable of exploring the environment — such as rovers — to achieve scientific objectives. To prepare for these missions, NASA has conducted a few studies that have led to advanced propulsion, navigation, communication, landing and other critical lander subsystems [15]. In 2018, NASA initiated the CLPS program to seek commercial companies for the delivery of payloads to the Moon's surface. The ecosystem created by the availability of commercial lunar delivery capabilities shows the simultaneous emergence of lunar astropreneurial startups providing essential services required.

Lonestar, a new space startup, provides premium backup disaster recovery capability on the lunar surface for organizations and communities on Earth that want a secure backup for their digital footprint. The need for this backup capability has grown due to climate change impacting the growing number of wildfires and the rising flood waters. By partnering with Intuitive Machines (a CLPS provider), Lonestar can test early concepts on the lunar surface and gain market traction as it builds its lunar storage facility. One of the many challenges of hardware on the Moon is access to power, especially during the lunar night of negative 280 Fahrenheit temperatures which could damage equipment. Eternal Light will provide power beaming from the lunar orbit to ground assets. Communication on the lunar surface may be a challenge. Robotic systems carried by Intuitive Machines to the lunar surface may partner with Nokia Bell Labs to test the range of communication terminals on the Moon. Lonestar, Eternal Light, Intuitive Machines, and Nokia are "not only co-creating with existing institutions" [16], but they are also co-creating a new space ecosystem on the Moon that will create future value [17].

From an economic point of view, the development of space business entails three distinctly successive phases. In the first phase, space activities are government driven, based upon national prestige and financed with public money. In a second phase, large space companies, as a reaction against reduced government space funding, responds to market demand with their own funds or debt financing and perform commercial space business. Since the year 2000, in the third phase, entrepreneurs acquire equity funding to develop independently space application projects. This phase is referred to as the New Space economy [18].

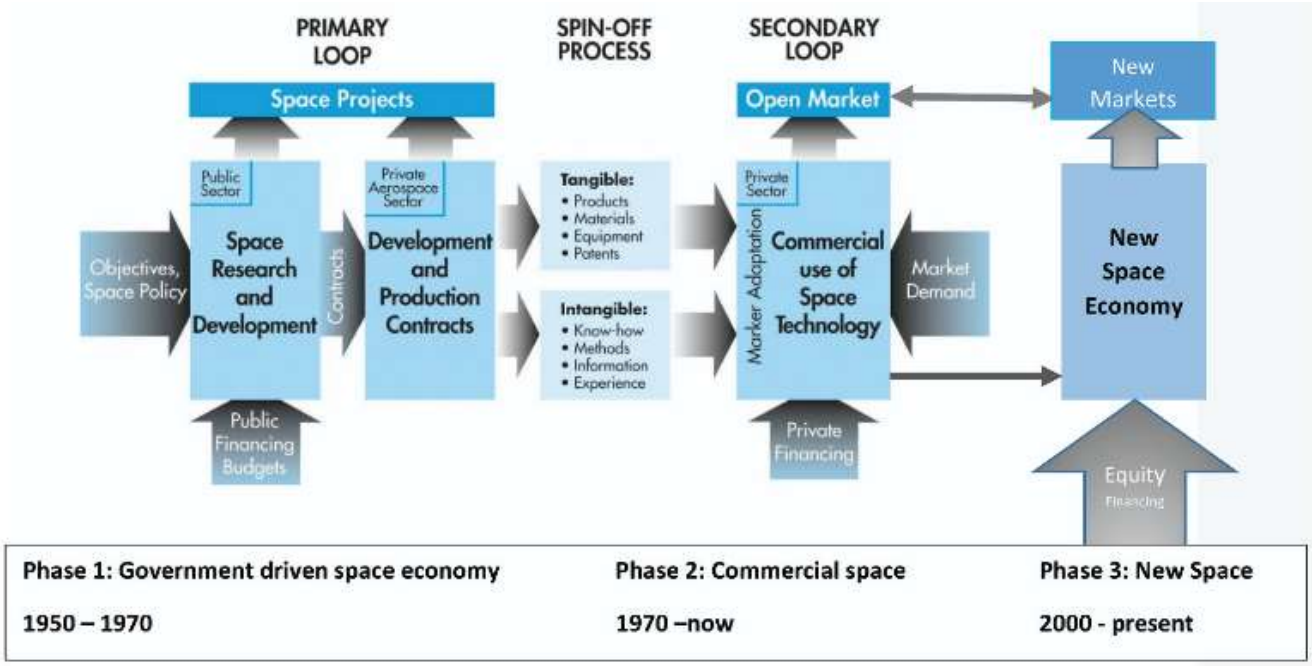


Figure 4. Three phases of space business, 1945–2021.

Clearly, equity investors believe in New Space business. Equity investments in space start-ups were about $130 billion U.S. dollars in 2019 [19] compared to its 2014 equivalent of around $20 billion U.S. dollars. As a disclaimer most yearly statistics published include New Space activities under commercial space turnover, so recent economical evaluations fail to clearly distinguish between the two categories [20]. A figure around a space turnover in the order of one trillion U.S. dollars by 2040 seems plausible. A common saying is that NASA pays 90% of the cost for the last 5% of reliability. For space agencies, the politics of mission failure drive even higher reliability costs than economics do. To help alleviate this, NASA has implemented commercial provider programs including Commercial Lunar Payload Services (CLPS), which aims to put higher risk but lower cost uncrewed landers on the Moon. The expectation is to increase the science return on the dollar despite a higher failure rate [21]. On the other hand, a commercial operation needs to attract customers requiring assurance of reliable boost or reliable delivery of payloads. The remaining key challenge appears as proof of sustainable operability in a dusty lunar environment. The technological readiness level needs to be advanced to TRL 6 including a focus on long-run reliability and a demonstration of integrated robotic autonomy with simulated Earth-Moon communications latency to address remaining doubts. [22].

Problem

Understanding the processes associated with prospecting opportunities continues to come in a variety of forms, particularly with new technologies. Lunar landers are a key variable in any space startup's business environment. Since space startups interact with competitors, customers, regulators, and other stakeholders, their technological conditions tend to shape the determinants of astropreneurship [23]. Moreover, opportunities are strongly intertwined with the goals derived from the startup founders' experiences [24]. Studies of space startup ''bottom-up'' processes remain largely under-theorized, and little understood, on how startup founders develop vision for their startup missions. This is of particular concern in the context of new space startups rapidly transforming or supplanting existing ones [25]. The ecosystem being created by the availability of commercial lunar delivery capabilities is characterized by the simultaneous emergence of lunar startups. This co-creation of value across the New Space startups forms value constellations [26]. Astropreneurial ecosystems are distributed structures, the constituent startups of which co-create ecosystem outputs. This is best illustrated in the emerging lunar space economy, where the uncertainty is "resolved gradually through the accumulative co-creative entrepreneurial process" [27]. In particular, the value captured in the investor presentations and follow-up conversations in the new lunar ecosystem, highlight their co-creation of value across a community of astropreneurs.

Purpose

This paper aims to explore non-governmental initiatives that afford identification and comparative analysis of lunar lander and lunar ice mining sectors of the space startup industry.

Methods and Results

A literature search was surveyed for lists of private space companies, more specifically those dedicated to lunar exploration and ISRU operations. The first list reviewed was a Wiki version that included cargo and crew transport vehicles (both orbital and suborbital); launch vehicle manufacturers; landers, rovers, and orbiters (Appendix A); research craft and tech demonstrators; propulsion manufacturers; satellite launchers; spacecraft component developers and manufacturers; space liner companies; and space-based, economy-specific manufacturing and mining operations. The second list reviewed was of space companies dedicated to the manufacture of lunar landers, classified per funding type (Appendix B). The third list reviewed Maslennikov's Top 100 Space startups in USA [28] that provided funding amounts for each startup. Additionally, listed are the winners for both $20 M Google Lunar X Prize (2018) for landing a private robotic spacecraft and NASA's Centennial Challenges Program (CCP) for incentivizing architecture approaches for excavating icy regolith and delivering water in extreme lunar environments. The Prize ended with no winner, and the $500,000 Challenges ended with 13 winners.

The Wiki list of USA space companies dedicated to lunar lander development totaled 15, three of which remain operational (Appendix A). Although Wiki stated factual accuracy may be compromised due to out-of-date information, several space companies dedicated to lunar lander development were committed to multiple space sectoral competencies. With the second list of 17 lunar lander companies, 15 appear funded by the government; four were either wholly or partially funded with private investment. Out of 22 Google Lunar X Prize entries, 9 were from USA and two named "Finalists" (Appendix D). The list of lunar landers space companies were classified per funding type (Appendix B). NASA's Challenge named 13 winners (Appendix E), but none for Google Lunar X Prize. There was no space company overlap between the entries of the two competitions. Four percent of Maslennikov's Top 100 Space startups in USA (June 2025) matched Wiki's lunar lander companies (e.g. Astrobotic, Intuitive Machines, Firefly, and Blue Origin), and five percent of funding-classified lander companies with Wiki's landers (Astrobotic, Intuitive Machines, Firefly, Moon Express, and Blue Origin). The matched Maslennikov's Top 100 startups developing lunar lander are described in Table 1.

Intuitive Machines	$4820.0 M	Provides engineering solutions at the unimagined intersections between energy, medicine, and aerospace. Builds Earth-Moon communications infrastructure for NASA.
Firefly Aerospace	746.0	Provides on-orbit space debris removal and annual CLPS lunar deliveries.
Astrobotic	249.6	Space robotics and lunar lander company making space and moon accessible
Blue Origin	185.4	Focuses on lowering the cost of spaceflight and helping to explore the solar system
Moon Express	65.5	Develops a robotic spacecraft for low cost missions beyond the Earth, including the Moon, asteroids, and Mars.

Table 1. Maslennikov's Top 100 startups developing lunar landers

Table 1 shows five of the seventeen lunar lander companies known to be funded by the government or more infrequently by private investment. Figure 1 shows graphically the skewed fundings of Maslennikov's Top 100 startups.

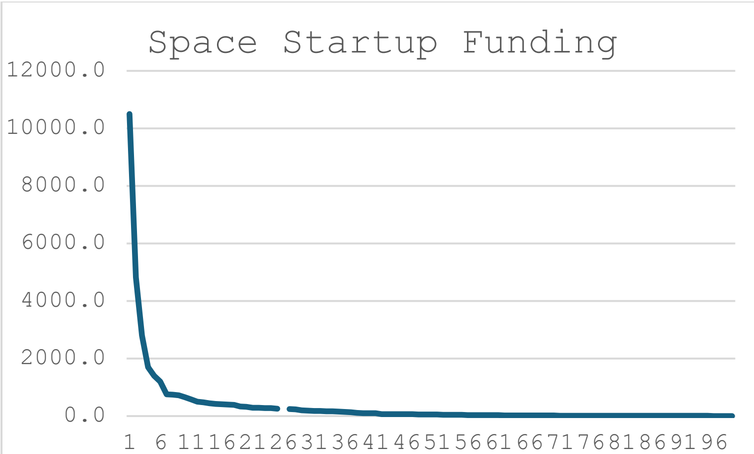


Figure 1. ($M)

Only one startup, Intuitive Machines, appears prominent in funding. Figure 2 shows the other four lunar lander startups in the Top 100 with greater funding dispersion. Funding amount appears to not determine the success for lunar lander operations.

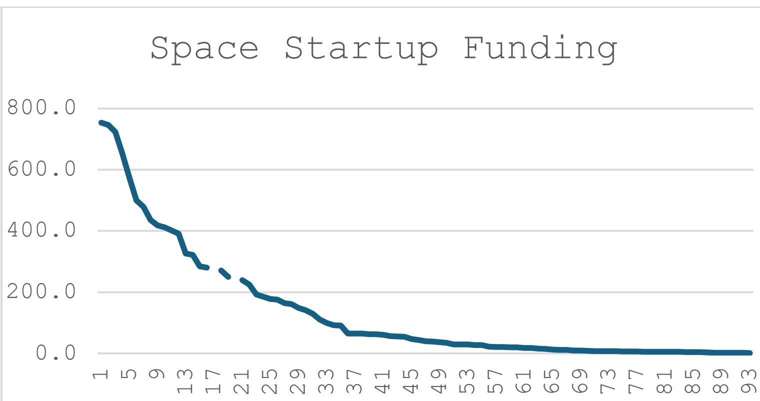


Figure 2. ($M)

Table 1 was extracted from a database of non-governmental organizations involved in creating a lunar economy [29]. From Maslennikov's Top 100 Space startups in USA, diversity of company products space startups develop, pivoted to developing other products, including lunar landers. Table 2 provided insights from interviews conducted with a subset of these organizations.

Astrobotic	Astrobotic has a diverse set of customers—companies, universities, non-profits, individuals—but NASA is by far their largest funding source. Astrobotic is one of three partners selected by NASA for their Lunar Cargo Transportation and Landing by Soft Touchdown (Lunar CATALYST) initiative, which is a no-funds SAA. This SAA is designed to encourage the development of robotic lunar landers that can be integrated with U.S. commercial launch capabilities.
Blue Origin	Blue Origin was also selected to be one of14 CLPS providers. They were added to the CLPS program because NASA wanted more providers with large payload capacities. Blue Origin partnered with Draper, Lockheed, and Northrop Grumman to develop a human lunar lander for NASA. Blue Origin was given a non-reimbursable Space Act Agreement as an industry partnership with NASA to work with Johnson and Goddard to mature a navigation and guidance system for safe and precise landing at a range of locations on the Moon.
Intuitive Machines	Intuitive Machines developed several airborne drones and spacecraft, including the Universal Reentry Vehicle (URV). Their Nova-C lunar lander draws direct heritage from

	NASA's Project M lunar lander and Project Morpheus. The core team from these missions founded Intuitive Machines.
Firefly	Firefly has developed a family of launch vehicles and in-space services, with a focus on affordability, convenience, and reliability. Firefly built a lunar lander based on Israel Aerospace Industries' Beresheet, named Genesis.
Moon Express	Moon Express, an American, privately held company, competed for the Google Lunar X Prize, and in 2016 became first private company to get U.S. approval for a lunar mission. Moon Express is one of three partners selected by NASA for their Lunar Cargo Transportation and Landing by Soft Touchdown (Lunar CATALYST) initiative.

Table 2

Prize competitions have been used throughout history to accelerate the development of many different technologies. The history of successful prize competitions has shown the potential for a break-through developments and the accomplishment of feats thought to be "impossible." In most cases, the detrimental effects are negligible for a competition when the prize is not won, because there was little cost and no resulting purse payment [29a]. Startups come from different backgrounds such as product diversity, governmental affiliations, and competition for Prized fundings, however, they also partn.er with other startups to develop lunar landers. Out of the 23 companies from the database of 84 non-governmental space companies interviewed for which lunar services were the primary focus of their business model, nine were considered nascent or at a stage one, eight were at a stage two, or had a government contract, flight heritage, or had raised funds. Additionally, six of the companies that were entirely lunar-focused rated at stage three [30].

Discussion

The most recent lunar landing attempts have been unsuccessful; a successful commercial or non-governmental landing will be important to demonstrate that commercial providers can be effective. Until then, businesses and the public may be skeptical of their capabilities. As such, establishing access to resources will be important to encourage investment and use. Further, access arguably will inspire new possible ways to utilize access to the Moon. Beyond establishing that commercial providers can access the Moon, making these services routine and affordable will be important. Routine access to the Moon is the key to market development, over cost. Companies are more likely to invest in lunar systems or send cargo to the Moon if access were routine. Even if the mission were unsuccessful, there would be other opportunities frequent enough that the risk could be weighed, rather than having a single chance in outcomes [31].

The number of CLPS providers—currently, 14—is unsustainable, in that it may be possible for two or so companies to profit and find a market niche, while the others will be forced to consolidate, drop-out, or cease to exist. In particular, the small lander market may be particularly short-lived. As NASA and other space agencies focus increasingly on habitation and permanent presence, payload sizes will increase to accommodate the transportation of large equipment, systems, and humans, compared to the early missions that focus primarily on much smaller science and exploration payloads. As this shift occurs, the demand for small landers will decrease significantly. When this occurs, small landers could transition to "hoppers" or small vehicles that visit various locations on the Moon to accommodate science and exploration demands [32].

Conclusion

With the supply niche that government market demand has provided, private commercial rocket development has reduced the typical space launch cost by a factor of 20. Traditional space population pursued goals set by governments, whereas New Space populations aim for a common, nongovernmental market of space exploration and exploitation. The underlying mechanisms through which lunar landers startups prospect and exploit opportunities remain largely under-theorized and little understood. This paper aims to characterize the lunar lander market and envision its role to deliver materials and equipment for lunar surface ISRU operations.

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Appendix A. Wiki Listing of Lunar Landers

Company name	Craft name	Craft type	Craft status
Astrobotic Technology	Red Rover	lunar rover	Development
	Griffin (previously Artemis Lander)	lunar lander	Development
	Peregrine Lander	lunar lander	Retired
Blue Origin	Blue Moon	lunar lander	Development

	Integrated Lander Vehicle	crewed lunar lander	Development
Dynetics	Dynetics HLS	lunar lander	Development
Firefly Aerospace	Blue Ghost	lunar lander	Operational
	Elytra	orbital vehicle	Development
Golden Spike Company	*unnamed*	crewed lunar lander	Cancelled
(defunct)			
Independence-X Aerospace	SQUALL (Scientific Quest Unmanned Autonomous Lunar Lander)	lunar lander	Cancelled
Interorbital Systems	RIPPER (Robotic InterPlanetary Prospector Excavator Retriever)	lunar lander	Development
Intuitive Machines	Nova-C lander, and Universal Reentry Vehicle (URV)[178]	lunar lander; reusable orbital vehicle	Operational
Lunar Mission One	*unnamed*	lunar lander	Proposed (2014)
Masten Space Systems	XEUS	lunar lander	Negotiating
Masten Space Systems	XL-1	lunar lander	Development
Moon Express	*MX-1*	lunar lander	Testing
OrbitBeyond	*Z-01*	lunar landers and rovers	Proposed (2018)
PTScientists	ALINA (Autonomous Landing and Navigation Module)	lunar lander	Development
Roscosmos	Luna 25	lunar lander	Crashed
SpaceX	Starship	crewed mars lander	Development
	Starship HLS	crewed lunar lander	Development
Team Indus	HHK-1	lunar lander	Development
Space IL	Beresheet	lunar lander	Crashed upon landing
Space Explration Corp	Defiant	lunar lander	Cancelled
Masten Space Systems (R&D)	XA-0.1B	Lunar Lander Challenge Level 1	Operational

Masten Space Systems (R&D)	XA-0.1E	Lunar Lander Challenge Level 2, commercial precursor flights	Retired (12 flights)
Masten Space Systems (R&D)	XL-1T	terrestrial test bed for the XL-1 lunar lander	Development

Appendix B. Database of Companies: Names and Basic Info [Colvin, T. J., Crane, K., Lindbergh, R., & Lal, B. (2020). Demand drivers of the lunar and cislunar economy. *IDS Science & Technology Policy Institute, IDA Document D-13219***]**

Key for Funding: Government, foreign or domestic (Gov); Private Investment or Customers (PI); Private Philanthropic/Self-funding (PP); None or Non-Profit (N); Unknown (U). The funding refers specifically to funding for lunar programs, not necessarily for the entire company, although that is often the case. Tot no. = 24

Company	Country	Sector	Sub-Sector	Key Products/ Services	Funding
Astrobotic	United States	Transportation	Lander; Rover	Payload delivery services; ISRU testing for the ESA	Gov & PI
Blue Origin	United States	Transportation; Supply Chain	Lander; Surface to Orbit	Lunar Lander, Launch Vehicle Services, ISRU Studies	Gov & PP
Boeing	United States	Transportation; Structure/Habitat	Surface to Orbit; In-Space Habitat	Lunar Lander, Lunar Habitat, Launch Services for Lunar Gateway	Gov
Ceres Robotics	United States	Transportation; Structure/Habitat	Rover; Lander; Habitation	Design and Construction of Robots	Gov
Deep Space Systems	United States	Transportation	Lander	CLPS Small Lunar Lander	Gov
Draper Labs	United States	Transportation;	Lander	Launch Services as a CLPS Provider	Gov
Dynetics	United States	Supply Chain	Lander	CLPS Small Lunar Lander-- descent element	Gov
Firefly Aerospace	United States	Transportation	Surface to Orbit; Lander	Lunar Lander, Launch Services	PI
Intuitive Machines	United States	Transportation	Lander	Development of a CLPS lander	Gov
Lockheed Martin	United States	Transportation; Structure/Habitat	Lander; In-Space Habitat	Lunar Habitat, Orion Crew Module, Lander	Gov
Masten Space Systems	United States	Transportation	Lander; Surface to Orbit	Lunar Landers for CLPS, engines	Gov & PI
Moon Express	United States	Transportation	Lander	Development of Lunar Lander and Prospecting on Lunar Surface	Gov & PI
Northrop Grumman (and subsidiary Orbital ATK)	United States	Structure/Habitat; Supply Chain; Transportation	In-Space Habitat; Lander; Orbit to Orbit	Habitat; Human Lunar Lander; Launch Vehicle	Gov
OrbitBeyond	United States	Transportation	Lander	Payload delivery services	Gov
Sierra Nevada Corp.	United States	Structure/Habitat; Transportation	In-Space Habitat; Lander	Lunar Habitat; Propulsion System Prototype; possibly Lander	Gov
Skycorp Incorporated	United States	Transportation	Orbit to Orbit	Lunar lander, Lunar outpost	U
Tyvak Nano-Satellite Systems Inc.	United States	Transportation	Lander	Lander for CLPS	Gov

Appendix D. 20 M Google Lunar X Prize (2018)

No.	Country	Team name	Craft name	Craft type	Craft status as of closure of GLXP competition	Ref
22	Israel	Team SpaceIL	Beresheet ("Genesis")	lander	Finalist team,[17] development, launch under contract	[11]
07	US	Moon Express	MX-1E	lander	Finalist team,[17] development, launch under contract	[42][43]
12	International	Synergy Moon	piggyback contract ride with TeamIndus's lander[44]	lander	Finalist team,[17] development, launch under contract	[44]
			Tesla	rover		[8]
15	Japan	Hakuto[45]	piggyback contract ride on Team Indus's lander[46]	lander	Finalist team,[17] development, launch contract canceled[47][48]	[46]
			Sorato[50]	rover		[46]
28	India	TeamIndus	HHK-1	lander	Finalist team,[17] development, launch under contract	[51][52]
			ECA	rover		
01	US	Odyssey Moon	MoonOne (M-1)	lander	development, teaming with Team SpaceIL[55]	[54]
02	US	Astrobotic	Griffin[56][58]	lander	withdrawn from competition[17]	[56]
			Red Rover[59][needs update]	rover		[60]
03	Italy	Team Italia	Amalia (Ascensio Machinae Ad Lunam Italica Arte)	rover	Launch contract not secured in time	[61]
04	US	Next Giant Leap			Acquired by Moon Express[62]	[61]
05	International	FREDNET[64]			withdrawn	[65]
06	Romania	ARCA	HAAS	lunar orbiter	withdrawn	[66]
			European Lunar Explorer	spherical rover		[66]
08	US	STELLAR	Stellar Eagle	rover	development, teaming with Synergy Moon[67]	[68]
09	US	JURBAN	JOHLT		withdrawn	[69]
10	Malaysia	Independence-X	SQUALL (Scientific Quest Unmanned Autonomous Lunar Lander)	Lander/Rover Probe	development, teaming with Synergy Moon[67]	[70]
11	US	Omega Envoy	To be named	lander	development, teaming with Synergy Moon[67]	[71]
			Sagan	rover		[71]
13	International	Euroluna	ROMIT		Launch contract not secured in time	[72]
14	International	Team SELENE	RoverX	wheel+leg robot	withdrawn	[73]
16	Germany	Part-Time Scientists	ALINA	lander	Launch contract not secured in time	[74][75]
			Audi lunar quattro	rover		
17	Germany	C-Base Open Moon	C-Rove	rover	withdrawn[76]	[77]
18	Russia	Selenokhod			withdrawn	[76]
19	Spain	Barcelona Moon Team			withdrawn	[77]
20	US	Mystical Moon			withdrawn	[78]

Appendix E. CCP's Break the Ice Lunar Challenge Phase 1 Winners

Team	Location	Prize	Award
Redwire Space	Jacksonville, FL	1st place	$125,000
Colorado School of Mines	Golden, CO	2nd place	$75,000
Austere Engineering	Littleton, CO	3rd place	$50,000
AggISRU	College Station, TX	Runner up	$25,000
Aurora Robotics	Fairbanks, AK	Runner up	$25,000
Lunar Lions	New York, NY	Runner up	$25,000
OffWorld Robotics	Pasadena, CA	Runner up	$25,000
Oshkosh Corporation	Oshkosh, WI	Runner up	$25,000
Rocket M	Mojave, CA	Runner up	$25,000
Space Trajectory	Brookings, SD	Runner up	$25,000
AA-Star	Redmond, WA	Runner up	$25,000
LIQUID	Altadena, CA	Runner up	$25,000
Terra Engineering	Gardena, CA	Runner up	$25,000
TOTAL AWARDED			**$500,000**