

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, DC 20549

FORM 10-K

(Mark One)

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2021

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File Number: 001-39426

ASTRA SPACE, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware

(State or other jurisdiction of incorporation or organization)

1900 Skyhawk Street

Alameda, CA

(Address of principal executive offices)

85-1270303

(I.R.S. Employer Identification No.)

94501

(Zip Code)

Registrant’s telephone number, including area code: (866) 278-7217

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Class A Common Stock, par value \$0.0001 per share	ASTR	The NASDAQ Global Select Market

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of “large accelerated filer,” “accelerated filer,” “smaller reporting company,” and “emerging growth company” in Rule 12b-2 of the Exchange Act.

Large accelerated filer☒

Accelerated filer☐

Non-accelerated filer☐

Smaller reporting company☐

Emerging growth company☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management’s assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

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As of the last business day of the most recently completed second fiscal quarter, which was June 30, 2021, the aggregate market value of Class A common stock of the Registrant held by non-affiliates was approximately \$1.98 billion based on the closing sale price of \$12.35 as reported on the Nasdaq Global Select Market.

As of March 25, 2022, the registrant had 208,606,727 shares of Class A common stock, \$0.0001 par value per share, outstanding and 55,539,189 shares of Class B common stock, \$0.0001 par value per share, outstanding.

Documents Incorporated by Reference

Portions of the registrant's Proxy Statement for the 2022 Annual Meeting of Stockholders are incorporated herein by reference in Part III of this Annual Report on Form 10-K to the extent stated herein. Such proxy statement will be filed with the Securities and Exchange Commission within 120 days of the registrant's fiscal year ended December 31, 2021.

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PART I

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the federal securities laws and particularly in the following sections of this Annual Report: Item 1: “Business,” Item 1A: “Risk Factors,” Item 3: “Legal Proceedings” and Item 7: “Management’s Discussion and Analysis of Financial Condition and Results of Operations”. These statements are indicated by words or phrases such as “anticipate,” “expect,” “estimate,” “seek,” “plan,” “project,” “aim,” “believe,” “could,” “should,” “intend,” “will,” and similar words or phrases. These forward-looking statements may include projections of financial information; statements about historical results that may suggest trends for our business; statements of the plans, strategies, and objectives of management for future operations; statements of expectation or belief regarding future events (including any acquisitions we may make), technology developments, our products, product sales, expenses, liquidity, cash flow and growth rates. Such statements are based on current expectations, estimates, forecasts and projections of our performance, our industry’s performance and macroeconomic conditions, based on management’s judgment, beliefs, current trends and market conditions, and involve risks and uncertainties that may cause actual results to differ materially from those contained in the forward-looking statements. We derive most of our forward-looking statements from our operating budgets and forecasts, which are based upon many detailed assumptions. While we believe that our assumptions are reasonable, we caution that it is very difficult to predict the impact of known factors, and it is impossible for us to anticipate all factors that could affect our actual results and undertake no obligation to update or revise publicly any forward-looking statements, whether because of new information, future events, or otherwise. Accordingly, we caution readers not to place undue reliance on these statements. Material factors that could cause actual results to differ materially from our expectations are summarized and disclosed under “Risk Factors” in Part I, Item 1A of this Annual Report on Form 10-K.

Unless the context otherwise requires, all references in this Annual Report on Form 10-K to "Astra," "the Company," "we," "us," and "our" refer to the business of Astra Space, Inc. prior to the consummation of the Business Combination (as defined below) with Holicity Inc. and Astra Space, Inc. following the consummation of the Business Combination with Holicity Inc.

ITEM 1. BUSINESS

Company Overview

Astra’s mission is to launch a new generation of launch services and space services and products to improve life on Earth. These services and products are enabled by new constellations of small satellites in Low Earth Orbit (“LEO”), which have rapidly become smaller, cheaper, and many times more numerous than legacy satellites. Launch vehicles, however, have not evolved in the same way — most rockets remain focused on serving legacy satellites and human spaceflight missions. As a result, we believe existing launch vehicles are too large, expensive, infrequently launched, and insufficiently responsive to meet the needs of the evolving space market.

We aim to solve this problem with the world’s first mass-produced dedicated orbital launch system. Our system consists of a small launch vehicle and mobile ground infrastructure that can fit inside standard shipping containers for rapid deployment anywhere in the world that our spaceports are located. Our rocket requires a launch site with little more than a concrete pad and only six Astra employees on-site, leveraging our highly automated launch operations. Our production system is designed to scale efficiently, which we expect to allow us to perform to hundreds of launches per year in the future. Our rocket’s payload capacity is tailored for the needs of modern LEO satellite constellations, allowing precise and rapid placement of individual satellites in their required orbits. We believe this makes Astra’s system more responsive and affordable than other launch alternatives for the thousands of LEO satellites planned in the coming decade.

We have made significant progress in the development of the system to date. On November 20, 2021, we launched launch vehicle LV0007 into orbit at an inclination of 86.0 degrees, an altitude of 500 km and velocity of 7.61 km/s, making Astra one of the fastest U.S. companies to have successfully demonstrated the orbital placement of a test payload. We commenced paid commercial launch services in 2022 and on February 10, 2022, we launched launch vehicle LV0008. After a nominal first stage flight, the payload fairing did not fully deploy prior to the upper stage ignition due to an electrical issue, which, together with a software issue, resulted in the upper stage not reaching orbit and the end of the mission. Through our investigation process, we identified and have since corrected the issues that caused the error in the payload fairing’s deployment and addressed the software issue. On March 15, 2022, we conducted an orbital launch with launch vehicle LV0009, our second paid commercial launch, which successfully reached an Earth orbit and successfully deployed its payload. We apply an iterative approach to product development, emphasizing testing and learning as fast as possible through rapid iteration, co-located design, build, and test facilities, and frequent launches, which we believe is unique and the reason for our success to date. We have signed customer contracts for contracted revenue for our launch services, representing approximately 50 launches (as of December 31, 2021), which are expected to occur through 2025.

We view launch services as the first phase of our product and service offerings, with the ultimate single goal of building the leading space platform under a one operating segment model and one reportable segment. We intend to expand our product and service offerings to LEO operators to include launch services, space products and space services to achieve our space services platform model. Our integrated space services platform will allow our customers to focus on innovative applications rather than investing in bespoke satellite development and separately contracting launch services. Further details of our current and expected future service offerings are provided below.

- **Launch Services** — To provide rapid, global, and affordable launch services to satellite operators and governments in partnership with third-party spaceport providers globally. Our launch services includes services tied directly to our launch along with complementary services that are not part of our fixed pricing for which we charge a separate fee. We currently operate our launches from Pacific Spaceport Complex in Kodiak, Alaska and Cape Canaveral Space Force Station in Cape Canaveral, Florida. We plan to add additional launch sites in diverse locations based on our customers’ inclination requirements and as we increase the frequency of launches.
- **Space Products** — To design and provide the space products based on the customers’ needs for a successful satellite launch and other products that we may sell in the future. Currently we offer two in space electric propulsion systems.
- **Space Services** — To invest in building our portfolio of space services which includes communication service and constellation services which will be based on a network of spacecraft that we intend to build and allow customers to access for use in their business. Specifically, our space services encompass all aspects of hosted satellite and constellation services, including hosting customer payloads onto our spacecraft, and delivering services, such as communication services.

2021 Highlights and Recent Developments

On June 30, 2021, Holicity consummated a business combination (the “Business Combination”) pursuant to the Business Combination Agreement dated as of February 2, 2021 (the “BCA”), by and among Holicity, Holicity Merger Sub Inc., a wholly owned subsidiary of Holicity (“Merger Sub”), and Astra Space Operations (“pre-combination Astra”). Immediately upon the consummation of the Business Combination, Merger Sub merged with and into Astra Space Operations with Astra Space Operations surviving the merger as a wholly owned subsidiary of Holicity. Holicity changed its name to “Astra Space, Inc.”, and pre-combination Astra changed its name to “Astra Space Operations, Inc.”

On July 1, 2021, we, through our wholly owned indirect subsidiary, merged with Apollo Fusion, Inc. ("Apollo"). The fair value of the consideration paid as of July 1, 2021, was \$70.8 million, net of cash acquired (the "Apollo Merger"). Apollo designs, tests, manufactures and operates propulsion modules to enable satellites to orbit in space.

On August 20, 2021, this propulsion module (known as the ACE thruster) achieved successful orbital ignition on board the Spaceflight Sherpa-LTE1 orbital transfer vehicle (OTV). The Sherpa OTV launched June 30, 2021 from SpaceX's Transporter-2 mission from Cape Canaveral, Florida. After successfully deploying all rideshare payloads, Spaceflight commissioned our thruster. This was our first attempt at firing the thruster in orbit and this thruster continues to fire in orbit.

On August 28, 2021, we conducted a test launch for the United States Space Force on our launch vehicle LV0006. The launch vehicle achieved an altitude of approximately 50 km before the range issued an all engine-shutdown command. The launch vehicle was not able to reach orbit.

On November 4, 2021, we filed an application with the Federal Communication Commission, under which we requested authority to launch and operate a non-geostationary orbit satellite system using V-band frequencies (the "Constellation") as we work to build out our space services offering.

On November 20, 2021, we conducted our first commercial orbital launch for United States Space Force on our launch vehicle LV0007. The launch system successfully demonstrated the orbital placement of a test payload to an inclination of 86.0 degrees at an altitude of 500 km. The payload achieved an orbital velocity of 7.61 km/s. When we use the term "commercial orbital launch," we mean a launch conducted pursuant to a license from the Federal Aviation Administration and we do not receive payment for some of our commercial orbital launches. Launch vehicle LV0007 took flight from the Pacific Spaceport Complex in Kodiak, Alaska.

On November 26, 2021, the Company issued a notice of redemption to redeem all of its Public Warrants and Private Placement Warrants ("Redeemable Warrants") outstanding as of December 27, 2021. In connection with the redemption, the holders of 9,413,895 Public Warrants and 5,333,333 Private Placement Warrants elected to receive 3,775,709 shares of Class A common stock in lieu of the redemption price of 0.2560374 shares of Class A Common Stock per Warrant. A total of 586,075 Public Warrants remained unexercised as of December 27, 2021 and the Company redeemed the Public Warrants for a redemption price of \$0.10 per Redeemable Warrant, and aggregate of \$0.1 million. The Public Warrants and Private Placement Warrants were remeasured to fair value as of the exercise or redemption date, resulting in a gain of \$25.7 million for year ended December 31, 2021, and classified within other income, net in the consolidated statements of operations.

On February 10, 2022, we conducted a commercial orbital launch for National Aeronautics and Space Administration pursuant to which we were to deliver four CubeSats to low-earth orbit on our launch vehicle LV0008. After a nominal first stage flight, the payload fairing did not fully deploy prior to the upper stage ignition due to an electrical issue which, together with a software issue, resulted in the upper stage not reaching orbit and the end of the mission. Through our investigation process, we identified and have since corrected the issues that caused the error in the payload fairing's deployment, and addressed the software issue. This was our first launch from Cape Canaveral Space Force Station and also the first launch under the Federal Aviation Administration new Part 450 launch license. Part 450 consolidates Parts 415, 417, 431 and 435 under a single licensing regime and is expected to make it easier for to obtain regulatory approval from the FAA for future launches.

On March 15, 2022, we conducted an orbital launch for three customers of Spaceflight, Inc. and confirmed our first delivery of customer payloads into Earth orbit. Launch vehicle LV0009 took flight from the Pacific Spaceport Complex in Kodiak, Alaska.

Strategy Overview

Using our expertise in the mass production of small launch vehicles or rockets, we seek to provide customers with reliable, daily space delivery as well as turn-key space services. To accomplish this, we intend to:

- **Increase launch capability.** We plan to demonstrate a monthly launch capability by the end of 2022 and approach a more frequent launch capability by the end of 2025. In order to achieve these milestones, we are accelerating our development and production efforts and exploring locations for additional launch sites based on our customers' inclination needs.
 - **Increase the payload of our rockets.** We plan to increase the maximum payload capacity of our launch vehicle to meet the customer needs and demands through a process of iterative development and improvement.
 - **Commence commercial launch operations.** In November 2021, we successfully launched launch vehicle LV0007 to an altitude of 500 km successfully demonstrating the orbital placement of a test payload. We commenced paid commercial launch in 2022.
 - **Space Services offering.** By 2023, we plan to commence offering an integrated spacecraft platform optimized for Astra's launch vehicle and spacecraft. The goal is to allow our customers to focus on developing innovative payloads rather than designing or developing satellite buses or flying satellites.
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Our ability to achieve these goals and objectives by our planned timelines are conditional upon a number of factors, including our ability to successfully and timely develop our launch vehicles and our ability to effectively market and sell our services and products. Please see Item 1A: Risk Factors in this Annual Report on Form 10-K for additional factors that could affect our ability to achieve these goals.

Customer Overview

As of December 31, 2021, we have signed contracts for launch services. Our customers primarily include satellite operators, satellite manufacturers, government agencies and defense prime contractors. These signed contracts span over multiple customers and represents approximately 50 launches to be conducted beginning from year 2022 through year 2025. We have also entered into sales contracts with satellite operators and manufacturers for our space electric propulsion systems, which we expect to begin fulfilling in late 2022.

We expect a portion of our pipeline to continue to convert into new contacts for launch services and space products over the coming months. We believe that our traction to date is driven by our value proposition and direct marketing to potential customers. We note that a portion of this pipeline may not convert if we do not achieve certain milestones or if we are unable to keep up with the demand for our launch services from a production and delivery perspective.

Sales and Marketing

We plan to scale and accelerate our sales and marketing efforts and leverage industry partnerships to grow our customer base. Additionally, as we execute on our upcoming launches, we expect existing customers to expand their contracts with us for the deployment of their future satellites. New service offerings and sales models will be introduced over time to increase market share.

While we are currently focused on market for small-satellite launch services and our space products, we are in the early stages of developing our space services offerings. Our potential customer base for this service has significant overlap with launch services.

Unit Economics of Our Business Models

- **Launch Services.** Launch services are typically priced inclusive of the launch cost of the rocket and are offered as a price per rocket. The end price to the customer is fixed and depends on whether the launch is on a dedicated or ride share basis. In addition, we may offer certain customers bulk discounts, and other customers may elect to purchase add-on services which are priced separately. Costs for launch services are largely fixed in nature and include the operation of our factory and test facility. We embed the variable costs of manufacturing of the launch vehicle and labor into the price as well. The difference represents our unit margins.
- **Space Products.** Space products include design and delivery of a propulsion module which consists of a thruster, a power processing unit, tank and a feed system. Space products are priced considering the design and engineering requirements of the propulsion module. The contract price is fixed for the propulsion module and typically includes additional pricing for engineering services related to customizing the propulsion module. Costs for space products are largely variable in nature and include the time spent on design and engineering requirements and costs of manufacturing of the propulsion module which is embedded into the price. The difference represents our unit margins.
- **Space Services.** We are still in the early stages of developing our space services offerings and have not yet determined how this will be priced. This service is expected to generate revenue in two ways. The first is with the launch and initial delivery of customers payload to their desired orbits, which represent the same unit economics as described in above in launch services. The second is the communication services and constellation services provided through our spacecraft.

Human Capital

Our employees are the cornerstone to our success. As of December 31, 2021, we had 324 employees, all of whom were full-time. Our workforce is primarily based in the San Francisco Bay Area. Prior to joining our company, many of our employees had prior experience working for a wide variety of reputed commercial aviation, aerospace, high-technology and world-recognized organizations.

Our human capital management strategy includes identifying, recruiting, retaining, incentivizing and integrating our existing and new employees, advisors and consultants. The principal purposes of our cash and equity incentive plans are to attract, retain and reward personnel through the granting of cash-based and stock-based compensation awards, in order to increase stockholder value and the success of our company by motivating such individuals to perform to the best of their abilities and achieve our objectives.

Our management team is comprised of our chief executive officer and his six direct reports who, collectively, have management responsibility for our business. Our management team places significant focus and attention on matters concerning our human capital assets, particularly our diversity, capability development and succession planning. Accordingly, we regularly review employee development and succession plans for each of our functions to identify and develop our pipeline of talent. Across our broader population,

approximately 20.7% of full-time employees are women and 39.4% belong to historically underrepresented groups. As we build out the team, we are also investing in the infrastructure needed for continuous professional development, feedback, performance management, and other aspects of a healthy, growth-oriented and high-performing work culture.

Regulatory

Federal Aviation Administration ("FAA")

In order to conduct a launch, we must obtain a commercial space transportation license from the FAA. On August 18, 2021, the FAA granted a commercial space transportation license to us, allowing us to conduct flights of our launch vehicle (Rocket v3.0) from Pacific Spaceport Complex in Kodiak, Alaska to deliver customer payloads to LEO. This license is effective for launches on Rocket v3.0 through March 9, 2026. In addition, on February 4, 2022, the FAA granted us the first commercial space transportation license under Part 450, allowing for flights of our launch vehicle (Rocket v3.3) from Cape Canaveral Space Force Station in Cape Canaveral, Florida, to deliver customer payloads into LEO. This license is effective through January 4, 2027, for launches on Rocket v3.3. Unlike other commercial space transportation licenses, Astra can request a modification of the Part 450 license to add additional launch sites for Rocket v3.3, which is expected to save us the time and expense of applying for a new license for launches using Rocket v3.3.

If there is a mishap during a launch, the FAA will require us to open an investigation into the mishap and we will not be able to launch until the investigation is closed, or the FAA has made a favorable public safety determination.

Federal Communications Commission ("FCC")

The regulations, policies, and guidance issued by the FCC apply to the radio frequencies utilized during operation of our launch vehicles. When we communicate with our launch vehicles using any part of the electromagnetic spectrum, we are operating a space station to which FCC regulations apply. Operators of regulated space stations are required to hold and maintain compliance with proper licenses throughout the duration of any given mission.

The FCC recently enacted a new set of licensing guidelines for small satellites and related systems that may apply to future Astra launch vehicles or satellites manufactured by Astra. As a result, we may face a transition in license types from Special Temporary Authorization ("STA") to the small satellite licensing guidelines. Additionally, the FCC is currently considering additional rules which could change the operational, technical and financial requirements for commercial space operators subject to U.S. jurisdiction. If these, proposed rules become final, they could change system design and financial costs in order to comply with or secure new Astra spectrum licensure.

As a U.S. licensee, the regulations, policies, and guidance issued by the FCC apply to the operation of Astra's future satellite constellation and satellite services. Radio frequency communications between Astra satellites, gateways and user terminals for operations within the U.S. market are regulated by the FCC, including both space stations (satellites) and earth stations (gateways and user terminals). Operators of regulated space stations and earth stations are required to hold and maintain compliance with proper licenses throughout the duration of operations. Additionally, the International Telecommunications Union (ITU) defines international radio regulations, recommendations, and technical standards which all apply to Astra's constellation and satellite services globally.

International Traffic in Arms Regulations ("ITAR") and Export Controls

Our business is subject to, and we must comply with, stringent U.S. import and export control laws, including the ITAR and Export Administration Regulations ("EAR") of the Bureau of Industry and Security of the U.S. Department of Commerce. The ITAR generally restricts the export of hardware, software, technical data, and services that have defense or strategic applications. The EAR similarly regulates the export of hardware, software, and technology that has commercial or "dual-use" applications (i.e., for both military and commercial applications) or that have less sensitive military or space-related applications that are not subject to the ITAR. The regulations exist to advance the national security and foreign policy interests of the U.S.

The U.S. government agencies responsible for administering the ITAR and the EAR have significant discretion in the interpretation and enforcement of these regulations. The agencies also have significant discretion in approving, denying, or conditioning authorizations to engage in controlled activities. Such decisions are influenced by the U.S. government's commitments to multilateral export control regimes, particularly the Missile Technology Control Regime concerning the spaceflight business.

Many different types of internal controls and measures are required to ensure compliance with such export control rules. In particular, we are required to maintain registration under the ITAR; determine the proper licensing jurisdiction and classification of products, software, and technology; and obtain licenses or other forms of U.S. government authorizations to engage in activities, including the performance by foreign persons, related to and who support our spaceflight business. Under the ITAR, we must receive permission from the Directorate of Defense Trade Controls to release controlled technology to foreign person employees and other foreign persons.

See “Item 1A: Risk Factors — We are subject to stringent U.S. export and import control laws and regulations” for more information about the risks associated with the requirements of ITAR and EAR.

Environmental Law Compliance

We are subject to federal, state, local, and foreign laws, regulations and ordinances relating to the protection of the environment, including those relating to emissions to the air, discharges to surface and subsurface waters, safe drinking water, greenhouse gases and the management of hazardous substances, oils and waste materials. Federal, state and local laws and regulations relating to the protection of the environment may require a current or previous owner or operator of real estate to investigate and remediate hazardous or toxic substances or petroleum product releases at or from the property which could result in operational disruptions. Under federal law, generators of waste materials, and current and former owners or operators of facilities, can be subject to liability for investigation and remediation costs at locations that have been identified as requiring response actions.

Available Information

Astra’s annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act are available free of charge through the website of the U.S. Securities and Exchange Commission (the “SEC”), www.sec.gov, and through the Company's website, <https://www.astra.com>, as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Astra also routinely posts press releases, presentations, webcasts, sustainability reports and other information regarding the Company on its website. The information posted on the Company's website is not a part of this report.

ITEM 1A. RISK FACTORS

Our business, operations and financial results are subject to various risks and uncertainties, including those described below, that could adversely affect our business, financial condition, results of operations, cash flows, and the trading price of our common stock. Many of the following risks and uncertainties are, and will continue to be, exacerbated by the COVID-19 pandemic and the geopolitical conflict in the Ukraine with Russia, and any worsening of the global business and economic environment as a result. The following material factors, among others, could cause our actual results to differ materially from historical results and those expressed in forward-looking statements made by us or on our behalf in filings with the SEC, press releases, communications with investors and oral statements. These risk factors are not exhaustive, and investors are encouraged to perform their own investigation with respect to the business, financial condition and prospects of Astra. Readers should carefully consider the following risk factors in addition to the other information included in this filing and our other filings with the SEC. Astra may face additional risks and uncertainties that are not presently known to it, or that it currently deems immaterial, which may also impair Astra's business or financial condition. The following discussion should be read in conjunction with the Company's consolidated financial statements of Astra and notes to the Company's consolidated financial statements in this annual report on Form 10-K.

Summary of Risk Factors

A summary of the material risks affecting our business, operations and financial results include the following:

- We have only conducted one launch which deployed customer satellites into orbit, and any setbacks occurring during launch and subsequent upgrades could have a material adverse effect on our business, financial condition, and operations, and could harm our reputation.
 - We have incurred significant losses since inception and we may not be able to achieve or maintain profitability.
 - The success of our business will be highly dependent on our ability to effectively market and sell our launch services for small LEO satellites and our space products and services and to convert contracted revenues and our pipeline of potential contracts into actual revenues.
 - The market for commercial launch services for small LEO satellites is still emerging, multiple mergers and acquisitions are shifting the market, and the market may not achieve the growth potential we expect.
 - Our ability to grow our business depends on the successful development of our launch vehicles, spacecraft and related technology, which is subject to many uncertainties, some of which are beyond our control.
 - We routinely conduct hazardous operations in manufacturing, test, and launch of our vehicles, space products and vehicle subsystems, which could result in damage to property or persons. Unsatisfactory performance or failure of our manufacturing process, launch vehicles, space products, spacecraft and related technology at launch or during operation could have a material adverse effect on our business, financial condition and results of operation.
 - We may not be able to convert our estimated contracted revenue or potential contracts, into actual revenue.
 - We have limited data and history to test our launch vehicles for the successful deployment of a LEO satellite.
 - Any delays in the development and manufacture of additional launch vehicles, spacecraft, and related technology may adversely impact our business, financial condition, and results of operations.
 - We expect to face intense competition in the commercial space market and other industries in which we may operate.
 - If we are unable to adapt to and satisfy customer demands in a timely and cost-effective manner, or if we are unable to manufacture our launch vehicles or space products at a quantity and quality that our customers demand, our ability to grow our business may suffer.
 - We may be unable to manage our future growth effectively, which could make it difficult to execute our business strategy.
 - Adverse publicity stemming from any incident involving us, our competitors, or our customers could have a material adverse effect on our business, financial condition and results of operations.
 - We currently operate from a facility on a month-to-month lease.
 - Regulatory, availability, and other challenges may delay our progress in establishing the number of launch sites we require for our targeted annual launch rate, which could have an adverse effect on our ability to grow our business.
 - We rely on a limited number of suppliers for certain raw materials and supplied components. We may not be able to obtain sufficient raw materials or supplied components to meet our manufacturing and operating needs, or obtain such materials on favorable terms, which could impair our ability to fulfill our orders in a timely manner or increase our costs of production.
-

- Failure to maintain adequate financial, information technology and management processes and controls could result in material weaknesses which could lead to errors in our financial reporting, which could adversely affect our business, financial condition and results of operations
 - We have identified material weaknesses in our internal control over financial reporting and may identify additional material weaknesses in the future or otherwise fail to maintain an effective system of internal control, which may result in material misstatements of our financial statements or cause us to fail to meet our periodic reporting obligations.
 - We may face litigation and other risks as a result of the material weaknesses in our internal control over financial reporting and the restatement of our financial statements.
 - We are subject to environmental regulation and may incur substantial costs or have operational disruptions.
 - The COVID-19 pandemic has and could continue to negatively affect various aspects of our business, make it more difficult for us to meet our obligations to our customers, and result in reduced demand for our products and services.
 - We may experience difficulties in integrating the operations of acquired companies into our business and in realizing the expected benefits of these acquisitions.
 - A failure of our information technology systems, physical or electronic security protections, or an interruption in their operation due to internal or external factors including cyber-attacks or insider threats, could have a material adverse effect on our business, financial condition or results of operations.
 - The ongoing military action by Russia in Ukraine could have negative impact on the global economy which could materially adversely affect our business, operations, operating results and financial condition.
 - Certain future operational facilities will require significant expenditures in capital improvements and operating expenses to develop and foster basic levels of service required by our launch and space services, and the ongoing need to maintain existing operational facilities requires us to expend capital.
 - Failure of third-party contractors and suppliers could adversely affect our business.
 - We may require substantial additional funding to finance our operations, but adequate additional financing may not be available when we need it, on acceptable terms or at all.
 - Our business is subject to a wide variety of extensive and evolving government laws and regulations. Failure to comply with such laws and regulations could have a material adverse effect on our business.
 - We are subject to stringent U.S. export and import control laws and regulations.
 - Natural disasters, unusual weather conditions, epidemic outbreaks, global health crises, terrorist acts and political events could disrupt our business and flight schedule.
 - Our prospects and operations may be adversely affected by changes in consumer preferences and economic conditions that affect demand for launch or space services.
 - We may in the future invest significant resources in developing new service offerings and exploring the application of our proprietary technologies for other uses and those opportunities may never materialize.
 - If we commercialize outside the United States, we will be exposed to a variety of risks associated with international operations that could materially and adversely affect our business.
 - Failures in our technology infrastructure could damage our business, reputation and brand and substantially harm our business and results of operations.
 - Any acquisitions, partnerships or joint ventures that we enter into could disrupt our operations.
 - We are subject to many hazards and operational risks that can disrupt our business, including interruptions or disruptions in service at our primary facilities, which could have a material adverse effect on our business, financial condition and results of operations.
 - If we fail to adequately protect our proprietary intellectual property rights, our competitive position could be impaired and we may lose valuable assets, generate reduced revenue and incur costly litigation to protect our rights.
 - Protecting and defending against intellectual property claims may have a material adverse effect on our business.
 - The majority of our customer contracts may be terminated by the customer at any time for convenience as well as other provisions permitting the customer to discontinue contract performance for cause (for example, if we do not achieve certain milestones on a timely basis) which if terminated could adversely impact our results of operation.
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- Failure to comply with federal, state and foreign laws and regulations relating to privacy, data protection and consumer protection, or the expansion of current or the enactment of new laws or regulations relating to privacy, data protection and consumer protection, could adversely affect our business and our financial condition.
- Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide.
- We have been focused on developing launch capabilities and services since 2017. This limited operating history makes it difficult to evaluate Astra's future prospects and the risks and challenges it may encounter.
- We are highly dependent on our senior management team and other highly skilled personnel, and if we are not successful in attracting or retaining highly qualified personnel, we may not be able to successfully implement our business strategy.
- The increase in non-U.S. sales could lead to incidents in violation of U.S. and international anti-corruption laws.
- We may become involved in litigation that may materially adversely affect us.
- Astra needs to meet multiple security requirements in order to meet ongoing requirements for participation in government contracts. The inability to meet regulatory requirements or security standards may mean a failure to win contracts, receive security clearance certifications, and loss of current and future business.
- Changes in tax laws or regulations may increase tax uncertainty and adversely affect results of our operations and our effective tax rate.
- Our ability to use our net operating losses to offset future taxable income could be subject to certain limitations.
- The dual class structure of our common stock has the effect of concentrating voting power with our Chief Executive Officer and Chief Technology Officer, which limits an investor's ability to influence the outcome of important transactions, including a change in control.
- We cannot predict the impact our dual class structure may have on the stock price of our Class A common stock.
- Our stock price has been, and likely will continue to be, volatile.
- Delaware law and provisions in our certificate of incorporation and bylaws could make a takeover proposal more difficult.

Detailed Description of Risk Factors

Risk Factors Relating to Our Operations and Business

We have only conducted one launch which deployed customer satellites into orbit, and any setbacks occurring during launch and subsequent upgrades could have a material adverse effect on our business, financial condition, and operations, and could harm our reputation.

The success of our launch and space services offerings will depend on our ability to successfully and regularly deliver customer satellites into orbit. In November 2021, we successfully launched launch vehicle LV0007 to an inclination of 86.0 degrees at an altitude of 500 km and demonstrated orbital placement of test payload. Our data from this launch suggest that we achieve sufficient orbital velocity to successfully inject a satellite into orbit and serve as an opportunity to learn from the experience and to make further refinements to the design and manufacturing processes used to construct our launch vehicles and rockets. On February 10, 2022, we launched launch vehicle LV0008. After a nominal first stage flight, the payload fairing did not fully deploy prior to the upper stage ignition due to an electrical issue which, together with a software issue, resulted in the upper stage not reaching orbit and the end of the mission. On March 15, 2022, we successfully launched launch vehicle LV0009 and confirmed our first delivery of customer payloads into Earth orbit.

The success of our strategy depends on our ability to successfully upgrade our rockets, launch vehicles, spacecraft, and related technology which may require significant adjustments to the design, manufacturing process and performance to achieve intended technological and performance goals. There is no guarantee that our planned subsequent commercial launches will be successful. While we have built operational processes to ensure that the design, manufacture, performance and servicing of our launch vehicles and rockets meet rigorous performance goals, there can be no assurance that we will not experience operational or process failures and other problems during our planned launches. Any failures or setbacks could harm our reputation and have a material adverse effect on our business, financial condition and results of operation.

We have incurred significant losses since inception and we may not be able to achieve or maintain profitability.

We have incurred significant losses since our inception. We incurred net losses of \$257.8 million, \$68.3 million and \$53.2 million for the years ended December 31, 2021, 2020 and 2019, respectively. While we have generated limited income to date, we have only begun our commercial launch activities and space product sales in 2022, and it is difficult for us to predict our future operating results. As a result, our losses may be larger than anticipated, and we may not achieve profitability when expected, or at all, and even if we do, we may not be able to maintain or increase profitability.

We expect our operating expenses to increase over the next several years as we commence commercial launch activities in 2022, continue to refine and streamline our design and manufacturing processes for our launch vehicles, increase the payload of our rockets, make technical improvements, increase our flight cadence, hire additional employees and continue research and development efforts relating to new products and technologies, including our space services. These efforts may be more costly than we expect and may not result in increased revenue or growth in our business. Any failure to increase our revenue sufficiently to keep pace with our investments and other expenses could prevent us from achieving or maintaining profitability or positive cash flow. Furthermore, if our future growth and operating performance fail to meet investor or analyst expectations, or if we have future negative cash flow or losses resulting from our investment in acquiring customers or expanding our operations, this could have a material adverse effect on our business, financial condition and results of operations.

The success of our business will be highly dependent on our ability to effectively market and sell our launch services for small LEO satellites and our space products and services and to convert contracted revenues and our pipeline of potential contracts into actual revenues.

We expect that our success will be highly dependent, especially in the foreseeable future, on our ability to effectively forecast, market and sell our launch services for small LEO satellites and space products. We have limited experience in forecasting, marketing and selling these services and products, and if we are unable to use our current or future sales organization effectively in order to adequately target and engage our potential customers, our business may be adversely affected.

We also expect that our success will be highly dependent on our ability to convert contracted revenues and our pipeline of potential contracts into actual revenues. We have received interest from a wide range of customers across various satellite applications or use cases. Our contracted revenues and our estimated pipeline may not fully convert into actual revenues because certain of our customers have the right to terminate their contracts if we do not achieve certain milestones. We may not meet these milestones, in which case the value of our contracted revenues may be significantly lower than our current estimates. Additionally, if we are unable to keep up with the demand for our launch services from a production and delivery perspective, we may not be in a position to deliver on our contracted revenues or our pipeline of potential contracts.

We remain in active discussions with potential customers and anticipate an increase in contracted revenue as the small satellite and satellite constellation markets continue to develop. Our success depends, in part, on our ability to attract new customers in a cost-effective manner. Notwithstanding our estimated contracted revenue, we expect that we will need to make significant investments in order to attract new customers. Our sales growth is dependent upon our ability to implement strategic initiatives, and these initiatives may not be effective in generating sales growth. In addition, marketing campaigns, which we have not historically utilized, can be expensive and may not result in the acquisition of customers in a cost-effective manner, if at all. Further, as our brand becomes more widely known, future marketing campaigns or brand content may not attract new customers at the same rate as past campaigns or brand content. If we are unable to attract new customers, our business, financial condition and results of operations will be harmed.

The market for commercial launch services for small LEO satellites is still emerging, multiple mergers and acquisitions are shifting the market, and the market may not achieve the growth potential we expect.

The market for in-space infrastructure services, in particular, commercial launch services for small LEO satellites, has not been well established and is still emerging, merging and shifting, with many players acting as customers, prime contractors, or acquirers, or target of acquisitions. Our estimates for the total addressable launch market and satellite market are based on a number of internal and third-party estimates, including our contracted revenue, the number of potential customers who have expressed interest in our launch services, assumed prices and production costs for our launch vehicles, assumed flight cadence, our ability to leverage our current manufacturing and operational processes and general market conditions. While we believe our assumptions and the data underlying our estimates are reasonable at this date and time, these assumptions and estimates may not be correct and the conditions supporting our assumptions or estimates may change at any time, thereby reducing the predictive accuracy of these underlying factors. As a result, our estimates of the potential customers, annual total addressable market for our services, as well as the expected growth rate for the total addressable market for our services, may prove to be incorrect. Further should any of our customers be acquired by one of our competitors that could impact our future revenue and prospects as those customers may decide not to continue to purchase our launch services.

Our ability to grow our business depends on the successful development of our launch vehicles, spacecraft and related technology, which is subject to many uncertainties, some of which are beyond our control.

Our current primary research and development objectives focus on the development of our existing and any additional launch vehicles, launch facilities and capabilities, spacecraft and related technology. If we do not complete this development in our anticipated timeframes, or at all, our ability to grow our business will be adversely affected. The successful development of our launch and spacecraft capabilities and related technology involves many uncertainties, some of which are beyond our control, including, but not limited to:

- timing in making further enhancements to our launch vehicle and spacecraft design and specifications;
- successful completion of our planned commercial launches;
- our ability to obtain additional applicable approvals, licenses or certifications from regulatory agencies, if required, and maintaining current approvals, licenses or certifications;
- our ability to schedule and receive access to launch sites, receive related government approvals, launch windows, licenses, mandated insurance coverages, and aligned logistics of moving a rocket to, and launching from, rocket launch facilities;
- our ability to respond quickly enough to decisions of third-parties outside our control that can impact our launch schedules or launch operations;
- performance of our manufacturing facilities despite risks that disrupt productions, such as natural disasters and hazardous materials;
- performance of a limited number of suppliers for certain raw materials and supplied components;
- performance of our third-party contractors that support our research and development activities;
- our ability to maintain rights from third parties for intellectual properties critical to our research and development activities;
- our ability to continue funding and maintain our current research and development activities, particularly the development of various enhancements that increase the payload of our rocket; and
- the impact of the geopolitical crisis between Russia and Ukraine, and the COVID-19 pandemic on us, our customers, suppliers and distributors, and the global economy.

We routinely conduct hazardous operations in manufacturing, test, and launch of our vehicles, space products and vehicle subsystems, which could result in damage to property or persons. Unsatisfactory performance or failure of our manufacturing process, launch vehicles, space products, spacecraft and related technology at launch or during operation could have a material adverse effect on our business, financial condition and results of operation.

We manufacture and operate highly sophisticated launch vehicles, space products and conduct launch activities that depend on complex technology. Although there have been and will continue to be technological advances in spaceflight, our operations remain an inherently hazardous and risky activity. Launch failures, explosions and other accidents during manufacturing, on launch or during flight have occurred and will likely occur in the future.

While we have built operational processes to ensure that the design, manufacture, performance and servicing of our launch vehicles, space products and related technologies meet rigorous quality standards, there can be no assurance that we will not experience operational or process failures and other problems, including through manufacturing or design defects, cyber-attacks or other intentional acts, that could result in potential safety risks. We may experience a total loss of our launch vehicle and our customers' payloads if there is an accident or failure at launch or during the journey into space, which could have a material adverse effect on our results of operations and financial condition or reputation. For some missions, we or our customers can elect to buy launch insurance, which can reduce our monetary losses from any launch failure, but even in this case we will have losses associated with our inability to test our technology in space and delays with further technology development. Any insurance we or our customers have may not be adequate to cover our or their loss, respectively.

Any actual or perceived safety or reliability issues may result in significant reputational harm to our businesses, in addition to tort liability, maintenance, increased safety infrastructure and other costs that may arise. Such issues could result in delaying or cancelling planned launches, increased regulation or other systemic consequences. Our inability to meet our safety standards or adverse publicity affecting our reputation as a result of accidents, mechanical failures, damages to customer property or medical complications could have a material adverse effect on our business, financial condition and results of operation.

We may not be able to convert our estimated contracted revenue or potential contracts into actual revenue.

We expect that our success will be highly dependent on our ability to convert contracted revenues and our pipeline of potential contracts into actual revenues. Our contracted revenues and our estimated pipeline may not fully convert into actual revenues because

certain of our customers have the right to terminate their contracts if we do not achieve certain milestones, or other termination rights. We may not meet these milestones, in which case the value of our contracted revenues may be significantly lower than our current estimates.

Some of our existing customer contracts include provisions allowing the customers to terminate the contracts for convenience, some with a termination penalty for at least the amounts already paid, or to terminate the contracts for cause (for example, if we do not achieve certain milestones on a timely basis). If any of our significant customer contracts are terminated and not replaced, our results of operations may differ materially and adversely from those anticipated. In addition, our contracts with government customers often contain provisions with additional rights and remedies favorable to such customers that are not typically found in commercial contracts. As a result, we may not receive revenue from these orders, and any contracted revenue we report may not be indicative of our future actual revenue.

Many events may cause a delay in our ability to fulfill our existing or future orders, or cause planned launches or deliveries to not be completed at all, some of which may be out of our control, including unexpected weather patterns, maintenance issues, natural disasters, changes in governmental regulations or in the status of our regulatory approvals or applications or other events that force us to cancel or reschedule launches, which could have an adverse impact on our business, financial condition and results of operations.

We have limited data and history to test our launch vehicles for the successful deployment of a LEO satellite.

In November 2021, we successfully launched launch vehicle LV0007 to an inclination of 86.0 degrees at an altitude of 500 km and demonstrated orbital placement of test payload. Our data from this launch suggest that we achieve sufficient orbital velocity to successfully inject a satellite into orbit and serve as an opportunity to learn from the experience and to make further refinements to the design and manufacturing processes used to construct our launch vehicles and rockets. Although our November 2021 launch was a success, we may not be successful in reaching space and achieving sufficient orbital velocity during our subsequent launches planned. For example, on February 10, 2022, we launched launch vehicle LV0008. After a nominal first stage flight, the payload fairing did not fully deploy prior to the upper stage ignition due to an electrical issue which, together with a software issue, resulted in the upper stage not reaching orbit and the end of the mission. On March 15, 2022, we successfully launched launch vehicle LV0009 and confirmed our first delivery of customer payloads into Earth orbit. If we fail to continue to successfully inject payloads into orbit, our business, financial condition and results of operations could be materially and adversely impacted.

As part of our strategy, we plan to increase the maximum payload capacity of our launch vehicle to meet the customer needs and demands, which would make us a more compelling alternative for LEO constellation deployment and satellite replenishment. This payload capacity improvement will come from numerous improvements, enhancements and modifications to our rocket. We may not be successful in our efforts to make improvements to our rocket to achieve the full increase in payload capacity, and if we are unable to demonstrate our ability launch heavier satellites to LEO, our business, financial condition and results of operations could be materially and adversely impacted.

Any delays in the development and manufacture of additional launch vehicles, spacecraft, and related technology may adversely impact our business, financial condition, and results of operations.

We have previously experienced, and may experience in the future, delays or other complications in the design, manufacture, launch, production, delivery and servicing ramp of new launch vehicles, spacecraft and related technology. If delays like this arise or recur, if our remediation measures and process changes do not continue to be successful or if we experience issues with planned manufacturing improvements or design and safety, we could experience issues in sustaining the ramp of our spaceflight system or delays in increasing production further.

If we encounter difficulties in scaling our delivery or servicing capabilities, if we fail to develop and successfully commercialize our launch vehicles, spacecraft and related technologies, if we fail to develop such technologies before our competitors, or if such technologies fail to perform as expected, are inferior to those of our competitors or are perceived as less safe than those of our competitors, our business, financial condition and results of operations could be materially and adversely impacted.

We expect to face intense competition in the commercial space market and other industries in which we may operate.

We face intense competition in the commercial space market and amongst our competitors. Currently, our primary competitors in the commercial launch market are SpaceX, RocketLab, United Launch Alliance, and Arianespace. In addition, we are aware of a significant number of entities actively engaged in developing commercial launch capabilities for small and medium sized payloads, including Virgin Orbit, Relativity, ABL, and Firefly, among others. Many of our current and potential competitors are larger and have substantially greater financial or other resources than we currently have or expect to have in the future, and thus may be better positioned to exploit the market need for small payloads and targeted orbital delivery, which is the focus of our business. They may also be able to devote greater resources to the development of their current and future technologies, which could overlap with our technologies, or the promotion and sale of their products and services. Our competitors could offer small launch vehicles at lower prices, which could

undercut our business strategy and potential competitive edge. Our current and potential competitors may also establish cooperative or strategic relationships amongst themselves or with third parties that may further enhance their resources and offerings relative to ours. Further, it is possible that domestic or foreign companies or governments, some with greater experience in the aerospace industry or greater financial resources than we possess, will seek to provide products or services that compete directly or indirectly with ours in the future. Any such foreign competitor, for example, could benefit from subsidies from, or other protective measures by, its home country.

We believe our ability to compete successfully as a commercial provider of launch and space services does and will depend on number of factors, which may change in the future due to increased competition, including the price of our products and services, consumer satisfaction for the experiences we offer, and the frequency and availability of our products and services. If we are unable to compete successfully, our business, financial condition and results of operations could be adversely affected.

If we are unable to adapt to and satisfy customer demands in a timely and cost-effective manner, or if we are unable to manufacture our launch vehicles or space products at a quantity and quality that our customers demand, our ability to grow our business may suffer.

The success of our business depends in part on effectively managing and maintaining our commercial launch services, space products, manufacturing additional launch vehicles and spacecraft, conducting a sufficient number of launches to meet customer demand and providing customers with an experience that meets or exceeds their expectations. Even if we succeed in developing launch vehicles or producing space products consistent with our targeted timeline, we could thereafter fail to develop the ability to produce these vehicles or products at quantity with a quality management system that ensures that each unit performs as required. Any delay in our ability to produce launch vehicles or space products at rate and with a reliable quality management system could have a material adverse effect on our business.

If our current or future launch services or space products do not meet expected performance or quality standards, including with respect to customer safety and satisfaction, this could cause operational delays. Further, launch operations within restricted airspace requires advance scheduling and coordination with government agencies and range owners and other users, and any high priority national defense assets will have priority in the use of these resources, which may impact our cadence of our launch operations or could result in cancellations, launch facility transfers, additional costs or rescheduling. Any operational or manufacturing delays or other unplanned changes to our ability to conduct our launches or manufacture our products could have a material adverse effect on our business, financial condition and results of operations.

We may be unable to manage our future growth effectively, which could make it difficult to execute our business strategy.

If our operations continue to grow as planned, of which there can be no assurance, we will need to expand our sales and marketing, research and development, customer and commercial strategy, products and services, supply, and manufacturing and distribution functions. We will also need to continue to leverage our manufacturing and operational systems and processes, and there is no guarantee that we will be able to scale the business and the manufacture of spacecraft as currently planned or within the planned timeframe. The continued expansion of our business may also require additional manufacturing and operational facilities, as well as space for administrative support, and there is no guarantee that we will be able to find suitable locations or partners for the manufacture and operation of our launch vehicles.

Our continued growth could increase the strain on our resources, and we could experience operating difficulties, including difficulties in hiring, training and managing an increasing number of employees, finding manufacturing capacity to produce our launch vehicles, rockets, spacecraft, space products and related equipment, and delays in production and launches. These difficulties may result in the erosion of our brand image, divert the attention of management and key employees and impact financial and operational results. In addition, in order to continue to expand our presence around the globe, we expect to incur substantial expenses as we continue to attempt to streamline our manufacturing process, increase our launch cadence, hire more employees, and continue research and development efforts relating to new products and technologies and expand internationally. If we are unable to drive commensurate growth, these costs, which include lease commitments, headcount and capital assets, could result in decreased margins, which could have a material adverse effect on our business, financial condition and results of operations.

Adverse publicity stemming from any incident involving us, our competitors, or our customers could have a material adverse effect on our business, financial condition and results of operations.

We are at risk of adverse publicity stemming from any public incident involving our company, our people, or our brand, or our competitors or customers. If our launch vehicles, spacecraft or space products, those of one of our competitors, or satellites of our customers were to be involved in a public incident, accident, or catastrophe, this could create an adverse public perception of launch or manufacturing activities and result in decreased customer demand for launch and spacecraft services, which could cause a material adverse effect on our business, financial conditions, and results of operations. Further, if our launch vehicles or rockets were to be involved in a public incident, accident, or catastrophe, we could be exposed to significant reputational harm or potential legal liability. Any reputational harm to our business or industry could cause customers with existing contracts with us to cancel their contracts and

could significantly impact our ability to make future sales. The insurance we carry may be inapplicable or inadequate to cover any such incident, accident or catastrophe. In the event that our insurance is inapplicable or not adequate, we may be forced to bear substantial losses from such incident, adverse media, or accident.

We currently operate from a facility on a month-to-month lease.

The long-term lease for our headquarters in Alameda, California expired pending negotiations with the landlord, the City of Alameda. Following the expiration of our lease, we are currently operating with separate month-to-month leases applicable to each of the buildings on our Alameda campus, with letters of intent and license agreements in place with the city permitting us to occupy our existing facilities while we work to negotiate a long-term lease for the campus. While the City of Alameda has been a reliable lessor to date, we cannot assure that such arrangements will be available to us on terms similar to those we have with the City of Alameda moving forward or at all, or that our negotiations with the City of Alameda for a long-term lease will be successful. We have made significant investments in improving the facilities at our Alameda campus. If we cannot ultimately secure a long-term lease with the City of Alameda, we would need to continue to operate with the uncertainty associated with short term leasing arrangements, and may need to utilize cash resources from operations or raise additional capital in order to construct additional facilities in other locations. In the event we need to vacate our premises, we would need to secure other premises which could adversely impact employees, company operations, meeting customer deadlines and scheduling of our commercial launches and would be unable to recoup the investments we have made into improving the facilities at our Alameda campus. The impact to our company operations could result in the loss of customers and therefore lost revenues and harm to our reputation to win future customers.

Regulatory, availability, and other challenges may delay our progress in establishing the number of launch sites we require for our targeted annual launch rate, which could have an adverse effect on our ability to grow our business.

Part of our strategy involves increasing our launch capability and approaching a more frequent than monthly launch capability by 2025. Our ability to achieve a more frequent than monthly launch capability by 2025 will depend on our ability to add new launch sites. We currently operate launch sites at the Pacific Spaceport Complex in Kodiak, Alaska, and Cape Canaveral Space Force Station in Cape Canaveral, Florida, and we expect to enter into a variety of arrangements to secure additional launch sites, which may include ownership, leasing, licensing, and permitting in the United States and outside the United States. We have in the past and may in the future experience delays in our efforts to secure additional launch sites around the globe based upon our customers' inclination needs. Challenges as a result of regulatory processes or in our ability to secure the necessary permissions to establish these launch sites could delay our ability to achieve our target cadence and could adversely affect our business.

We rely on a limited number of suppliers for certain raw materials and supplied components. We may not be able to obtain sufficient raw materials or supplied components to meet our manufacturing and operating needs, or obtain such materials on favorable terms, which could impair our ability to fulfill our orders in a timely manner or increase our costs of production.

Our ability to manufacture our launch vehicles is dependent upon sufficient availability of raw materials and supplied components, which we secure from a limited number of suppliers. Our reliance on suppliers to secure these raw materials and supplied components exposes us to volatility in the prices and availability of these materials. We may not be able to obtain sufficient supply of raw materials or supplied components, on favorable terms or at all, which could result in delays in manufacture of our spacecraft or increased costs.

In addition, we have in the past and may in the future experience delays in manufacture or operation as we go through the requalification process with any replacement third-party supplier, as well as the limitations imposed by ITAR and other restrictions on transfer of sensitive technologies. Additionally, the imposition of tariffs on such raw materials or supplied components could have a material adverse effect on our operations. Prolonged disruptions in the supply of any of our key raw materials or components, difficulty qualifying new sources of supply, implementing use of replacement materials or new sources of supply or any volatility in prices could have a material adverse effect on our ability to operate in a cost-efficient, timely manner and could cause us to experience cancellations or delays of scheduled launches, customer cancellations or reductions in our prices and margins, any of which could harm our business, financial condition and results of operations.

Failure to maintain adequate financial, information technology and management processes and controls could result in material weaknesses which could lead to errors in our financial reporting, which could adversely affect our business, financial condition and results of operations

Astra, as a large accelerated filer would be subject to the SEC's internal control over financial reporting management and auditor attestation requirements for our next fiscal year ending December 31, 2022 if we continue to be a large accelerated filer as determined as of the end of June 30, 2022. We may not be able to complete our evaluation, testing and any required remediation in a timely fashion. In addition, our current controls and any new controls that we develop may become inadequate because of poor design and changes in our business, including increased complexity resulting from any international expansion. Any failure to implement and maintain effective internal controls over financial reporting could adversely affect the results of assessments by our independent registered public accounting firm and their attestation reports.

If we are unable to certify the effectiveness of our internal controls, or if our internal controls have material weaknesses, we may not detect errors in a timely manner, our financial statements could be misstated, we could be subject to regulatory scrutiny and a loss of confidence by stakeholders, which could harm our business, financial condition and results of operations and adversely affect the market price of our securities.

We have identified material weaknesses in our internal control over financial reporting and may identify additional material weaknesses in the future or otherwise fail to maintain an effective system of internal control, which may result in material misstatements of our financial statements or cause us to fail to meet our periodic reporting obligations.

We have identified material weaknesses in our internal control over financial reporting as of and for the years ended December 31, 2021 and 2020. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. Please See Item 9A - Control and Procedures for more information about identified material weaknesses.

We are in the process of designing and implementing measures to improve our internal control over financial reporting to remediate the material weaknesses described above, primarily by implementing additional review procedures within our accounting and finance department, hiring additional personnel within the Company's accounting and finance function, designing and implementing information technology and application controls in our financially significant systems, providing internal resources with enhanced access to accounting literature and research materials, engaging additional external accounting experts to supplement our internal resources and increasing communication with third-party professionals with whom we consult regarding the application of accounting standards on complex transactions and instruments. While we are designing and implementing measures to remediate the material weaknesses, we cannot predict the success of such measures or the outcome of our assessment of these measures at this time. We can give no assurance that these measures will remediate the weaknesses in internal control or that additional material weaknesses or significant deficiencies in our internal control over financial reporting will not be identified in the future. Our failure to implement and maintain effective internal control over financial reporting could result in errors in our financial statements that may lead to a restatement of our financial statements or cause us to fail to meet our reporting obligations.

As a public company, we are required, pursuant to Section 404 of the Sarbanes-Oxley Act, to furnish a report by management on, among other things, the effectiveness of our internal control over financial reporting for each annual report on Form 10-K to be filed with the SEC, and must be compliant, for the first time, in the year ended December 31, 2022. This assessment will require disclosure of any material weaknesses identified by our management in our internal control over financial reporting. We are required to disclose changes made in our internal control and our financial reporting procedures on a quarterly basis. To comply with the requirements of being a public company, we expect to need to undertake various actions, such as implementing new internal controls and procedures and hiring accounting or internal audit staff. Failure to comply with the Sarbanes-Oxley Act could potentially subject us to sanctions or investigations by the SEC, Nasdaq or other regulatory authorities, which would require additional financial and management resources.

We may face litigation and other risks as a result of the material weaknesses in our internal control over financial reporting and the restatement of our financial statements.

The Company, in consultation with the Audit Committee and Company's management, determined that it was appropriate to restate our previously filed financial statements for the period ended June 30, 2021. As part of the restatement, we identified a material weakness in our internal control over financial reporting.

As a result of such material weakness and such restatement, we face potential for litigation or other disputes which may include, among others, claims invoking the federal and state securities laws, contractual claims or other claims arising from the restatement and material weaknesses in our internal control over financial reporting and the preparation of our financial statements. As of the date of this Form 10-K, Astra is currently a defendant in two actions alleging violations of federal securities laws. Please see Item 3: Legal Proceedings for more information about these actions. We can provide no assurance that additional litigation or dispute will not arise in the future. Any such litigation or dispute, whether successful or not, could have a material adverse effect on our business, results of operations and financial condition.

We are subject to environmental regulation and may incur substantial costs or have operational disruptions.

We are subject to federal, state, local, and foreign laws, regulations and ordinances relating to the protection of the environment, including those relating to emissions to the air, discharges to surface and subsurface waters, safe drinking water, greenhouse gases and the management of hazardous substances, oils and waste materials. Federal, state and local laws and regulations relating to the protection of the environment may require a current or previous owner or operator of real estate to investigate and remediate hazardous or toxic substances or petroleum product releases at or from the property which could result in operational disruptions. Under federal law, generators of waste materials, and current and former owners or operators of facilities, can be subject to liability for investigation and remediation costs at locations that have been identified as requiring response actions. Compliance with environmental laws and

regulations can require significant expenditures. In addition, we could incur costs or have operational disruptions to comply with such current or future laws and regulations, the violation of which could lead to substantial fines, penalties and operational costs.

We may have to pay governmental entities or third parties for property damage and for investigation and remediation costs that they incurred in connection with any contamination at our current and former properties without regard to whether we knew of or caused the presence of the contaminants. We may also have to suspend operations until we have remediated and the investigation is closed. Liability under these laws may be strict, joint and several, meaning that we could be liable for the costs of cleaning up environmental contamination regardless of fault or the amount of waste directly attributable to us. Even if more than one person may have been responsible for the contamination, each person covered by these environmental laws may be held responsible for all of the clean-up costs incurred. Environmental liabilities could arise and have a material adverse effect on our financial condition and performance. We do not believe, however, that pending environmental regulatory developments in this area will have a material effect on our capital expenditures or otherwise materially adversely affect its operations, operating costs, or competitive position.

The COVID-19 pandemic has and could continue to negatively affect various aspects of our business, make it more difficult for us to meet our obligations to our customers, and result in reduced demand for our products and services.

In December 2019, a novel strain of coronavirus was reported to have surfaced in Wuhan, China, and it has since spread throughout other parts of the world, including the United States. Any outbreak of contagious diseases or other adverse public health developments could have a material adverse effect on our business operations. These impacts to our operations have included, and could again in the future include, disruptions or restrictions on the ability of our employees' and customers' to travel or our ability to pursue collaborations and other business transactions, travel to customers and/or conduct live demonstrations of our products and oversee the activities of our third-party manufacturers and suppliers. We may also be impacted by the temporary closure of the facilities of suppliers, manufacturers or customers.

In an effort to halt the outbreak of COVID-19, a number of countries, including the United States, had placed significant restrictions on travel and many businesses had announced extended closures. These travel restrictions and business closures had adversely impacted our operations, including our ability to manufacture, market, sell, or distribute our products. Such restrictions and closure had caused temporary closures of the facilities of our suppliers, manufacturers or customers.

Beginning in the first quarter of 2021, there has been a trend in many parts of the world of increasing availability and administration of vaccines against COVID-19, as well as an easing of restrictions on social, business, travel and government activities and functions. On the other hand, infection rates and regulations continue to fluctuate in various regions and there are ongoing global impacts resulting from the pandemic, including challenges and increases in costs for logistics and supply chains, such as increased intermittent supplier delays and a shortfall of semiconductor supply. We have also previously been affected by employment and compensation adjustments, and impediments to administrative activities supporting our product deliveries and deployments.

Ultimately, we cannot predict the duration of the COVID-19 pandemic. We will continue to monitor macroeconomic conditions to remain flexible and to optimize and evolve our business as appropriate and deploy our production, workforce and other resources accordingly. In addition, a significant outbreak of contagious diseases in the human population could result in a widespread health crisis that could adversely affect the economies and financial markets of many countries, resulting in an economic downturn that could affect demand for our products and adversely impact our operating results.

We may experience difficulties in integrating the operations of acquired companies into our business and in realizing the expected benefits of these acquisitions.

Acquisitions involve numerous risks, any of which could harm our business and negatively affect our financial condition and results of operations. The success of our acquisitions will depend in part on our ability to realize the anticipated business opportunities from combining their and our operations in an efficient and effective manner. These integration processes could take longer than anticipated and could result in the loss of key employees, the disruption of each company's ongoing businesses, tax costs or inefficiencies, or inconsistencies in standards, controls, information technology systems, procedures and policies, any of which could adversely affect our ability to maintain relationships with customers, employees or other third parties, or our ability to achieve the anticipated benefits of the acquisitions, and could harm our financial performance. If we are unable to successfully or timely integrate the operations of acquired company with our business, we may incur unanticipated liabilities and be unable to realize the revenue growth, synergies and other anticipated benefits resulting from the acquisitions, or fully offset the costs of the acquisition, and our business, results of operations and financial condition could be materially and adversely affected.

A failure of our information technology systems, physical or electronic security protections, or an interruption in their operation due to internal or external factors including cyber-attacks or insider threats, could have a material adverse effect on our business, financial condition or results of operations.

Our operations are dependent on our ability to protect our employees, business systems, manufacturing capabilities, information systems, computer equipment and information databases from systems failures or malicious acts. We rely on both internal information technology systems, physical controls and policies, and certain external services and service providers to manage the day-to-day operation of our business, operate elements of our manufacturing facilities, manage relationships with our employees, customers and suppliers, fulfill customer orders and maintain our financial and accounting records. Failure of any one or more than one of our systems could be caused by internal or external events, such as incursions by intruders or hackers, physical intrusion or act, insider threats, computer viruses, cyber-attacks, failures in hardware or software, or power or telecommunication fluctuations or failures. The failure of our information technology systems to perform as anticipated for any reason or any significant breach of security could disrupt our business and result in numerous adverse consequences, including reduced effectiveness and efficiency of operations, increased costs or loss of important information or capabilities, any of which could have a material adverse effect on our business, financial condition or results of operations. We have technology and information security processes, security and threat assessment plans and safeguards and periodic external service and service provider reviews in place to mitigate our risk to these vulnerabilities. However, these measures may not be adequate to ensure that our operations will not be disrupted or our financial impact minimized, should such an event occur.

The ongoing military action by Russia in Ukraine could have negative impact on the global economy which could materially adversely affect our business, operations, operating results and financial condition.

On February 24, 2022, Russian forces launched significant military action against Ukraine, and sustained conflict and disruption in the region is possible. The impact to Ukraine as well as actions taken by other countries, including new and stricter sanctions imposed by Canada, the United Kingdom, the European Union, the U.S. and other countries and companies and organizations against officials, individuals, regions, and industries in Russia and Ukraine, and actions taken by Russia in response to such sanctions, and each country's potential response to such sanctions, tensions, and military actions could adversely affect the global economy and financial markets and thus could affect our business, operations, operating results and financial condition as well as the price of our common stock. The extent and duration of the military action, sanctions and resulting market disruptions are impossible to predict, but could be substantial. Any such disruptions caused by Russian military action or resulting sanctions may magnify the impact of other risks described in this Annual Report on Form 10-K, including impacting our ability to provide timely launch services to our customers or delaying our customers' plans to use our services.

Certain future operational facilities will require significant expenditures in capital improvements and operating expenses to develop and foster basic levels of service required by our launch and space services, and the ongoing need to maintain existing operational facilities requires us to expend capital.

We operate out of our headquarters in Alameda, California, which consists of approximately 285,000 square feet leased from the City of Alameda. The campus includes two primary buildings. This includes the Skyhawk Development and Production Facility, with a fully built out machine shop, production facilities, and offices for administrative responsibilities as well as research and development, and the Orion Engine Testing Facility for rocket engine testing, research, and development that was originally constructed by the U.S. Navy for jet engine testing. As part of our growth strategy, we anticipate finishing out additional space in the Skyhawk Development and Production Facility to support the launch services offerings, as well as the build out of facilities for our space services offerings.

The building out of our Alameda campus and the construction of additional launch sites may require significant capital expenditures to develop, and in the future we may be required to make similar expenditures to expand, improve or construct adequate facilities for our launch services. In addition, there is no guarantee that we will be able to secure a long-term lease from the City of Alameda for our Alameda campus. In addition, as our Alameda campus and any other facilities we may utilize mature, our business will require capital expenditures for the maintenance, renovation and improvement of such existing locations to remain competitive. This creates an ongoing need for capital, and, to the extent we cannot fund capital expenditures from cash flows from operations, we will need to borrow or otherwise obtain funds. If we cannot access the capital we need, we may not be able to execute on our growth strategy, take advantage of future opportunities or respond to competitive pressures. If the costs of funding new locations or renovations or enhancements at existing locations exceed budgeted amounts or the time for building or renovation is longer than anticipated, our business, financial condition and results of operations could be materially adversely affected.

Failure of third-party contractors and suppliers could adversely affect our business.

We are dependent on various third-party contractors and suppliers to develop and provide certain of our components of our launch vehicles and space products and to provide critical services to our business operations. Should we experience complications with any of these components, which are critical to the operation of our launch vehicle or space products, we may need to delay our manufacturing activities or delay or cancel scheduled launches. We face the risk that any of our contractors and suppliers may not fulfill their contracts and deliver their products or services on a timely basis, or at all. We have in the past experienced, and may in the future experience,

operational complications with our contractors and suppliers. The ability of our contractors and suppliers to effectively satisfy our requirements could also be impacted by such contractors' and suppliers' financial difficulty or damage to their operations caused by fire, terrorist attack, natural disaster or other events or our contractors' and suppliers' staffing challenges. The failure of any contractors and suppliers to perform to our expectations could result in shortages of certain manufacturing or operational components for our spacecraft or delays in spaceflights or the provision of critical services to us, all of which could harm our business. Our reliance on contractors and suppliers and inability to fully control any operational difficulties with our third-party contractors and suppliers, including their inability to timely provide us products and services necessary to our business operations, could have a material adverse effect on our business, financial condition and results of operations.

We may require substantial additional funding to finance our operations, but adequate additional financing may not be available when we need it, on acceptable terms or at all.

Since our inception, we have financed our operations and capital expenditures primarily through raising venture equity, public and private financing. In the future, we could be required to raise capital through public or private financing or other arrangements. Such financing may not be available on acceptable terms, or at all, and our failure to raise capital when needed could harm our business. We may sell equity securities or debt securities in one or more transactions at prices and in a manner as we may determine from time to time. If we sell any such securities in subsequent transactions, our current investors may be materially diluted. Any debt financing, if available, may involve restrictive covenants, could have pre-payment penalties and could reduce our operational flexibility or profitability. We may be required to delay, limit, reduce or terminate our development activities or future commercialization efforts. If we are unable to generate such additional funding, or if we are unable to do so on favorable terms, we may not be able to meet our liquidity needs and ultimately generate positive cash flows on our anticipated timeline or at all.

Our business is subject to a wide variety of extensive and evolving government laws and regulations. Failure to comply with such laws and regulations could have a material adverse effect on our business.

We are subject to a wide variety of laws and regulations relating to various aspects of our business, including with respect to our launch system operations, employment and labor, health care, tax, privacy and data security, health and safety, and environmental issues. Laws and regulations at the foreign, federal, state and local levels frequently change, especially in relation to new and emerging industries, and we cannot always reasonably predict the impact from, or the ultimate cost of compliance with, current or future regulatory or administrative changes. We monitor these developments and devote a significant amount of management's time and external resources towards compliance with these laws, regulations and guidelines, and such compliance places a significant burden on management's time and other resources, and it may limit our ability to expand into certain jurisdictions. Moreover, changes in law, the imposition of new or additional regulations or the enactment of any new or more stringent legislation that impacts our business could require us to change the way we operate and could have a material adverse effect on our sales, profitability, cash flows and financial condition.

Failure to comply with these laws, such as with respect to obtaining and maintaining licenses, certificates, authorizations and permits critical for the operation of our business, may result in civil penalties or private lawsuits, or the suspension or revocation of licenses, certificates, authorizations or permits, which would prevent us from operating our business. For example, conducting commercial space launches in the United States require licenses and permits from certain agencies of the Department of Transportation, including the FAA, and review by other agencies of the U.S. Government, including the Department of Defense, Department of State, NASA, and FCC. License approval includes an interagency review of safety, operational, national security, and foreign policy and international obligations implications, as well as a review of foreign ownership. Delays in FAA action allowing us to conduct commercial space launches could adversely affect our ability to operate our business and our financial results.

Moreover, regulation of our industry is still evolving, and new or different laws or regulations could affect our operations, increase direct compliance costs for us or cause any third-party suppliers or contractors to raise the prices they charge us because of increased compliance costs. Application of these laws to our business may negatively impact our performance in various ways, limiting the collaborations we may pursue, further regulating the export and re-export of our products, services, and technology from the United States and abroad, and increasing our costs and the time necessary to obtain required authorization. The adoption of a multi-layered regulatory approach to any one of the laws or regulations to which we are or may become subject, particularly where the layers are in conflict, could require alteration of our manufacturing processes or operational parameters which may adversely impact our business. We may not be in complete compliance with all such requirements at all times and, even when we believe we are in complete compliance, a regulatory agency may determine that we are not. The timing of our launches depends on our ability to secure regulatory licenses from the FAA and the FCC, and no company has yet conducted licensed launches at the annual rate we are targeting.

We aim to mass-produce the world's first daily space delivery system. A component of our near-term strategy involves increasing our launch cadence by accelerating our development and production efforts and adding additional launch sites. Our ability to achieve this increased launch cadence within the timeframe in which we hope to do so will depend on our ability to secure the necessary regulatory licenses from the FAA, the FCC and other regulatory authorities. To our knowledge, the applicable regulatory authorities to date have not granted such licenses to a company endeavoring to launch rockets with such frequency, and as a result our business is

dependent upon a regulatory framework that is untested and unprecedented. Our failure to obtain the licenses necessary to support our anticipated launch cadence, or any delays or hurdles that present in our interactions with the FAA, the FCC or other regulatory authorities, could impact our ability to grow our business, could delay our ability to execute on our existing and future customer contracts and could adversely affect our business and results of operations.

We are subject to stringent U.S. export and import control laws and regulations.

Our business is subject to stringent U.S. import and export control laws and regulations as well as economic sanctions laws and regulations. We are required to import and export our products, software, technology and services, as well as run our operations in the United States, in full compliance with such laws and regulations, which include the EAR, the ITAR, and economic sanctions administered by the Treasury Department's OFAC. Similar laws that impact our business exist in other jurisdictions. These foreign trade controls prohibit, restrict, or regulate our ability to, directly or indirectly, export, deemed export, re-export, deemed re-export or transfer certain hardware, technical data, technology, software, or services to certain countries and territories, entities, and individuals, and for end uses. If we are found to be in violation of these laws and regulations, it could result in civil and criminal, monetary and non-monetary penalties, the loss of export or import privileges, debarment and reputational harm.

Pursuant to these foreign trade control laws and regulations, we are required, among other things, to (i) maintain a registration under the ITAR, (ii) determine the proper licensing jurisdiction and export classification of products, software, and technology, and (iii) obtain licenses or other forms of U.S. government authorization to engage in the conduct of our spaceflight business. The authorization requirements include the need to get permission to release controlled technology to foreign person employees and other foreign persons. Changes in U.S. foreign trade control laws and regulations, or reclassifications of our products or technologies, may restrict our operations. The inability to secure and maintain necessary licenses and other authorizations could negatively impact our ability to compete successfully or to operate our spaceflight business as planned. Any changes in the export control regulations or U.S. government licensing policy, such as those necessary to implement U.S. government commitments to multilateral control regimes, may restrict our operations. Given the great discretion the government has in issuing or denying such authorizations to advance U.S. national security and foreign policy interests, there can be no assurance we will be successful in our future efforts to secure and maintain necessary licenses, registrations, or other U.S. government regulatory approvals.

Under the "Exon-Florio Amendment" to the U.S. Defense Production Act of 1950, as amended (the "DPA"), the U.S. President has the power to disrupt or block certain foreign investments in U.S. businesses if he determines that such a transaction threatens U.S. national security. The Committee on Foreign Investment in the United States ("CFIUS") has been delegated the authority to conduct national security reviews of certain foreign investments. CFIUS may impose mitigation conditions to grant clearance of a transaction.

The Foreign Investment Risk Review Modernization Act ("FIRRMA"), enacted in 2018, amended the DPA to, among other things, expands CFIUS's jurisdiction beyond acquisitions of control of U.S. businesses. Under FIRRMA, CFIUS also has jurisdiction over certain foreign non-controlling investments in U.S. businesses that have involvement with critical technology or critical infrastructure, or that collect and maintain sensitive personal data of U.S. citizens ("TID U.S. Businesses"), if the foreign investor receives specified triggering rights in connection with its investment. We are a TID U.S. Business because we develop and design technologies that would be considered critical technologies. Certain foreign investments in TID U.S. Businesses are subject to mandatory filing with CFIUS. These restrictions on the ability of foreign persons to invest in us could limit our ability to engage in strategic transactions that could benefit our stockholders, including a change of control, and could also affect the price that an investor may be willing to pay for our common stock.

Natural disasters, unusual weather conditions, epidemic outbreaks, global health crises, terrorist acts and political events could disrupt our business and flight schedule.

The occurrence of one or more natural disasters such as tornadoes, hurricanes, fires, floods and earthquakes, unusual weather conditions, epidemic outbreaks, terrorist attacks or disruptive political events in certain regions where our facilities are located, or where our third-party contractors' and suppliers' facilities are located, could adversely affect our business, financial condition and results of operations. Severe weather, such as rainfall, snowfall or extreme temperatures, may impact the ability of our launch services to be carried out as planned, resulting in additional expense to reschedule such service, thereby reducing our sales and profitability. Terrorist attacks, actual or threatened acts of war or the escalation of current hostilities, or any other military or trade disruptions impacting our domestic or foreign suppliers of components of our products, may impact our operations by, among other things, causing supply chain disruptions and increases in commodity prices, which could adversely affect our raw materials or transportation costs. These events also could cause or act to prolong an economic recession in the United States or abroad. These events also could impact one or more of our suppliers or contractors or result in the closure of any of their facilities or our facilities, which would make it difficult to continue our commercial launch activities as planned or thereafter increase our launch cadence. These events may also delay our customers' plans to launch their payloads. In addition, the disaster recovery and business continuity plans we have in place currently are limited and are unlikely to prove adequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans and, more generally, any of these events could cause consumer confidence and spending to decrease, which could adversely impact our commercial launch operations.

Our prospects and operations may be adversely affected by changes in consumer preferences and economic conditions that affect demand for launch or space services.

Because our offerings are currently concentrated on commercial launch and space services, we are vulnerable to changes in consumer preferences or other market changes. The global economy has in the past, and will in the future, experience recessionary periods and periods of economic instability. During such periods, our potential customers may choose not to expend the amounts that we anticipate based on our expectations with respect to the addressable market for launch and space services. There could be a number of other effects from adverse general business and economic conditions on our business, including insolvency of any of our third-party suppliers or contractors, decreased consumer confidence, decreased discretionary spending and reduced customer or governmental demand for LEO launch vehicles and satellites, which could have a material adverse effect on our business, financial condition and results of operations.

We may in the future invest significant resources in developing new service offerings and exploring the application of our proprietary technologies for other uses and those opportunities may never materialize.

While our primary focus for the foreseeable future will be on commencing our commercial launch activities, increasing our launch cadence and increasing the payload capacity of our rockets, we may also invest significant resources in developing new technologies, services, products and offerings including space services offerings. However, we may not realize the expected benefits of these investments. These anticipated technologies are unproven and these products or technologies may never materialize or be commercialized in a way that would allow us to generate ancillary revenue streams. Relatedly, if such technologies become viable offerings in the future, we may be subject to competition from our competitors within the commercial launch and satellite industries, some of which may have substantially greater monetary and knowledge resources than we have and expect to have in the future to devote to the development of these technologies. Such competition or any limitations on our ability to take advantage of such technologies could impact our market share, which could have a material adverse effect on our business, financial condition and results of operations.

Such research and development initiatives may also have a high degree of risk and involve unproven business strategies and technologies with which we have limited operating or development experience. They may involve claims and liabilities (including, but not limited to, personal injury claims), expenses, regulatory challenges and other risks that we may not be able to anticipate. There can be no assurance that customer demand for such initiatives will exist or be sustained at the levels that we anticipate, or that any of these initiatives will gain sufficient traction or market acceptance to generate sufficient revenue to offset any new expenses or liabilities associated with these new investments. Further, any such research and development efforts could distract management from current operations, and would divert capital and other resources from our more established offerings and technologies. Even if we were to be successful in developing new products, services, offerings or technologies, regulatory authorities may subject us to new rules or restrictions in response to our innovations that may increase our expenses or prevent us from successfully commercializing new products, services, offerings or technologies.

If we commercialize outside the United States, we will be exposed to a variety of risks associated with international operations that could materially and adversely affect our business.

As part of our growth strategy for our launch services, we aim to identify launch sites outside of the United States. As we expand internationally, we expect that we would be subject to additional risks related to entering into international business relationships, including:

- restructuring our operations to comply with local regulatory regimes;
 - identifying, hiring and training highly skilled personnel in foreign jurisdictions to the extent required;
 - unexpected changes in tariffs, trade barriers and regulatory requirements, including through the ITAR, Export Administration Regulations ("EAR"), and Office of Foreign Assets Control ("OFAC");
 - economic weakness, including inflation, or political instability in foreign economies and markets;
 - compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
 - foreign taxes, including withholding of payroll taxes;
 - the need for U.S. government approval to operate our space systems outside the United States;
 - foreign currency fluctuations, which could result in increased operating expenses and reduced revenue;
 - government appropriation of assets;
 - workforce uncertainty in countries where labor unrest is more common than in the United States; and
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- disadvantages of competing against companies from countries that are not subject to U.S. laws and regulations, including the U.S. Foreign Corrupt Practices Act, OFAC regulations and U.S. anti-money laundering regulations, as well as exposure of our foreign operations to liability under these regulatory regimes.

Failures in our technology infrastructure could damage our business, reputation and brand and substantially harm our business and results of operations.

If our main data center were to fail, or if we were to suffer an interruption or degradation of services at our main data center, we could lose important manufacturing and technical data, which could harm our business. We are vulnerable to damage or interruption from earthquakes, hurricanes, floods, fires, cyber security attacks including ransomware incidents, terrorist attacks, actual or threatened acts of war, power losses, telecommunications failures and similar events. In the event that our or any third-party provider's systems or service abilities are hindered by any of the events discussed above, our ability to operate may be impaired. A decision to close the facilities without adequate notice, or other unanticipated problems, could adversely impact our operations. Any of the aforementioned risks may be augmented if our or any third-party provider's business continuity and disaster recovery plans prove to be inadequate. The facilities also could be subject to break-ins, computer viruses, sabotage, intentional acts of vandalism and other misconduct. Any security breach, including personal data breaches, or incident, including cybersecurity incidents, that we experience could result in unauthorized access to, misuse of or unauthorized acquisition of our or our customers' data, the loss, corruption or alteration of this data, interruptions in our operations or damage to our computer hardware or systems or those of our customers. Moreover, negative publicity arising from these types of disruptions could damage our reputation. We may not carry sufficient business interruption insurance to compensate us for losses, exclusions may apply, that may occur as a result of any events that cause interruptions in our service. Significant unavailability of our services due to attacks could cause users to cease using our services and materially and adversely affect our business, prospects, financial condition and results of operations.

Any acquisitions, partnerships or joint ventures that we enter into could disrupt our operations.

From time to time, we may evaluate potential strategic acquisitions of businesses, including partnerships or joint ventures with third parties. We may not be successful in identifying acquisition, partnership and joint venture candidates. In addition, we may not be able to continue the operational success of such businesses or successfully finance or integrate any businesses that we acquire or with which we form a partnership or joint venture. We may have potential write-offs of acquired assets and/or an impairment of any goodwill recorded as a result of acquisitions. Furthermore, the integration of any acquisition may divert management's time and resources from our core business and disrupt our operations or may result in conflicts with our business. Any acquisition, partnership or joint venture may not be successful, may reduce our cash reserves, may negatively affect our earnings and financial performance and, to the extent financed with the proceeds of debt, may increase our indebtedness. We cannot ensure that any acquisition, partnership or joint venture we make will not have a material adverse effect on our business, financial condition and results of operations.

We are subject to many hazards and operational risks that can disrupt our business, including interruptions or disruptions in service at our primary facilities, which could have a material adverse effect on our business, financial condition and results of operations.

Our operations are subject to many hazards and operational risks inherent to our business, including general business risks, product liability and damage to third parties, our infrastructure or properties that may be caused by fires, floods and other natural disasters, power losses, telecommunications failures, terrorist attacks, human errors and similar events. Additionally, our manufacturing operations are hazardous at times and may expose us to safety risks, including environmental risks and health and safety hazards to our employees or third parties.

Moreover, our operations are primarily based in and around our Alameda, California campus, where our machine shop, production facilities, administrative offices, and research and development functions are located. Our Alameda, California campus also houses our facility used for rocket engine testing, research, and development. In addition, we also operate a facility in Mountain View, California and launch facilities in Kodiak, Alaska and Cape Carnival, Florida. Any significant interruption due to any of the above hazards and operational to the manufacturing or operation of our facilities, including from weather conditions, growth constraints, performance by third-party providers (such as electric, utility or telecommunications providers), failure to properly handle and use hazardous materials, failure of computer systems, power supplies, fuel supplies, infrastructure damage, disagreements with the owners of the land on which our facilities are located, or damage sustained to our launch pad could result in manufacturing delays or the delay or cancellation of our planned commercial launches and, as a result, could have a material adverse effect on our business, financial condition and results of operations.

In addition, our insurance coverage may be inadequate to cover our liabilities related to such hazards or operational risks. Moreover, we may not be able to maintain adequate insurance in the future at rates we consider reasonable and commercially justifiable, and insurance may not continue to be available on terms as favorable as our current arrangements. The occurrence of a significant uninsured claim, or a claim in excess of the insurance coverage limits maintained by us, could harm our business, financial condition and results of operations.

If we fail to adequately protect our proprietary intellectual property rights, our competitive position could be impaired and we may lose valuable assets, generate reduced revenue and incur costly litigation to protect our rights.

Our success depends, in part, on our ability to protect our proprietary intellectual property rights, including certain methodologies, practices, tools, technologies and technical expertise we utilize in designing, developing, implementing and maintaining applications and processes used in our launch systems and related technologies. To date, we have relied primarily on trade secrets and other intellectual property laws, non-disclosure agreements with our employees, consultants and other relevant persons, and other measures to protect our intellectual property, and intend to continue to rely on these and other means, including patent protection. However, the steps we take to protect our intellectual property may be inadequate, and we may choose not to pursue or maintain protection for our intellectual property in the United States or foreign jurisdictions. We will not be able to protect our intellectual property if we are unable to enforce our rights or if we do not detect unauthorized use of our intellectual property. Despite our precautions, it may be possible for unauthorized third parties to copy our technology and use information that we regard as proprietary to create technology that competes with ours.

Further, the laws of some countries do not protect proprietary rights to the same extent as the laws of the United States, and mechanisms for enforcement of intellectual property rights in some foreign countries may be inadequate. To the extent we expand our international activities, our exposure to unauthorized copying and use of our technologies and proprietary information may increase. Accordingly, despite our efforts, we may be unable to prevent third parties from infringing upon, misappropriating or otherwise violating our technology and intellectual property.

We rely in part on trade secrets, proprietary know-how and other confidential information to maintain our competitive position. Although we enter into non-disclosure and invention assignment agreements with our employees, enter into non-disclosure agreements with our customers, consultants and other parties with whom we have strategic relationships and business alliances and enter into intellectual property assignment agreements with our consultants and vendors, no assurance can be given that these agreements will be effective in controlling access to and distribution of our technology and proprietary information. Further, these agreements do not prevent our competitors from independently developing technologies that are substantially equivalent or superior to our products.

Protecting and defending against intellectual property claims may have a material adverse effect on our business.

Our success depends in part upon successful prosecution, maintenance, enforcement and protection of our owned and licensed intellectual property.

To protect our intellectual property rights, we may be required to spend significant resources to monitor and protect these rights. Litigation may be necessary in the future to enforce our intellectual property rights and to protect our trade secrets. Such litigation could be costly, time consuming and distracting to management and could result in the impairment or loss of portions of our intellectual property. Furthermore, our efforts to enforce our intellectual property rights may be met with defenses, counterclaims and countersuits attacking the validity and enforceability of our intellectual property rights. Our inability to protect our proprietary technology, as well as any costly litigation or diversion of our management's attention and resources, could disrupt our business, as well as have a material adverse effect on our financial condition and results of operations. The results of intellectual property litigation are difficult to predict and may require us to stop using certain technologies or offering certain services or may result in significant damage awards or settlement costs. There is no guarantee that any action to defend, maintain or enforce our owned or licensed intellectual property rights will be successful, and an adverse result in any such proceeding could have a material adverse impact on our business, financial condition, operating results and prospects.

In addition, we may from time-to-time face allegations that we are infringing, misappropriating or otherwise violating the intellectual property rights of third parties, including the intellectual property rights of our competitors. We may be unaware of the intellectual property rights that others may claim cover some or all of our technology or services. Irrespective of the validity of any such claims, we could incur significant costs and diversion of resources in defending against them, and there is no guarantee any such defense would be successful, which could have a material adverse effect on our business, contracts, financial condition, operating results, liquidity and prospects.

Even if these matters do not result in litigation or are resolved in our favor or without significant cash settlements, these matters, and the time and resources necessary to litigate or resolve them, could divert the time and resources of our management team and harm our business, our operating results and our reputation.

The majority of our customer contracts may be terminated by the customer at any time for convenience as well as other provisions permitting the customer to discontinue contract performance for cause (for example, if we do not achieve certain milestones on a timely basis) which if terminated could adversely impact our results of operation.

We are subject to a variety of contract-related risks. Some of our existing customer contracts, including those with the government, include provisions allowing the customers to terminate their contracts for convenience, with a termination penalty for at least the amounts already paid, or to terminate the contracts for cause (for example, if we do not achieve certain milestones on a timely basis). Customers

that terminate such contracts may also be entitled to a pro rata refund of the amount of the customer's deposit. In addition, some of our customers are pre-revenue startups or otherwise not fully established companies, which exposes us to a degree of counterparty credit risk.

Part of our strategy is to market our launch services to key government customers. We expect we may derive limited revenue from contracts with National Aeronautics and Space Administration ("NASA") and the U.S. government and may enter into further contracts with the U.S. or foreign governments in the future, and this subjects us to statutes and regulations applicable to companies doing business with the U.S. government, including the Federal Acquisition Regulation ("FAR"). These U.S. government contracts customarily contain provisions that give the government substantial rights and remedies, many of which are not typically found in commercial contracts and which are unfavorable to contractors. For instance, most U.S. government agencies include provisions that allow the government to unilaterally terminate or modify contracts for convenience, in which case the counterparty to the contract may generally recover only its incurred or committed costs and settlement expenses and profit on work completed prior to the termination. If the government terminates a contract for default, the defaulting party may be liable for any extra costs incurred by the government in procuring undelivered items from another source.

Our government contracts may be subject to the approval of appropriations being made by the U.S. Congress to fund the expenditures under these contracts. In addition, government contracts normally contain additional requirements that may increase our costs of doing business, reduce our profits, and expose us to liability for failure to comply with these terms and conditions. These requirements include, for example:

- specialized disclosure and accounting requirements unique to government contracts;
- financial and compliance audits that may result in potential liability for price adjustments, recoupment of government funds after such funds have been spent, civil and criminal penalties, or administrative sanctions such as suspension or debarment from doing business with the U.S. government;
- public disclosures of certain contract and company information; and
- mandatory socioeconomic compliance requirements, including labor requirements, non-discrimination and affirmative action programs and environmental compliance requirements.

Government contracts are also generally subject to greater scrutiny by the government, which can initiate reviews, audits and investigations regarding our compliance with government contract requirements. In addition, if we fail to comply with government contract laws, regulations and contract requirements, our contracts may be subject to termination, and we may be subject to financial and/or other liability under our contracts, the Federal Civil False Claims Act (including treble damages and other penalties), or criminal law. In particular, the False Claims Act's "whistleblower" provisions also allow private individuals, including present and former employees, to sue on behalf of the U.S. government. Any penalties, damages, fines, suspension, or damages could adversely affect our ability to operate our business and our financial results.

If any customer were to unexpectedly terminate, cancel, or decline to exercise an option to renew with respect to one or more of our significant contracts for any reason, including as a result of our failure to meet certain performance milestones, or if a government customer were to suspend or debar us from doing business with such government, our business, financial condition, and results of operations would be materially harmed.

Failure to comply with federal, state and foreign laws and regulations relating to privacy, data protection and consumer protection, or the expansion of current or the enactment of new laws or regulations relating to privacy, data protection and consumer protection, could adversely affect our business and our financial condition.

We collect, store, process, and use personal information and other customer data, and we rely in part on third parties that are not directly under our control to manage certain of these operations and to collect, store, process and use payment information. Due to the volume and sensitivity of the personal information and data we and these third parties manage and expect to manage in the future, as well as the nature of our customer base, the security features of our information systems are critical. A variety of federal, state and foreign laws and regulations govern the collection, use, retention, sharing and security of this information. Laws and regulations relating to privacy, data protection and consumer protection are evolving and subject to potentially differing interpretations. These requirements may not be harmonized, may be interpreted and applied in a manner that is inconsistent from one jurisdiction to another or may conflict with other rules or our practices. As a result, our practices may not have complied or may not comply in the future with all such laws, regulations, requirements and obligations.

We expect that new industry standards, laws and regulations will continue to be proposed regarding privacy, data protection and information security in many jurisdictions. We cannot yet determine the impact such future laws, regulations and standards may have on our business. Complying with these evolving obligations is costly.

As we expand our international presence, we may also become subject to additional privacy rules, many of which, such as the General Data Protection Regulation promulgated by the European Union (the “GDPR”) and national laws supplementing the GDPR, such as in the United Kingdom, and similar laws in other countries which are significantly more stringent than those currently enforced in the United States. The law requires companies to meet stringent requirements regarding the handling of personal data of individuals located in the European Economic Area, or EEA. These more stringent requirements include expanded disclosures to inform customers about how we may use their personal data through external privacy notices, increased controls on profiling customers and increased rights for data subjects (including customers and employees) to access, control and delete their personal data. In addition, there are mandatory data breach notification requirements. The law also includes significant penalties for non-compliance, which may result in monetary penalties of up to the higher of €20.0 million or 4% of a group’s worldwide turnover for the preceding financial year for the most serious violations. The GDPR and other similar regulations require companies to give specific types of notice and informed consent is required for the placement of a cookie or similar technologies on a user’s device for online tracking for behavioral advertising and other purposes and for direct electronic marketing, and the GDPR also imposes additional conditions in order to satisfy such consent, such as a prohibition on pre-checked tick boxes and bundled consents, thereby requiring customers to affirmatively consent for a given purpose through separate tick boxes or other affirmative action.

A significant data breach or any failure, or perceived failure, by us to comply with any federal, state or foreign privacy or consumer protection-related laws, regulations or other principles or orders to which we may be subject or other legal obligations relating to privacy or consumer protection could adversely affect our reputation, brand and business, and may result in claims, investigations, proceedings or actions against us by governmental entities or others or other penalties or liabilities or require us to change our operations and/or cease using certain data sets. Depending on the nature of the information compromised, we may also have obligations to notify users, law enforcement or payment companies about the incident and may need to provide some form of remedy, such as refunds, for the individuals affected by the incident.

Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide.

Our quarterly and annual operating results may fluctuate significantly, which makes it difficult for us to predict our future operating results. These fluctuations may occur due to a variety of factors, many of which are outside of our control, including, but not limited to:

- the number of launch missions or space products delivery we schedule for a period, the price at which we sell them and our ability to schedule additional launch missions for repeat customers;
- unexpected weather patterns, maintenance issues, natural disasters or other events that force us to cancel or reschedule launches;
- the cost of raw materials or supplied components critical for the manufacture and operation of our rockets and launch equipment;
- the timing and cost of, and level of investment in, research and development relating to our technologies and our current or future facilities;
- developments involving our competitors;
- changes in governmental regulations or in the status of our regulatory approvals or applications;
- future accounting pronouncements or changes in our accounting policies; and
- general market conditions and other factors, including factors unrelated to our operating performance or the operating performance of our competitors.

The individual or cumulative effects of factors discussed above could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful.

This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If our revenue or operating results fall below the expectations of analysts or investors or below any guidance we may provide, or if the guidance we provide is below the expectations of analysts or investors, the price of our common stock could decline substantially. Such a stock price decline could occur even when we have met any previously publicly stated guidance we may provide.

We have been focused on developing launch capabilities and services since 2017. This limited operating history makes it difficult to evaluate Astra's future prospects and the risks and challenges it may encounter.

Because Astra has limited historical financial data and operates in a rapidly evolving market, any predictions about its future revenue and expenses may not be as accurate as they would be if it had a longer operating history or operated in a more developed market. Astra has encountered in the past, and will encounter in the future, risks and uncertainties frequently experienced by growing companies with limited operating histories in rapidly changing industries. If Astra's assumptions regarding these risks and uncertainties, which it uses to plan and operate its business, are incorrect or change, or if it does not address these risks successfully, its results of operations could differ materially from its expectations and its business, financial condition and results of operations could be adversely affected.

The markets for launch and space services have not been well established as the commercialization of space is a relatively new development and is rapidly evolving. Our estimates for the total addressable markets for launch and space services are based on a number of internal and third-party estimates, including our contracted revenue and sales pipeline, assumed prices at which we can offer services, assumed frequency of service, our ability to leverage our current manufacturing and operational processes and general market conditions. As a result, our estimates of the annual total addressable markets for in-space infrastructure services, as well as the expected growth rate for the total addressable market for that experience, may prove to be incorrect.

We are highly dependent on our senior management team and other highly skilled personnel, and if we are not successful in attracting or retaining highly qualified personnel, we may not be able to successfully implement our business strategy.

Our success depends, in significant part, on the continued services of our senior management team and on our ability to attract, motivate, develop and retain a sufficient number of other highly skilled personnel, including engineers, manufacturing and quality assurance, design, finance, marketing, sales and support personnel. Our senior management team has extensive experience in the aerospace industry, and we believe that their depth of experience is instrumental to our continued success. The loss of any one or more members of our senior management team, for any reason, including resignation or retirement, could impair our ability to execute our business strategy and have a material adverse effect on our business, financial condition and results of operations.

Competition for qualified highly skilled personnel can be strong, and we can provide no assurance that we will be successful in attracting or retaining such personnel now or in the future. We have commenced commercial launch operations in early 2022, and our estimates of the required team size to support our estimated flight rates may require increases in staffing levels that may require significant capital expenditure. Further, any inability to recruit, develop and retain qualified employees may result in high employee turnover and may force us to pay significantly higher wages, which may harm our profitability. The loss of any key employee or our inability to recruit, develop and retain these individuals as needed, could have a material adverse effect on our business, financial condition and results of operations.

The increase in non-U.S. sales could lead to incidents in violation of U.S. and international anti-corruption laws.

Our non-U.S. sales are subject to both U.S. and non-U.S. governmental regulations and procurement policies and practices, including regulations relating to import-export control, tariffs, investment, exchange controls, anti-corruption laws, and repatriation of earnings. Non-U.S. sales are also subject to varying currency, political and economic risks. The violation of any regulation could adversely affect our plans for international expansion.

We may become involved in litigation that may materially adversely affect us.

From time to time, we may become involved in various legal proceedings relating to matters incidental to the ordinary course of our business, supplier, customer, or relationships with third-parties, including intellectual property, commercial, product liability, employment, class action, whistleblower and other litigation and claims, and governmental and other regulatory investigations and proceedings. Such matters can be time-consuming, divert management's attention and resources from the operation of our business, and cause us to incur significant expenses or liability or require us to change our business practices. Because of the potential risks, expenses and uncertainties of litigation, we may, from time to time, settle disputes, even where we believe that we have meritorious claims or defenses. Because litigation is inherently unpredictable, we cannot assure you that the results of any of these actions will not have a material adverse effect on our business. We are currently a defendant in two actions, alleging violations of federal securities laws. Please see Item 3: Legal Proceedings for more information about these actions. We can provide no assurance that additional litigation or dispute will not arise in the future. While we believe these actions are not meritorious, these actions (and any future litigation or dispute), whether successful or not, could have a material adverse effect on our business, results of operations and financial condition. Further, while we have insurance to cover the defense of the existing actions, the amount of our retention is \$20 million and we will need to incur costs in that amount before we will be eligible for assistance from our insurer.

Astra needs to meet multiple security requirements in order to meet ongoing requirements for participation in government contracts. The inability to meet regulatory requirements or security standards may mean a failure to win contracts, receive security clearance certifications, and loss of current and future business.

U.S. government contracts generally are subject to FAR, agency-specific regulations that supplement FAR, such as the Department of Defense's Federal Acquisition Regulations, and other applicable laws, security requirements, and regulations. These regulations impose a broad range of requirements, many of which are unique to U.S. government contracting, including various procurement, import and export, security, contract pricing and cost, contract termination and adjustments, mandatory disclosure, and audit requirements. Our failure to comply with these regulations, agency or government entity processes or opinions, and requirements could result in an inability to acquire government contracts, reductions of the value of contracts, contract modifications or termination, inability to bill and collect receivables from customers, and the assessment of penalties and fines that could lead to suspension or debarment from U.S. government contracting or subcontracting.

Changes in tax laws or regulations may increase tax uncertainty and adversely affect results of our operations and our effective tax rate.

We are subject to complex and evolving U.S. tax laws and regulations, which might in the future make changes to corporate income tax rates, the treatment of foreign earnings, if any, or other income tax laws that could affect our future income tax provision and reduce our earnings while increasing the complexity, burden and cost of tax compliance.

Our determination of our tax liability is subject to review by applicable tax authorities. Any adverse outcome of such a review could harm our results of operations and financial condition. The determination of our tax liabilities requires significant judgement, and, in the ordinary course of business, there are many transactions and calculations where the ultimate tax determination is complex and uncertain. In addition, our future effective tax rates could be favorably or unfavorably affected by changes in tax rates, changes in the valuation of our deferred tax assets or liabilities, the effectiveness of our tax planning strategies or changes in tax laws or their interpretation. Such changes could have an adverse effect on our financial condition.

Although we believe our estimates are reasonable, as a result of these and other factors, the ultimate amount of our tax obligations owed might differ from the amounts recorded in our consolidated financial statements and any such difference could harm our results of operations in future periods in which we change our estimates of our tax obligations or in which the ultimate tax outcome is determined.

Our ability to use our net operating losses to offset future taxable income could be subject to certain limitations.

As of December 31, 2021, we have net operating loss carryforwards ("NOLs") available to reduce future taxable income. However, under Sections 382 and 383 of the United States Internal Revenue Code of 1986, as amended (the "Code"), a corporation that undergoes an "ownership change" (as defined by the Code) may be subject to limitations on its ability to utilize its pre-change NOLs and other tax attributes such as research tax credits to offset future taxable income. If it is determined that we have in the past experienced an ownership change, or if we undergo one or more ownership changes as a result of future transactions in our stock, then our ability to utilize NOLs and other pre-change tax attributes could be limited by Sections 382 and 383 of the Code, and similar state provisions. Future changes in our stock ownership, many of which are outside of our control, could result in an ownership change under Section 382 or 383 of the Code. Furthermore, our ability to utilize NOLs of any companies that we acquire in the future may be subject to limitations. For these reasons, we might not be able to utilize our NOLs, even if we maintain profitability.

The dual class structure of our common stock has the effect of concentrating voting power with our Chief Executive Officer and Chief Technology Officer, which limits an investor's ability to influence the outcome of important transactions, including a change in control.

Shares of our Class B common stock have 10 votes per share, while shares of our Class A common stock have one vote per share. Our Chief Executive Officer and Chief Technology Officer (the "Astra Founders"), collectively, hold all of the issued and outstanding shares of our Class B common stock. Accordingly, the Astra Founders hold approximately seventy-three percent (73%) of the voting power of our capital stock and are able to control matters submitted to our stockholders for approval, including the election of directors, amendments of our organizational documents and any merger, consolidation, sale of all or substantially all of our assets or other major corporate transactions. The Astra Founders may have interests that differ from other investors and may vote in a way with which other investors disagree and which may be adverse to their interests. This concentrated control may have the effect of delaying, preventing or deterring a change in control of the Company, could deprive our stockholders of an opportunity to receive a premium for their capital stock as part of a sale of the Company, and might ultimately affect the market price of shares of our Class A common stock.

We cannot predict the impact our dual class structure may have on the stock price of our Class A common stock.

We cannot predict whether our dual class structure will result in a lower or more volatile market price of our Class A common stock or in adverse publicity or other adverse consequences. For example, certain index providers have announced restrictions on including companies with multiple-class share structures in certain of their indexes. Under these policies, our dual class capital structure would make us ineligible for inclusion in certain indices, and as a result, mutual funds, exchange-traded funds and other investment vehicles that attempt to passively track those indices will not be investing in our stock. It is unclear what effect, if any, these policies will have on the valuations of publicly traded companies excluded from such indices, but it is possible that they may depress valuations, as compared to similar companies that are included. As a result, the market price of shares of our Class A common stock could be adversely affected.

Our stock price has been, and likely will continue to be, volatile.

The market price of our common stock has in the past been, and is likely to continue in the future to be, volatile. During the fiscal year ended December 31, 2021, the Nasdaq closing price of one share of our Class A common stock reached a high of \$21.15 and a low of \$6.93. As of March 25, 2022, the closing share price of a share of our Class A common stock is \$4.13. The volatility depends upon many factors, some of which are beyond our control, including:

- announcements regarding the results of expansion or development efforts by us or our competitors;
- announcements regarding the acquisition of businesses or companies by us or our competitors;
- technological innovations or new products and services developed by us or our competitors;
- changes in foreign or domestic regulations;
- issuance of new or changed securities analysts' reports and/or recommendations applicable to us or our competitors;
- additions or departure of our key personnel;
- actual or anticipated fluctuations in our quarterly financial and operating results and degree of trading liquidity in our common stock; and
- political or economic uncertainties including the current military action between Russian and the Ukraine.

One or more of these factors could cause a decline in the price of our Class A common stock. In addition, stock markets generally have experienced significant price and volume volatility. This volatility has had a substantial effect on the market prices of securities of many public companies for reasons frequently unrelated or disproportionate to the operating performance of the specific companies.

Delaware law and provisions in our certificate of incorporation and bylaws could make a takeover proposal more difficult.

Our organizational documents are governed by Delaware law. Certain provisions of Delaware law and of our certificate of incorporation and bylaws could discourage, delay, defer or prevent a merger, tender offer, proxy contest or other change of control transaction that a stockholder might consider in its best interest, including those attempts that might result in a premium over the market price for the shares of Class A common stock held by our stockholders. These provisions provide for, among other things:

- the ability of our board of directors to issue one or more series of preferred stock;
 - stockholder action by written consent only until the first time when the Astra Founders cease to beneficially own a majority of the voting power of our capital stock;
 - certain limitations on convening special stockholder meetings;
 - advance notice for nominations of directors by stockholders and for stockholders to include matters to be considered at our annual meetings;
 - amendment of certain provisions of the organizational documents only by the affirmative vote of (i) a majority of the voting power of our capital stock so long as the Astra Founders beneficially own shares representing a majority of the voting power of our capital stock and (ii) at least two-thirds of the voting power of the capital stock from and after the time that the Astra Founders cease to beneficially own shares representing a majority of the voting power of our voting stock; and
 - a dual-class common stock structure with 10 votes per share of our Class B common stock, the result of which is that the Astra Founders have the ability to control the outcome of matters requiring stockholder approval, even though the Astra Founders own less than a majority of the outstanding shares of our capital stock.
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These anti-takeover provisions as well as certain provisions of Delaware law could make it more difficult for a third party to acquire the Company, even if the third party's offer may be considered beneficial by many of our stockholders. As a result, our stockholders may be limited in their ability to obtain a premium for their shares. If prospective takeovers are not consummated for any reason, we may experience negative reactions from the financial markets, including negative impacts on the price of our common stock. These provisions could also discourage proxy contests and make it more difficult for our stockholders to elect directors of their choosing and to cause the Company to take other corporate actions that our stockholders desire.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We operate out of our headquarters and significant business operations in Alameda, California. We lease general office space in Mountain View, California and a testing facility in Merced, California. We believe the location of our facilities provides us with unique access to the technology and manufacturing expertise found in the San Francisco Bay Area. We are currently operating with month-to-month leases applicable to each of the buildings on our Alameda campus, with letters of intent and license agreements in place with the City of Alameda permitting us to occupy our existing facilities while we work to negotiate a long-term lease for the campus.

Our current facilities are adequate for our present operating needs. However, we are in the process of building out additional space on our Alameda campus to support the launch services offerings, as well as the build out of facilities for our future space services offerings.

We do not own any real estate.

ITEM 3. LEGAL PROCEEDINGS

Discussion of legal matters is incorporated by reference from Part II, Item 8, Note 18, “Subsequent Events,” of this Annual Report on Form 10-K, and should be considered an integral part of Part I, Item 3, “Legal Proceedings.”

ITEM 4. MINE SAFETY DISCLOSURES

None.

PART II

ITEM 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER SALE AND PURCHASES OF EQUITY SECURITIES

Market Information

Our Class A common stock is traded on the Nasdaq Global Select Market under the symbols "ASTR." Our Class B common stock is not listed on any stock exchange nor traded on any public market. Each share of Class A common stock is entitled to one vote. Each share of Class B common stock is entitled to 10 votes. Class A and Class B common stock have a par value of \$0.0001 per share and are referred to, collectively, as common stock throughout this Annual Report on Form 10-K, unless otherwise noted.

Holders of Record

As of March 25, 2022, there were 123 stockholders of record of our Class A common stock. Because many of our shares of Class A common stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders. As of March 25, 2022, there were 2 stockholders of record of our Class B common stock.

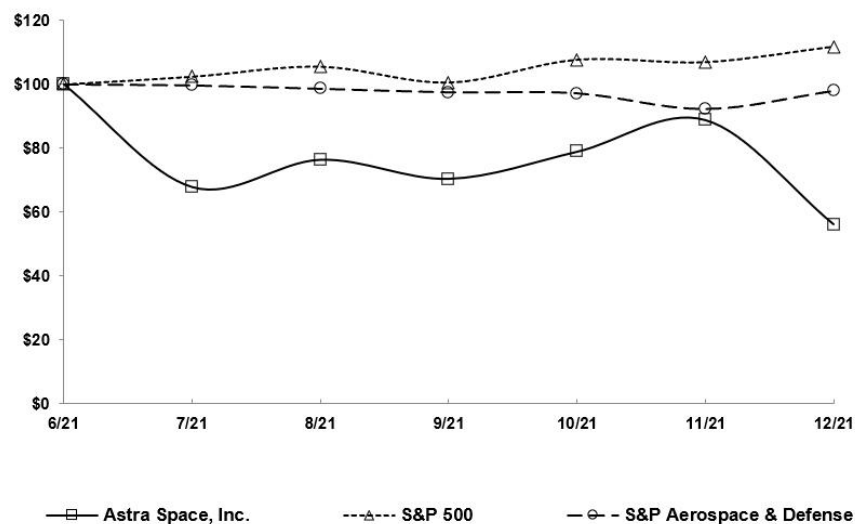
Dividends

We have never declared or paid any dividends on our common stock. We currently intend to retain all available funds and any future earnings for the operation and expansion of our business. Accordingly, we do not anticipate declaring or paying dividends in the foreseeable future. The payment of any future dividends will be at the discretion of our Board of Directors and will depend on our results of operations, capital requirements, financial condition, prospects, contractual arrangements, any limitations on payment of dividends present in any debt agreements and other factors that our Board of Directors may deem relevant.

Stock Performance Graph

This performance graph shall not be deemed "soliciting material" or to be "filed" with the Securities and Exchange Commission, or the SEC, for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or the Exchange Act, or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any of our filings under the Securities Act of 1933, as amended, or the Securities Act.

The following graph compares (i) the cumulative total stockholder return on our common stock from June 30, 2021 (the effective date of the Business Combination) through December 31, 2021 with (ii) the cumulative total return of the S&P 500 Index and S&P Aerospace and Defense Index over the same period, assuming the investment of \$100 in our common stock and in both of the other indices on June 30, 2021 and the reinvestment of dividends. The graph uses the closing market price on June 30, 2021 of \$12.35 per share. As discussed above, we have never declared or paid a cash dividend on our common stock and do not anticipate declaring or paying a cash dividend in the foreseeable future.



Recent Sales of Unregistered Securities

We did not sell any unregistered equity securities during the year ended December 31, 2021, that were not otherwise disclosed on our quarterly reports on Form 10-Q or our current reports on Form 8-K filed during the year ended December 31, 2021.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

During the three months ended December 31, 2021, there were no repurchases of our common stock made by us.

ITEM 6. [RESERVED]

ITEM 7. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

This Management’s Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with our consolidated financial statements and notes thereto, which appear elsewhere in this Annual Report on Form 10-K. This discussion may contain forward-looking statements based upon current expectations that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under the caption “Risk Factors” or in other parts of this Annual Report on Form 10-K. Unless the context otherwise requires, all references in this section to “the Company” “Astra,” “us,” “our” or “we” refer to Astra Space, Inc. (n/k/a Astra Space Operations, Inc.) prior to the Business Combination, and to Astra Space, Inc. (f/k/a Holicity, Inc.) following the consummation of the Business Combination on June 30, 2021.

A discussion regarding our financial condition and results of operations for the year ended December 31, 2021 compared to the year ended December 31, 2020 is presented below. A discussion regarding our financial condition and results of operations for the year ended December 31, 2020 compared to the year ended December 31, 2019 can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Final Prospectus dated August 9, 2020 filed with the Securities and Exchange Commission, or SEC, pursuant to Rule 424(b)(4) on August 9, 2020.

Overview

Our mission is to launch a new generation of launch services and space services and products to improve life on Earth. These services and products are enabled by new constellations of small satellites in Low Earth Orbit (“LEO”), which have rapidly become smaller, cheaper, and many times more numerous than legacy satellites. Launch vehicles, however, have not evolved in the same way — most rockets remain focused on serving legacy satellites and human spaceflight missions and we aim to provide the world’s first mass-produced orbital launch system. While our primary focus remains the growth and development of our launch services offerings, we continue to develop other product and service offerings to support our overall mission to improve life on Earth from space. For example, on June 2, 2021, we announced the acquisition of Apollo Fusion, Inc. and acquired its ACE propulsion system and, on November 4, 2021, we announced the filing of an application with the Federal Communications Commission for V-band spectrum assets to support a future constellation to further enable communications and connectivity.

Holicity Business Combination and Public Company Costs

We entered into a business combination agreement with Holicity Inc. (“Holicity”) on February 2, 2021. On June 30, 2021 (the “Closing Date”), the previously announced business combination was consummated. Upon the consummation of the business combination, Holicity Merger Sub Inc. (“Merger Sub”), a wholly owned subsidiary of Holicity, merged with and into Astra with Astra surviving the merger as a wholly owned subsidiary of Holicity (the “Business Combination”). Astra became a wholly owned subsidiary of Holicity, which renamed to Astra Space, Inc. (“New Astra”), and Astra renamed to Astra Space Operations, Inc. upon the consummation of the Business Combination.

The Business Combination was accounted for as a reverse recapitalization. Astra was the predecessor and New Astra is the successor SEC registrant, meaning that Astra’s financial statements for previous periods will be presented in New Astra’s future periodic reports filed with the SEC. Holicity was treated as the acquired company for financial statement reporting purposes.

The most significant change in the post-combination Company’s reported financial position and results was a net increase in cash of \$463.6 million. We paid \$25.2 million in transaction costs relating to the Business Combination at the closing. We recorded a liability related to the Public and Private Placement Warrants of \$56.8 million in the consolidated balance sheet on Closing Date.

As a consequence of the Business Combination, the Company trades under the ticker symbol “ASTR” on the Nasdaq. We hired additional personnel and implemented procedures and processes to address public company regulatory requirements and customary practices. We also incurred, and will continue to incur, additional annual expenses as a public company for, among other things, directors’ and officers’ liability insurance, director fees and additional internal and external accounting and legal and administrative resources, including increased audit and legal fees.

Acquisition of Apollo Fusion

On July 1, 2021, the Company completed its acquisition of Apollo Fusion, Inc. (“Apollo”), a designer and builder of thruster propulsion systems for satellite programs. The acquisition-date fair value of the consideration transferred totaled \$70.8 million, net of cash acquired. The consideration consisted of approximately 2,558,744 shares of the Company’s Class A common stock worth \$33.0 million which value was determined based on the closing market price of the Company’s common stock on the acquisition date, \$19.9 million in cash and \$18.4 million of the fair value of contingent consideration. The contingent consideration arrangement requires the Company to pay up to an additional \$75.0 million, provided certain customer revenue-based milestones are achieved prior to December 31, 2023. If earned, the contingent consideration will be payable as follows: up to \$15.0 million of cash and \$60.0 million of the

Company's Class A common stock, at a reference price per share equal to the then volume weighted average trading price over a five-day trading period prior to the business day prior to issuance. The contingent consideration is payable on a quarterly basis based on the milestones achieved. We estimated the fair value of the contingent consideration using a Monte Carlo simulation model. This fair value measurement is based on significant inputs not observable in the market and thus represents a Level 3 measurement as defined in ASC 820. As of December 31, 2021, the contingent consideration recognized from acquisition of Apollo decreased to \$13.7 million as a result of changes in forecasted revenues subject to milestone payments and the passage of time.

An additional \$10.0 million of cash ("Cash Earnout") is expected to be paid to employees of Apollo that joined Astra following the acquisition, subject to certain performance-based milestones, as amended. The Cash Earnout is accounted for as compensation expense over the requisite service period in the post-acquisition period as the payment is subject to continued employment with the Company which is payable after the achievement of each performance-based milestone. The Company assessed the probability of success of each performance-based milestone and determined that the Company has achieved certain performance-based milestones and it is probable that certain remaining performance-based milestones will be met. The Company recognized \$5.8 million in compensation cost which was included in research and development expense for the year ended December 31, 2021 and \$3.9 million was accrued in accrued expenses and other current liabilities as of December 31, 2021.

In addition, on November 22, 2021, the Company's compensation committee awarded 1,047,115 performance stock units ("PSUs") to the employees of Apollo who joined Astra under the Company's 2021 Omnibus Incentive Plan. The PSUs were negotiated as part of the acquisition of Apollo and are subject to certain performance-based and service-based vesting conditions. If the milestones are achieved, the PSUs would vest over four years with 25% of awards vesting on July 1, 2022 and the remaining 75% vesting quarterly beginning November 15, 2022, over the remaining 12 quarters only for the portion of PSUs that is eligible to become vested which will be determined based upon timely satisfaction of performance conditions. The number of PSUs vested will be determined by multiplying the total number of PSUs granted by the percentage of milestones achieved and by the percentage of PSUs that satisfy the time-based vesting condition on such time-vesting date.

Certain performance conditions under the plan are subjective and the number of PSUs related to these performance conditions do not meet the criteria for the grant date. Accordingly, 523,557 PSUs related to the performance conditions that are not subjective are considered granted as of November 22, 2021. The remaining PSUs issued did not meet the grant date criteria as of December 31, 2021. The Company will re-assess at the end of each reporting period if any further PSUs has met the grant date criteria and account for it in the period in which it meets the grant date criteria.

As of December 31, 2021, the Company assessed the probability of success for the performance conditions that are not subjective and determined that the Company has achieved these performance conditions within the requisite period. Therefore, the Company recognized \$0.5 million compensation costs related to PSUs for the year ended December 31, 2021.

Public and Private Warrants Redemption

As part of Holicity's initial public offering ("IPO") in 2020, Holicity issued 9,999,976 warrants to third party investors, and each whole warrant entitles the holder to purchase one share of the Company's Class A common stock at an exercise price of \$11.50 per share (the "Public Warrants"). Simultaneously with the closing of the IPO, Holicity completed the private sale of 5,333,333 warrants to Holicity's sponsor ("Private Placement Warrants") and each Private Placement Warrant allows the sponsor to purchase one share of the Company's Class A common stock at \$11.50 per share.

On November 26, 2021 Company issued a notice of redemption to redeem all of its Public Warrants and Private Placement Warrants ("Redeemable Warrants") outstanding as of December 27, 2021. In connection with the redemption, the holders of 9,413,895 Public Warrants and 5,333,333 Private Placement Warrants elected to receive, in lieu of the \$0.10 redemption price, an aggregate 3,775,709 shares of Class A common stock at 0.2560374 shares of Class A Common Stock per Redeemable Warrant. A total of 586,075 Public Warrants remained unexercised as of December 27, 2021 and the Company redeemed the Public Warrants for a redemption price of \$0.10 per Redeemable Warrant. The Public Warrants and Private Placement Warrants were remeasured to fair value as of the exercise or redemption date, resulting in a gain of \$25.7 million for year ended December 31, 2021, classified within other income, net in the consolidated statements of operations.

COVID-19 Impact

On March 11, 2020, the World Health Organization declared the novel strain of coronavirus ("COVID-19") a global pandemic and recommended containment and mitigation measures worldwide. The extent of the impact of the coronavirus pandemic on Astra's operational and financial performance will depend on various future developments, including the duration and spread of the outbreak and impact on its customers, suppliers, and employees, all of which is uncertain at this time. Astra believes the COVID-19 pandemic may adversely impact future revenue and results of operations, but Astra is unable to predict at this time the size and duration of this adverse impact. Astra has seen some signs of positive effects for its long-term business prospects and partnerships as a result of the pandemic. The COVID-19 pandemic has created an even greater need for broadband internet access, and businesses are thinking

differently about how their workforce can stay connected. There have also been recent government and commercial announcements about continuous investments in this area and we believe this will continue to support the growth of the small satellite market for the foreseeable future.

For more information on Astra's operations and risks related to health epidemics, including the COVID-19 pandemic, please see the section entitled "Risk Factors."

Key Factors Affecting Our Results and Prospects

We believe that our performance and future success depend on a number of factors that present significant opportunities for us but also pose risks and challenges, including competition from better known and well-capitalized companies, the risk of actual or perceived safety issues and their consequences for our reputation and the other factors discussed under "Risk Factors." We believe the factors discussed below are key to our success.

Commencing and Expanding Commercial Launch Operations

We are on track to achieve a monthly launch capability by accelerating production of our launch vehicles by the end of 2022, with a goal of reaching an even more frequent launch capability in the future. When we refer to a "commercial launch," we mean a launch conducted under an FAA commercial launch license. With binding agreements for launches, our contracted revenue is significant, and we are in active discussions with numerous potential customers, including government agencies and private satellite companies, to add to our contracted revenue.

In December 2020, we successfully launched Rocket 3.2 to an altitude of 380 km, demonstrating orbital launch capability. We improved propellant depletion controls to address the findings from the December 2020 flight. In August 2021, we attempted a flight with launch vehicle LV0006, but the mission was aborted. During liftoff, fuel and liquid oxygen leaked from the propellant supply system attached to the launch vehicle. The leaked propellants mixed and ignited, which disabled one of the five first-stage engines. We analyzed the cause of the anomaly and implemented certain design changes to avoid having this issue in future. On November 20, 2021, we launched launch vehicle LV0007 into orbit at an inclination of 86.0 degrees, an altitude of 500 km and velocity of 7.61 km/s, making Astra one of the fastest privately-funded U.S. company to successfully demonstrated the orbital placement of a test payload. Astra achieved this goal in approximately five years from inception. We commenced paid commercial launch services in 2022 and on February 10, 2022, Astra launched launch vehicle LV0008. After a nominal first stage flight, the payload fairing did not fully deploy prior to the upper stage ignition due to an electrical issue which, together with a software issue, resulted in the upper stage not reaching orbit and the end of the mission. Through our investigation process, we identified and have since corrected the issues that caused the error in the payload fairing's deployment and addressed the software issue. On March 15, 2022, we conducted an orbital launch for three customers of Spaceflight, Inc. and confirmed our first delivery of customer payloads into Earth orbit. To conduct our launches, we are required to receive commercial space transportation licenses from the FAA. Any delays in commencing our commercial launch operations, including due to delays or cost overruns in obtaining FAA licenses or other regulatory approvals for future versions of our launch vehicles or at future spaceports, could adversely impact our results and growth plans.

Lowering Manufacturing Costs and Increasing Payloads

We aim to be a cost-efficient dedicated orbital launch system provider. We plan to increase the maximum payload capacity of our launch vehicle to meet the customer needs and demands through a process of iterative development and improvement. We have invested approximately \$35.9 million in our manufacturing facility through December 31, 2021 and we expect the facility will be at full capacity by the end of 2024. Please see the section entitled "Risk Factors" for factors that could affect our ability to realize benefit from investment in our manufacturing facility. While we believe that our estimate is reliable, the development of our manufacturing facility may take longer than planned, including due to delays in obtaining federal and state regulatory approvals of our final construction plans or any changes that are required to be made to those plans. Any delays in our achieving full manufacturing capacity could adversely impact our results and growth plans.

Expand Our Space Services Offerings

We are in the preliminary stages of developing our space services offering (which we previously referred to as "Satellite Services"), providing modular configurable satellite buses for customers, leveraging both in-house and partner-provided subsystem components and in-house design and integration services, as well as operational support of satellites on orbit, to turn-key provision of entire constellations, offering "concept to constellation" in months instead of years. Specifically, our space services encompass all aspects of hosted satellite and constellation services, including hosting customer payloads onto our satellites, and delivering services, such as communication services. These services are expected to allow customers to focus on developing innovative payloads rather than having to design or develop complete satellite buses or satellites or constellations, which we will provide, along with ancillary services that are likely to include telemetry, tracking and control ("TT&C"), communications, processing, as well as software development and maintenance.

On November 4, 2021, we filed an application with the FCC, under which we requested authority to launch and operate a non-geostationary orbit satellite system using V-band frequencies (the "Constellation") as we work to build out our space services offering to enable communications.

We expect to make significant investments in our space services programs. Although we believe that our financial resources, including the proceeds of the Business Combination and the related private placement, will be sufficient to meet our capital needs for at least 23 months from December 31, 2021, our timeline and budgeted costs for these offerings are subject to substantial uncertainty, including due to compliance requirements of U.S. federal export control laws and applicable foreign and local regulations, the impact of political and economic conditions, and, particularly in the case of our anticipated Spaceport offering, the need to identify opportunities and negotiate long-term agreements with customers for these services, among other factors. Please see the section entitled "Risk Factors".

Key Components of Results of Operations

We are an early-stage company and our historical results may not be indicative of our future results for reasons that may be difficult to anticipate. Accordingly, the drivers of our future financial results, as well as the components of such results, may not be comparable to our historical or future results of operations.

Revenues

We have not generated any revenue as of December 31, 2021, as we were a developmental stage company until our first paid commercial launch, which occurred in February 2022. Following the commercial launch of our services, we expect to generate a significant portion of our revenues in launch services from delivering payloads into orbit. We also expect to generate revenues by delivering space products and space services to our customers in the future. Over time, we expect space services to grow more quickly and to represent a significant portion of our revenues after 2025.

Expenses

Research and Development Expense

Our research and development expenses consist primarily of internal and external expenses incurred in connection with our research activities and development programs. These expenses include, but are not limited to, development supplies, testing materials, personnel and personnel-related costs (including salaries, bonuses, benefits, and stock-based compensation expense), depreciation expense, overhead allocation (consisting of various support and facility costs) and consulting fees. Research and development costs are expensed as incurred.

We allocate research and development costs by function rather than by project, as a significant majority of our historical research and development spending was related to the initial development and testing of our underlying technology, including preparation for multiple test launches.

Our current primary research and development objectives focus on the development and finalization of our offerings. The successful development of these offerings involves many uncertainties, including:

- timing in finalizing launch and space systems design and specifications;
- successful completion of analyses and ground test programs to validate that new or changed designs perform as expected;
- successful completion of flight test programs, including flight safety tests;
- our ability to obtain additional applicable approvals, licenses or certifications from regulatory agencies, if required, and maintaining current approvals, licenses or certifications;
- performance of our manufacturing facilities despite risks that disrupt productions, such as natural disasters and hazardous materials;
- performance of a limited number of suppliers for certain raw materials and components;
- performance of our third-party contractors that support our research and development activities;
- our ability to maintain rights from third parties for intellectual properties critical to research and development activities; and
- our ability to continue funding and maintain our current research and development activities.

A change in the outcome of any of these variables could delay the development of our launch and space systems, which in turn could impact the timing of commercialization of our offerings.

As we are developing and building our launch services, we have expensed all research and development costs associated with developing and building our launch services offering. We expect that our research and development expenses will increase in the short-term as we invest in improving and further reducing the costs of our launch system as well as developing and improving our space services offering.

Sales and Marketing Expense

Sales and marketing expenses consist of personnel and personnel-related expenses (including stock-based compensation) for our business development team as well as advertising and marketing expenses. We expect to increase our sales and marketing activities in order to grow our customer base and increase market share. We also expect that our sales and marketing expenses will increase over time as we continue to hire additional personnel to scale the business. We began incurring sales and marketing expenses in 2021.

General and Administrative Expense

General and administrative expenses consist primarily of personnel and personnel-related costs (including salaries, bonuses, benefits, and stock-based compensation expense) for personnel in executive, finance, accounting, corporate development and other administrative functions. General and administrative expenses also include legal fees, professional fees paid for accounting, auditing, consulting, tax, and investor relations services, insurance costs, and facility costs not otherwise included in research and development expenses and costs associated with compliance with the rules and regulations of the SEC and the stock exchange.

Income Tax (Benefit) Expense

Our income tax provision consists of an estimate for U.S. federal and state income taxes based on enacted rates, as adjusted for allowable credits, deductions, uncertain tax positions, changes in deferred tax assets and liabilities, and changes in the tax law. We maintain a valuation allowance against the full value of our U.S. and state net deferred tax assets because we believe the recoverability of the tax assets is not more likely than not.

Other Income, Net

Other income, net primarily consists of gain on change in fair value of Public Warrants and Private Placement Warrants, fair value contingent consideration, mark to market derivative liability related to convertible notes and forgiveness of Paycheck Protection Program ("PPP") Note and income from government research and development contracts.

Critical Accounting Estimates

Our consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles, or U.S. GAAP. Preparation of the financial statements requires our management to make a number of judgments, estimates and assumptions relating to the reported amount of expenses, assets and liabilities and the disclosure of contingent assets and liabilities. We consider an accounting judgment, estimate or assumption to be critical when (1) the estimate or assumption is complex in nature or requires a high degree of judgment and (2) the use of different judgments, estimates and assumptions could have a material impact on our consolidated financial statements. Our significant accounting policies are described in Note 2 to our consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K. Our critical accounting estimates are described below.

Business Combination

Accounting for business combinations requires management to make significant estimates and assumptions, especially at the acquisition date, for intangible assets, contractual obligations assumed, pre-acquisition contingencies, and contingent consideration, where applicable. Although we believe the assumptions and estimates we have made are reasonable and appropriate, they are based, in part, on historical experience and information obtained from management of the acquired companies and are inherently uncertain. Critical estimates in valuing certain of the intangible assets we have acquired include, but are not limited to, future expected cash flows from product sales, revenue growth rate, technology royalty rate, expected life of the technology acquired, customer retention rate and discount rates. Critical estimates in valuing contingent consideration include, but are not limited to, forecasted revenues from new customers including probabilities of achieving it and discount rates. The discount rates used to discount expected future cash flows to present value are typically derived from a weighted-average cost of capital analysis and adjusted to reflect inherent risks. Unanticipated events and circumstances may occur that could affect either the accuracy or validity of such assumptions, estimates or actual results. As of December 31, 2021, we have recorded a contingent consideration liability of \$13.7 million based on assumptions and estimates which we believe are reasonable and appropriate. However, any changes in actual revenues as compared to forecasted revenues from new customers could have a significant impact on contingent consideration liability and could result in a maximum payout of up to \$75 million.

Valuation of goodwill and long-lived asset

We perform an annual impairment review of our goodwill during the fourth fiscal quarter of each year, and more frequently if we believe indicators of impairment exist. The process of evaluating the potential impairment of goodwill is highly subjective and requires significant judgment. To review for impairment, we first assess qualitative factors to determine whether events or circumstances lead to a determination that it is more likely than not that the fair value of our reporting unit is less than its carrying amount. Our qualitative assessment of the recoverability of goodwill, whether performed annually or based on specific events or circumstances, considers various macroeconomic, industry-specific and company-specific factors. Those factors include: (i) severe adverse industry or economic trends; (ii) significant company-specific actions; (iii) current, historical or projected deterioration of our financial performance; or (iv) a sustained decrease in our market capitalization below our net book value. After assessing the totality of events and circumstances, if we determine that it is not more likely than not that the fair value of our reporting unit is less than its carrying amount, no further assessment is performed. If we determine that it is more likely than not that the fair value of our reporting units is less than its carrying amount, we calculate the fair value of that reporting unit and compare the fair value to the reporting unit's net book value. If the fair value of the reporting unit is greater than its net book value, there is no impairment. Otherwise, we record a goodwill impairment charge for the amount by which the carrying value of the reporting unit exceeds its fair value up to the amount of the goodwill. Determining the fair value of a reporting unit involves the use of significant estimates and assumptions. As of December 31, 2021, no impairment of goodwill is identified based on our qualitative assessment of the recoverability of goodwill.

We assess the impairment of long-lived assets including indefinite life intangible asset, definite life intangible asset and property, plant and equipment, whenever events or changes in circumstances indicate that the carrying value of such assets may not be recoverable. Factors we consider important which could trigger an impairment review include (i) significant under-performance relative to historical or projected future operating results, (ii) significant changes in the manner of our use of the acquired assets or the strategy for our overall business, or (iii) significant negative industry or economic trends. The process of evaluating the potential impairment of long-lived assets under the accounting guidance is also highly subjective and requires significant judgment. In order to estimate the fair value of long-lived assets, we typically make various assumptions about the future prospects of our business and consider market factors to estimate future cash flows to be generated by the business, which requires significant judgment as it is based on assumptions about market demand for our services and products over a number of future years. Based on these assumptions and estimates, we determine whether we need to take an impairment charge to reduce the value of the long-lived asset stated on our consolidated balance sheets to reflect its estimated fair value. Assumptions and estimates about future values and remaining useful lives are complex and often subjective. They can be affected by a variety of factors including external factors, industry and economic trends, and internal factors, such as changes in our business strategy and our internal forecasts. Although we believe the assumptions and estimates we have made have been reasonable and appropriate, changes in assumptions and estimates could materially impact our reported financial results.

Revenue Recognition

Astra adopted the requirements of the new revenue recognition standard, known as ASC 606, effective January 1, 2020, utilizing the modified retrospective method. Revenue for launch services and space products is recognized at a point in time when the Company has delivered the promised services or products to customers.

At contract inception, an assessment of the goods and services promised in the contracts with customers is expected to be performed and a performance obligation is identified for each distinct promise to transfer to the customer a good or service (or bundle of goods or services). To identify the performance obligations, the Company considers all the goods or services promised in the contract regardless of whether they are explicitly stated or are implied by customary business practices.

The transaction price will be defined as the amount of consideration in a contract to which an entity expects to be entitled in exchange for transferring promised goods or services to a customer, which is a fixed price stated in the contract. When a contract involves multiple launches or products, the Company accounts for each launch or product as a separate performance obligation, because the customer can benefit from each launch or product on its own or with other readily available resources and the launch or product is separately identifiable. The transaction price is allocated to each performance obligation on an estimated relative standalone selling price basis. The Company's process to estimate standalone selling prices involves management's judgment and considers multiple factors such as prices charged for similar goods and services and the Company's ongoing pricing strategy and policies.

Changes in judgments with respect to these assumptions and estimates could impact the timing or amount of revenue recognition.

Stock-Based Compensation

We use the fair value method of accounting for our stock-based awards granted to employees to measure the cost of employee services received in exchange for the stock-based awards. We recognize compensation expense for time-based restricted stock units ("RSUs") over the requisite service period based on the fair value of RSUs on the date of grant. The fair value of RSUs is the closing market price of Astra common stock on the date of grant. We recognize compensation expense for time-based stock options and employee stock purchase plan, based on the estimated grant-date fair value determined using the Black-Scholes option-pricing model

over the requisite service period. The Black-Scholes option-pricing model requires inputs that are subjective and require significant judgement and is impacted by the following assumptions:

- Expected Term — We use the midpoint between the vesting term and the original contractual term (contractual period to exercise). If the option contains graded vesting, then the vesting term is based on the vesting pattern.
- Expected Volatility — The volatility is based on a benchmark of comparable companies.
- Expected Dividend Yield — The dividend rate used is zero as we have never paid any cash dividends on common stock and do not anticipate doing so in the foreseeable future.
- Risk-Free Interest Rate — The interest rates used are based on the implied yield available on U.S. Treasury zero-coupon issues with an equivalent remaining term equal to the expected life of the award.

Certain stock options include service, market and performance conditions ("Performance-based stock options"). The fair value of performance-based stock options is estimated on the date of grant using the Monte Carlo simulation model. Certain RSUs also include service and performance conditions " (Performance-based Units)". The fair value of performance-based units is the closing market price of Astra common stock on the date of grant. Awards that include performance conditions are assessed at the end of each reporting period whether those performance conditions are met or probable of being met and involves significant judgement. For performance-based stock options, stock-based compensation expense associated with each tranche is recognized over the longer of (i) the expected achievement period for the operational milestone for such tranche and (ii) the expected achievement period for the related share price milestone determined on the grant date, beginning at the point in time when the relevant operational milestone is considered probable of being achieved. If such operational milestone becomes probable any time after the grant date, we will recognize a cumulative catch-up expense from the grant date to that point in time. If the related share price milestone is achieved earlier than its expected achievement period and the achievement of the related operational milestone, then the stock-based compensation expense will be recognized over the expected achievement period for the operational milestone, which may accelerate the rate at which such expense is recognized. For performance-based units, stock-based compensation expense associated with each tranche is recognized over the longer of the expected performance achievement period of individual performance milestones and the implicit service period when the achievement of each individual performance milestone becomes probable.

We reverse previously recognized costs for unvested stock-based awards in the period that forfeitures occur.

Income Taxes

We follow the asset and liability method of accounting for income taxes under ASC 740, Income Taxes. Deferred tax assets and liabilities are recognized for the expected future tax consequences of temporary differences between consolidated financial statement carrying amounts and the tax basis of assets and liabilities and net operating loss and tax credit carryforwards. Valuation allowances are established when necessary to reduce deferred tax assets to the amount expected to be realized.

We determine whether it is more likely than not that a tax position will be sustained upon examination. If it is not more likely than not that a position will be sustained, no amount of benefit attributable to the position is recognized. The tax benefit to be recognized for any tax position that meets the more likely than not recognition threshold is calculated as the largest amount that is more than 50% likely of being realized upon resolution of the contingency. Changes in recognition or measurement are reflected in the period in which judgment occurs.

Our policy is to include interest and penalties related to the underpayment of income taxes as a component of the provision for income taxes. To date, there have been no interest or penalties recorded in relation to unrecognized tax benefits.

Results of Operations

Comparison of the Years Ended December 31, 2021 and 2020

(in thousands, except percentages)	For The Year Ended December 31,		Period over period change	
	2021	2020	(\$)	(%)
Operating expenses:				
Research and development	\$ 80,398	\$ 27,544	\$ 52,854	192 %
Sales and marketing	4,111	—	4,111	n.m.
General and administrative	74,752	45,950	28,802	63
Total operating expenses	(159,261)	(73,494)	(85,767)	117
Loss from operations	(159,261)	(73,494)	(85,767)	117
Interest (expense) income, net	(1,169)	(5,659)	4,490	(79)
Other income, net	36,046	10,860	25,186	232
Loss on extinguishment of convertible notes	(131,908)	—	(131,908)	n.m.
Loss on extinguishment of convertible notes attributable to related parties	(1,875)	—	(1,875)	n.m.
Loss before taxes	(258,167)	(68,293)	(189,874)	278
Income tax (benefit) expense	(385)	—	(385)	n.m.
Net loss	\$ (257,782)	\$ (68,293)	(189,489)	277
Adjustment to redemption value on Convertible Preferred Stock	(1,011,726)	—	(1,011,726)	n.m.
Net loss attributable to common stockholders	\$ (1,269,508)	\$ (68,293)	\$ (1,201,215)	1759 %

n.m. = not meaningful.

Research and Development

Research and development costs were \$80.4 million for the year ended December 31, 2021, compared to \$27.5 million for the year ended December 31, 2020. The \$52.9 million increase mainly reflected a \$25.5 million increase in personnel-related costs and recruiting expenses for personnel in research and development departments due to an increase headcount, a \$12.9 million increase in stock-based compensation expense, a \$6.7 million inventory net realizable value write downs, a \$3.0 million increase in technology licensed and software subscription licenses related expenses, a \$2.9 million increase in depreciation and amortization expense and a \$2.2 million increase in research and development materials expense with the remainder due to changes in other research and development expenses. These increases were to support our product roadmap and launch services.

Sales and Marketing

Sales and Marketing expenses were \$4.1 million for the year ended December 31, 2021. There were no sales and marketing expenses for the year ended December 31, 2020 as the Company was primarily focused on research and development activities. The sales and marketing expenses primarily consists of personnel-related costs and consulting charges and increased mainly due to increased headcount.

General and Administrative

General and administrative expenses were \$74.8 million for the year ended December 31, 2021, compared to \$46.0 million for the year ended December 31, 2020. The \$28.8 million increase was primarily due to a \$12.0 million increase in employee costs due to increased headcount, a \$6.2 million increase from transaction costs incurred and expensed by the Company in relation to the Business Combination and Apollo Merger, a \$5.9 million increase in third-party consulting and recruitment costs due to the increased hiring, a \$4.8 million increase in accounting, audit and legal related fees, a \$3.7 million increase in insurance related expenses which is partially offset by a decrease in stock based compensation of \$5.3 million, with the remainder due to changes in facilities costs, IT equipment fees, and software subscription fees.

Interest (Expense) Income, Net

Interest expense, net was \$1.2 million for the year ended December 31, 2021, compared to \$5.7 million for the year ended December 31, 2020. The \$4.5 million decrease in interest expense was primarily due to the settlement of convertible notes on January 28, 2021, therefore we incurred \$0.5 million and \$5.3 million interest expense related to convertible notes for year ended December 31,

2021 and 2020, respectively, offset by an increase of \$0.3 million in interest expense related to the Bridge Loan and the SVB loan for the year ended December 31, 2021.

Other Income, Net

Other income, net was \$36.0 million for the year ended December 31, 2021, compared to \$10.9 million for the year ended December 31, 2020. The \$25.2 million increase in other income was primarily due to a \$25.7 million in gain on change in fair value of Public Warrants and Private Placement Warrants, a \$4.9 million in gain on the forgiveness of PPP Note and a \$4.7 million in gain on change in fair value of contingent consideration. This is partially offset by a decrease of \$8.2 million in income from a gain on the mark-to-market derivative liability related to convertible notes, a decrease of \$1.2 million in income from government's research and development contracts and \$0.8 million due to a nonrecurring payment to one of our investors.

Loss on Extinguishment of Convertible Notes

Loss on extinguishment of convertible notes of \$131.9 million for the year ended December 31, 2021 was due to the settlement of convertible notes on January 28, 2021. There was no such loss for the year ended December 31, 2020.

Loss on Extinguishment of Convertible Notes Attributable to Related Parties

Loss on extinguishment of convertible notes attributable to related parties of \$1.9 million for the year ended December 31, 2021 was due to the settlement of convertible notes attributable to related parties on January 28, 2021. There was no such loss for the year ended December 31, 2020.

Income Tax (Benefit) Expense

We recorded an income tax benefit of \$0.4 million as the result of the Apollo Merger for the year ended December 31, 2021. We did not incur income tax expense for the year ended December 31, 2020.

Adjustment to redemption value on Convertible Preferred Stock

Adjustment to redemption value on Convertible Preferred Stock of \$1,011.7 million for the year ended December 31, 2021, was due to the re-measurement of Convertible Preferred Stock to its redemption value due to the likelihood of a redemption event becoming probable. There was no such adjustment for the year ended December 31, 2020.

Liquidity and Capital Resources

Liquidity

The following section discusses our principal liquidity and capital resources as well as our primary liquidity requirements and uses of cash. Our cash and cash equivalents are maintained in highly liquid investments with remaining maturities of 90 days or less at the time of purchase. We believe our cash equivalents are liquid and accessible.

Our primary sources of liquidity as of December 31, 2021 consisted of \$325.0 million in cash and cash equivalents (compared to \$10.6 million as of December 31, 2020) and cash we expect to generate from operations. In addition, we may also generate cash from debt or equity financing from time to time. We had no debt outstanding as of December 31, 2021 (compared to \$71.1 million as of December 31, 2020, of which \$59.8 million represented outstanding principal on the Company's convertible notes). On January 28, 2021, we settled the outstanding convertible notes into convertible preferred shares as part of the Company's Series C financing, from which we also received \$30.0 million in cash proceeds. In June 2021, we closed the Business Combination and related private placement, from which we received \$463.6 million in net cash proceeds.

We measure liquidity in terms of our ability to fund the cash requirements of our research and development activities and our current business operations, including our capital expenditure needs, contractual obligations and other commitments. Our current liquidity needs relate to research and development activities, mainly in connection with the ongoing development of our technology, lease obligations and capital expenditures, which primarily relate to the development of our manufacturing facility.

We believe our expected future operating cash flows, together with our cash and cash equivalents, will be sufficient to meet our working capital and capital expenditure requirements for a period of at least twelve months from the date of this Annual Report. We expect a decrease in capital expenditures for the year ended December 31, 2022 as compared to the year ended December 31, 2021. For additional information regarding our cash requirements from contractual obligations and lease obligations, see Note 12 — Commitments and Contingencies and Note 10 — Leases in Part II, Item 8 of this Annual Report on Form 10-K.

Summary Statement of Cash Flows for the Year Ended December 31, 2021 and 2020

The following table sets forth the primary sources and uses of cash and cash equivalents for the periods presented below:

(in thousands)	For The Year Ended December 31,		Period over period change	
	2021	2020	\$	%
Net cash used in operating activities	\$ (114,356)	\$ (32,850)	\$ (81,506)	248 %
Net cash used in investing activities	(61,059)	(2,186)	(58,873)	2,693
Net cash provided by financing activities	489,811	35,128	454,683	1,294
Net increase (decrease) in cash and cash equivalents and restricted cash	\$ 314,396	\$ 92	\$ 314,304	341635 %

Cash Flows used in Operating Activities

Our cash flows from operating activities are significantly affected by our cash investments to support the growth of our business in areas such as research and development and general and administrative and working capital. Our operating cash inflows include cash from milestone billing under certain launch services contracts. These cash inflows are offset by our payments to suppliers for production materials and parts used in our manufacturing process as we ramp up our production, payments to our employees and other operating expenses.

For the year ended December 31, 2021, net cash used in operating activities was \$114.4 million. The primary factors affecting the Company's operating cash flows during the period were net loss of \$257.8 million, gain of \$25.7 million due to change in fair value of warrant liability, gain of \$4.9 million due to forgiveness of PPP Note, gain of \$4.7 million due to change in fair value of contingent consideration and deferred income tax benefit of \$0.4 million. This offset by non-cash charges including a non-cash loss on extinguishment of convertible notes of \$133.8 million, stock-based compensation expense of \$39.7 million, inventory net realizable value write downs of \$6.7 million, depreciation and amortization expense of \$5.3 million, non-cash lease expense of \$1.1 million and amortization of convertible note debt discounts of \$0.4 million. Changes in operating working capital items is mainly due to increased headcount and ramp-up of our production and primarily reflect the increase in trade accounts receivable of \$1.8 million, inventories of \$12.9 million, prepaid and other current assets of \$11.0 million, other non-current assets of \$0.6 million, accounts payable of \$1.3 million and accrued expenses and other current liabilities of \$18.8 million. Changes in operating working capital items was partially offset by a decrease in lease liabilities of \$1.2 million and other non-current liabilities of \$0.8 million.

For the year ended December 31, 2020, net cash used in operating activities was \$32.8 million, which was comprised of net loss of \$68.3 million and a non-cash gain on mark to market derivatives of \$8.1 million, offset by non-cash charges including stock-based compensation expense of \$32.2 million, depreciation expense of \$3.3 million, and amortization of convertible note debt discounts of \$4.5 million. Changes in operating working capital items primarily reflect the increase in inventories of \$0.6 million and accrued expenses and other current liabilities of \$3.7 million. This is partially offset by decrease in prepaid and other current assets of \$0.3 million and other non-current assets of \$0.3 million.

Cash Flows used in Investing Activities

For the year ended December 31, 2021, net cash used in investing activities was \$61.1 million, which was comprised mainly of cash paid as purchase price consideration for the acquisition of Apollo Fusion, Inc., net of cash acquired of \$19.4 million, acquisition of an indefinite-lived intangible trademark asset of \$3.4 million and purchases of property, plant and equipment of \$38.3 million mainly related to the construction of our manufacturing facility.

For the year ended December 31, 2020, net cash used in investing activities was \$2.2 million, which was comprised of purchases of property, plant and equipment of \$2.2 million.

Cash Flows from Financing Activities

For the year ended December 31, 2021, net cash provided by financing activities amounted to \$489.8 million and consisted primarily of proceeds from the Business Combination and private offering, net of transaction costs, of \$463.6 million, issuance of Series C of \$30.0 million, borrowings of \$10.0 million, issuance of stock under equity plans of \$2.0 million and employee stock purchase plan of \$0.8 million, offset by repayments on borrowings of \$16.4 million and settlement of Public Warrants and Private Placement Warrants of \$0.1 million.

For the year ended December 31, 2020, net cash provided by financing activities amounted to \$35.1 million and consisted primarily of proceeds from the issuance of convertible notes of \$31.0 million, borrowings of \$5.4 million and issuance of stock under equity plan of \$0.9 million, partially offset by repayments on borrowings of \$2.1 million.

Commitments and Contractual Obligations

We are a party to operating leases primarily for land and buildings (e.g., office buildings, manufacturing and testing facilities and spaceport) and certain equipment (e.g., copiers) under non-cancellable operating leases. The following table summarizes our lease commitments as of December 31, 2021:

Year Ended December 31	Minimum Lease Commitment (in thousands)
2022	\$ 1,761
2023	1,655
2024	1,655
2025	1,655
2026	1,642
Thereafter	2,840
Total future undiscounted minimum lease payments	\$ 11,208
Less: Imputed Interest	2,324
Total reported lease liability	\$ 8,884

On May 25, 2021, the Company entered a contract with a supplier to purchase components. The Company is obligated to purchase \$22.5 million of components over 60 months. The Company may terminate the supply agreement by paying 50% of the remaining purchase commitment at any point during the contract term. For the year ended December 31, 2021, the Company made total purchases of \$0.4 million.

Apart from the aforementioned leases and purchase commitments, we do not have any other material contractual obligations, commitments or contingent obligations.

Compliance With Continued Listing Standards of NASDAQ Global Select Market ("Nasdaq")

In conjunction with preparing this annual report on Form 10-K for the year ended December 31, 2021 (the "Annual Report"), we recently became aware that at the end of 2021 our filer status changed from non-accelerated filer to large accelerated filer. As a result of this change in status, this Annual Report was due to be filed on March 1, 2022 rather than on March 31, 2022. Under the Nasdaq listing standards, we are required to file our reports timely with the Securities and Exchange Commission. This report was filed late.

Our filing status is based on our public float as of June 30, 2021, which was also the effective date of the closing of the Business Combination. At the time of the closing of the Business Combination, our filing status was determined to be a non-accelerated filer, and we incorrectly believed that our status as a non-accelerated filer, based on our public float, did not need to be remeasured until June 30, 2022. We were required to recalculate our public float as of June 30, 2021, and our public float as of that date makes us a large accelerated filer, rather than a non-accelerated filer as we had previously believed.

When we discovered the change in our filing status, we promptly notified Nasdaq.

Recent Accounting Pronouncements

See Note 4 to our consolidated financial statements included elsewhere in this annual report on Form 10-K for more information about recently adopted accounting pronouncements and recently issued accounting pronouncements not yet adopted, including the timing of their adoption, and our assessment, to the extent we have made one yet, of their potential impact on our financial condition and our results of operations.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We have not, to date, been exposed to material market risks given our early stage of operations. As we expand our commercial operations, we expect to be exposed to foreign currency exchange rate and commodity price risks, particularly related to rocket propellants, helium, and aluminum, among others, and potentially other market risks, including those related to interest rates or valuation of financial instruments, among others.

Interest Rate Risk

As of December 31, 2021, we had \$100 million of cash invested in a money market fund. Our cash and cash equivalents are held for working capital purposes. We do not enter into investments for trading or speculative purposes. There was no material interest rate risk for the year ended December 31, 2021 and 2020.

Inflation Risk

We are exposed to inflation risk. Inflationary factors, such as increases in raw material and overhead costs, could impair our operating results. Although there has been a significant increase in inflation recently, it has not had a substantial impact on our results of operations for the period ended December 31, 2021. However, a higher rate of inflation in the future may have an adverse effect on our ability to recover increasing costs and we might not be able to pass along cost increases to our customers.

Foreign Currency Risk

There was no material foreign currency risk for the year ended December 31, 2021 and 2020. Our activities to date have been limited and were conducted in the United States.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

ASTRA SPACE, INC.
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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders
Astra Space, Inc.

Opinion on the financial statements

We have audited the accompanying consolidated balance sheets of Astra Space, Inc. (a Delaware corporation) and subsidiaries (the “Company”) as of December 31, 2021 and 2020, the related consolidated statements of operations, temporary equity and stockholders’ equity (deficit), and cash flows for each of the three years in the period ended December 31, 2021, and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, in conformity with accounting principles generally accepted in the United States of America.

Change in accounting principle

As discussed in Note 2 – Basis of Presentation and Summary of Significant Accounting Policies to the consolidated financial statements, the Company has changed its method of accounting for leases as of January 1, 2021 due to the adoption of Accounting Standards Update No. 2016-02, Leases, (Topic 842).

Basis for opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (“PCAOB”) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical audit matters

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which it relates.

Initial and subsequent fair value measurement of contingent consideration

As described further in Notes 3, 5 and 11 to the consolidated financial statements, the Company completed the acquisition of Apollo Fusion, Inc. (“Apollo”) on July 1, 2021. The total purchase consideration includes the fair value of contingent consideration. The fair value of the contingent consideration was \$18.4 million and \$13.7 million as of July 1, 2021 and December 31, 2021, respectively. The contingent consideration was originally valued at the acquisition date and is remeasured each reporting period with increases or decreases in the fair value recorded as an adjustment to operating loss. The Company’s forecasted future revenue formed the primary basis of the estimated fair value of the contingent consideration, which was valued using a Monte Carlo simulation model.

We identified the fair value measurement of the contingent consideration as a critical audit matter as there was a high degree of complex auditor judgment in evaluating the future forecasted revenue, which was the key assumption used to estimate the fair value of the contingent consideration. Forecasted future revenue involved a high degree of subjectivity due to Apollo’s limited historical operations. In addition, valuation professionals with specialized skills and knowledge were needed to assist in performing certain audit procedures.

The primary procedures we performed to address this critical audit matter included:

- Testing management’s process for determining the fair value of the contingent consideration, which required us to evaluate the reasonableness of management’s forecasts of future revenue by evaluating the revenue assumptions used in the valuation of the contingent consideration by comparing them against appropriate audit evidence.
- Performing a lookback analysis by weighing the available corroborative evidence and contradictory evidence, in subsequent periods, to assess management’s ability to forecast.
- Involving our valuation specialists in assessing the reasonableness of the selected valuation methodology, testing management’s process by reperforming the Monte Carlo simulation and performing sensitivity analyses for certain revenue assumptions used in the model.

/s/ GRANT THORNTON LLP

We have served as the Company’s auditor since 2020.

Phoenix, Arizona
March 31, 2022

ASTRA SPACE, INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except share data)

	As Of December 31,	
	2021	2020
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 325,007	\$ 10,611
Trade accounts receivable	1,816	—
Inventories	7,675	649
Prepaid and other current assets	12,238	485
Total current assets	346,736	11,745
Non-current assets:		
Property, plant and equipment, net	66,316	24,069
Right-of-use asset	9,079	—
Goodwill	58,251	—
Intangible assets, net	17,921	—
Other non-current assets	721	77
Total assets	\$ 499,024	\$ 35,891
LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)		
Current liabilities:		
Accounts payable	\$ 9,122	\$ 2,474
Operating lease obligation, current portion	1,704	—
Accrued expenses and other current liabilities	29,899	4,390
Long-term debt, current portion	—	41,132
Long-term debt, current portion due to related parties	—	10,503
Total current liabilities	40,725	58,499
Non-current liabilities:		
Long-term debt	—	7,286
Operating lease obligation, net of current portion	7,180	—
Other non-current liabilities	14,599	1,685
Total liabilities	62,504	67,470
Commitments and Contingencies (Note 12)		
TEMPORARY EQUITY		
Series A convertible preferred stock, \$0.0001 par value; none authorized, issued and outstanding as of December 31, 2021; 44,017,454 shares authorized, and 43,744,059 shares issued and outstanding as of December 31, 2020, net of issuance cost	—	15,922
Series B convertible preferred stock, \$0.0001 par value; none authorized, issued and outstanding as of December 31, 2021; 47,406,862 shares authorized and 47,024,227 shares issued and outstanding as of December 31, 2020, net of issuance costs	—	92,907
Total temporary equity	—	108,829
STOCKHOLDERS' EQUITY (DEFICIT)		
Founders convertible preferred stock, \$0.0001 par value; 1,000,000 and 12,302,500 shares authorized as of December 31, 2021 and 2020, respectively; none and 12,302,500 shares issued and outstanding as of December 31, 2021 and 2020, respectively	—	1
Class A common stock, \$0.0001 par value; 400,000,000 and 176,225,000 shares authorized as of December 31, 2021 and 2020, respectively; 207,451,107 and 15,679,758 shares issued and outstanding as of December 31, 2021 and 2020, respectively	22	2
Class B common stock, \$0.0001 par value; 65,000,000 and 61,512,500 shares authorized as of December 31, 2021 and 2020; 55,539,189 and 47,281,500 shares issued and outstanding as of December 31, 2021 and 2020, respectively	6	4
Additional paid in capital	1,844,875	50,282
Accumulated deficit	(1,408,383)	(190,697)
Total stockholders' equity (deficit)	436,520	(140,408)
Total liabilities, temporary equity and stockholders' equity (deficit)	\$ 499,024	\$ 35,891

The accompanying notes are an integral part of these consolidated financial statements.

ASTRA SPACE, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except share and per share data)

	For The Year Ended December 31,		
	2021	2020	2019
Operating expenses:			
Research and development	\$ 80,398	\$ 27,544	\$ 40,067
Sales and marketing	4,111	—	—
General and administrative	74,752	45,950	12,518
Total operating loss	(159,261)	(73,494)	(52,585)
Interest expense, net	(1,169)	(5,659)	(870)
Other income, net	36,046	10,860	276
Loss on extinguishment of convertible notes	(131,908)	—	—
Loss on extinguishment of convertible notes attributable to related parties	(1,875)	—	—
Loss before taxes	(258,167)	(68,293)	(53,179)
Income tax benefit	(385)	—	—
Net loss	\$ (257,782)	\$ (68,293)	\$ (53,179)
Adjustment to redemption value on Convertible Preferred Stock	(1,011,726)	-	-
Net loss attributable to common stockholders	\$ (1,269,508)	\$ (68,293)	\$ (53,179)
Net loss per share:			
Weighted average number of shares of Class A common stock outstanding – basic and diluted	110,837,016	6,585,392	5,374,543
Net loss per share of Class A common stock – basic and diluted	\$ (7.82)	\$ (1.23)	\$ (1.11)
Weighted average number of shares of Class B common stock outstanding – basic and diluted	51,548,314	48,801,526	42,349,994
Net loss per share of Class B common stock – basic and diluted	\$ (7.82)	\$ (1.23)	\$ (1.11)

The accompanying notes are an integral part of these consolidated financial statements.

ASTRA SPACE, INC.
CONSOLIDATED STATEMENTS OF TEMPORARY EQUITY AND STOCKHOLDERS' EQUITY (DEFICIT)
(In thousands, except share data)

	Temporary Equity		Permanent Equity										
	Convertible Preferred Stock		Common Stock		Class A Common Stock (New Astra)		Class B Common Stock (New Astra)		Founders Preferred Stock		Additional Paid in	Accumulated	Total Equity
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Capital	Deficit	(Deficit)
Balance as of December 31, 2018 (as previously reported)	136,493,663	\$ 108,829	61,284,797	\$ —	—	\$ —	—	\$ —	18,500,000	\$ —	\$ 6,642	\$ (69,225)	\$ (62,583)
Retroactive application of recapitalization	(45,725,377)	—	(20,530,407)	6	—	—	—	—	(6,197,500)	1	(7)	—	—
Balance as of December 31, 2018, effect of reverse recapitalization (refer to Note 3)	90,768,286	\$ 108,829	40,754,390	\$ 6	—	\$ —	—	\$ —	12,302,500	\$ 1	\$ 6,635	\$ (69,225)	\$ (62,583)
Stock-based compensation	—	—	12,296,959	—	—	—	—	—	—	—	814	0	814
Issuance of common stock under equity plans	—	—	344,760	—	—	—	—	—	—	—	34	—	34
Net loss	—	—	—	—	—	—	—	—	—	—	0	(53,179)	(53,179)
Balance as of December 31, 2019	90,768,286	\$ 108,829	53,396,109	\$ 6	—	\$ —	—	\$ —	12,302,500	\$ 1	\$ 7,483	\$ (122,404)	\$ (114,914)
Stock-based compensation	—	—	6,645,845	—	—	—	—	—	—	—	32,202	0	32,202
Issuance of common stock under equity plans	—	—	2,919,304	—	—	—	—	—	—	—	878	—	878
Debt discount related to beneficial conversion feature of convertible notes	—	—	—	—	—	—	—	—	—	—	9,239	—	9,239
Debt discount related to beneficial conversion feature of convertible notes attributable to related parties	—	—	—	—	—	—	—	—	—	—	480	—	480
Net loss	—	—	—	—	—	—	—	—	—	—	—	(68,293)	(68,293)
Balance as of December 31, 2020	90,768,286	\$ 108,829	62,961,258	\$ 6	—	\$ —	—	\$ —	12,302,500	\$ 1	\$ 50,282	\$ (190,697)	\$ (140,408)
Cumulative effect adjustment due to adoption of ASU 2020-06	—	—	—	—	—	—	—	—	—	—	(9,719)	691	(9,028)
Stock-based compensation	—	—	—	—	—	—	—	—	—	—	31,923	—	31,923
Issuance of common stock under equity plans	—	—	2,310,888	—	1,853,638	1	—	—	—	—	1,969	—	1,970
Issuance of Series C Convertible Preferred Stock, net of issuance costs	28,498,141	221,943	—	—	—	—	—	—	—	—	—	—	—
Conversion of Founders Convertible Preferred Stock to Series C Convertible Preferred Stock	5,073,576	—	—	—	—	—	—	—	(5,073,576)	—	8,156	—	8,156
Adjustment to redemption value on Convertible Preferred Stock	—	—	—	—	—	—	—	—	—	—	960,595	(960,595)	—
Merger recapitalization- Class A	(124,340,003)	(330,772)	(16,261,881)	(2)	140,601,884	14	—	—	—	—	330,751	—	330,763
Merger recapitalization- Class B	—	—	(49,010,265)	(4)	—	—	56,239,189	6	(7,228,924)	(1)	—	—	1
Private offering and merger financing, net of redemptions and equity issuance costs of \$23,337	—	—	—	—	57,489,019	6	—	—	—	—	406,863	—	406,869
Issuance of Class A common stock upon the acquisition of Apollo Fusion, Inc.	—	—	—	—	2,558,744	—	—	—	—	—	33,008	—	33,008
Issuance of Class A common stock upon settlement of warrants	—	—	—	—	4,247,822	1	—	—	—	—	31,047	—	31,048
Conversion of Class B common stock into Class A common stock	—	—	—	—	700,000	—	(700,000)	—	—	—	—	—	—
Net loss	—	—	—	—	—	—	—	—	—	—	—	(257,782)	(257,782)
Balance as of December 31, 2021	—	\$ —	—	\$ —	207,451,107	\$ 22	55,539,189	\$ 6	—	\$ —	\$ 1,844,875	\$ (1,408,383)	\$ 436,520

The accompanying notes are an integral part of these consolidated financial statements.

ASTRA SPACE, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,		
	2021	2020	2019
Cash flows from operating activities:			
Net loss	\$ (257,782)	\$ (68,293)	\$ (53,179)
Adjustments to reconcile net loss to cash flows used in operating activities			
Stock-based compensation	39,743	32,202	814
Depreciation	3,698	3,309	2,330
Amortization of intangible assets	1,629	—	—
Inventory net realizable value write downs	6,748	—	—
Non-cash lease expense	1,113	—	—
Deferred income taxes (benefit)	(385)	—	—
Gain on change in fair value of public and private placement of warrants	(25,681)	—	—
Gain on forgiveness of PPP note	(4,850)	—	—
Gain on change in fair value of contingent consideration	(4,700)	—	—
Loss on extinguishment of convertible notes	131,908	—	—
Loss on extinguishment of convertible notes attributable to related parties	1,875	—	—
Amortization of convertible note discounts	315	3,805	409
Amortization of convertible note discounts attributable to related parties	55	659	327
(Gain) loss on mark to market derivatives	—	(6,639)	209
(Gain) loss on mark to market derivatives attributable to related parties	—	(1,506)	255
Changes in operating assets and liabilities:			
Trade accounts receivable	(1,816)	—	—
Inventories	(12,925)	(649)	—
Prepaid and other current assets	(10,958)	280	(134)
Other non-current assets	(570)	279	110
Accounts payable	1,327	(26)	1,440
Lease liabilities	(1,156)	—	—
Accrued expenses and other current liabilities	18,835	3,741	(516)
Other non-current liabilities	(779)	(12)	811
Net cash used in operating activities	\$ (114,356)	\$ (32,850)	\$ (47,124)
Cash flows from investing activities:			
Acquisition of Apollo, net of cash acquired	(19,360)	—	—
Acquisition of trademark	(3,350)	—	—
Purchases of property, plant and equipment	(38,349)	(2,186)	(15,254)
Net cash used in investing activities	\$ (61,059)	\$ (2,186)	\$ (15,254)
Cash flows from financing activities:			
Settlement of public and private placement of warrants	(59)	—	—
Proceeds from business combination and private offering, net of transaction costs of \$23,337	463,648	—	—
Borrowings on Pendrell bridge loan	10,000	—	—
Repayment on Pendrell bridge loan	(10,000)	—	—
Proceeds from issuance of Series C preferred stock	30,000	—	—
Issuance cost of Series C preferred stock	(94)	—	—
Proceeds from issuance of convertible notes	—	30,352	18,235
Proceeds from issuance of convertible notes to related parties	—	648	10,600
Borrowings on term loans	—	—	3,000
Repayments on term loans	(2,800)	(200)	—
Borrowings on equipment advances	—	—	7,000
Repayments on equipment advances	(3,636)	(1,400)	(1,964)
Borrowings on economic injury disaster loan	—	500	—
Repayments on economic injury disaster loan	—	(500)	—
Borrowings on paycheck protection program loan	—	4,850	—
Proceeds from stock issued under equity plans	1,970	878	34
Proceeds from Employee Stock Purchase Plan	782	—	—
Net cash provided by financing activities	\$ 489,811	\$ 35,128	\$ 36,905
Net increase (decrease) in cash and cash equivalents	\$ 314,396	\$ 92	\$ (25,473)
Cash and cash equivalents at beginning of period	10,611	10,519	35,992
Cash and cash equivalents at end of period	\$ 325,007	\$ 10,611	\$ 10,519

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Non-cash activities:

Conversion of Series A, Series B, Series C, and Founders' convertible preferred into common stock	\$	330,764	\$	—	\$	—
Assets acquired included in accounts payable and accrued expenses and other current liabilities		8,693		448		1,255
Public and private placement of warrants acquired as part of business combination		56,786		—		—
Conversion of public and private placement of warrants into Class A common stock		31,047		—		—
Change in redemption value of Convertible Preferred Stock		1,011,726		—		—
Issuance of Class A common stock upon acquisition of Apollo Fusion, Inc.		33,008		—		—
Fair value of contingent consideration provided upon acquisition of Apollo Fusion, Inc.		18,400		—		—
Kodiak Spaceport financing obligation		—		—		765
Supplemental disclosures of cash flow information:						
Cash paid for interest	\$	691	\$	414	\$	359

The accompanying notes are an integral part of these consolidated financial statements

ASTRA SPACE, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1 — Description of Business

Astra Space Operations, Inc. (formerly Astra Space, Inc., and herein “Astra Space Operations”) designs, tests, manufactures and operates next generation of launch services and space services and products that will enable a new generation of global communications, earth observation, precision weather monitoring, navigation, and surveillance capabilities. Astra Space Operations’ mission is to improve life on Earth through greater connectivity and more regular observation and to enable a wave of innovation in low Earth orbit by expanding our space platform offerings.

Holcity Inc. (“Holcity”) was originally incorporated in Delaware and was established as a special purpose acquisition company, which completed its initial public offering in August 2020. On June 30, 2021 (the “Closing Date”), Holcity consummated a business combination (the “Business Combination”) pursuant to the Business Combination Agreement dated as of February 2, 2021 (the “BCA”), by and among Holcity, Holcity Merger Sub Inc., a wholly owned subsidiary of Holcity (“Merger Sub”), and Astra Space Operations (“pre-combination Astra”). Immediately upon the consummation of the Business Combination, Merger Sub merged with and into Astra Space Operations with Astra Space Operations surviving the merger as a wholly owned subsidiary of Holcity. Holcity changed its name to “Astra Space, Inc.”, and pre-combination Astra changed its name to “Astra Space Operations, Inc.”.

Unless the context otherwise requires, “we”, “us”, “our”, “Astra” and the “Company” refers to Astra Space, Inc., the combined company and its subsidiaries following the Business Combination. See Note 3 — Acquisitions for further discussion of the Business Combination. The Company’s Class A common stock is now listed on the Nasdaq under the symbol “ASTR”.

Note 2 — Basis of Presentation and Summary of Significant Accounting Policies***Basis of Presentation***

The Company’s consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America (“GAAP”) as determined by the Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) and pursuant to the rules and regulations of the U.S. Securities and Exchange Commission (“SEC”) for financial reporting.

The consolidated financial statements, in the opinion of management, reflect all adjustments, consisting only of normal recurring adjustments, necessary to present fairly our financial position, our results of operations, cash flows and stockholders’ equity (deficit) for the periods presented. The results are not necessarily indicative of the results of operations to be anticipated for any future annual or interim period.

On July 1, 2021, we, through our wholly owned indirect subsidiary, merged with Apollo Fusion, Inc. (“Apollo”). The fair value of the consideration paid as of July 1, 2021, was \$70.8 million, net of cash acquired (the “Apollo Merger”). The Apollo Merger was accounted for under FASB’s ASC Topic 805, Business Combination (“ASC 805”). Apollo designs, tests, manufactures and operates propulsion modules to enable satellites to orbit in space. The results of operations of Apollo are included in the consolidated financial statements commencing as of July 1, 2021, or the Apollo Acquisition Date. See Note 3 — Acquisitions for additional information.

On June 30, 2021, the Business Combination pursuant to the BCA, by and among Holcity, Merger Sub, and pre-combination Astra, is accounted for as a reverse recapitalization as pre-combination Astra was determined to be the accounting acquirer under ASC 805. The determination is primarily based on the evaluation of the following facts and circumstances:

- the equity holders of pre-combination Astra hold the majority of voting rights in the Company;
- the board of directors of pre-combination Astra represent a majority of the members of the board of directors of the Company;
- the senior management of pre-combination Astra became the senior management of the Company; and
- the operations of pre-combination Astra comprise the ongoing operations of the Company.

In connection with the Business Combination, outstanding common stock and preferred convertible stock of the pre-combination Astra was converted into common stock of the Company, par value of \$0.0001 per share, representing a recapitalization, and the net assets of the Company were acquired and recorded at historical cost, with no goodwill or intangible assets recorded. Pre-combination Astra was deemed to be the predecessor and the consolidated assets and liabilities and results of operations prior to the Closing Date are those of pre-combination Astra. Reported shares and earnings per share available to common stockholders, prior to the Business Combination, have been retroactively restated as shares reflecting the exchange ratio established in the BCA. The number of shares of preferred stock was also retroactively restated based on the exchange ratio. See Note 3 — Acquisitions for additional information

Principles of Consolidation and Liquidity

The consolidated financial statements include the accounts for the Company and its wholly owned subsidiaries. All significant intercompany balances and transactions have been eliminated in consolidation.

The Company has historically funded its operations primarily by equity financings and convertible promissory notes prior to the Business Combination and subsequently funded its operations through cash proceeds obtained as part of the Business Combination and related private placement. As of December 31, 2021, the Company's existing sources of liquidity included cash and cash equivalents of \$325 million. The Company has a limited history of operations and has incurred negative cash flows from operating activities and loss from operations in the past as reflected in the accumulated deficit of \$1,408.4 million as of December 31, 2021. The Company expects to continue to incur operating losses due to the investments it intends to make in its business, including the development of products. The Company has adequate cash balances that will be sufficient to fund operating and capital expenditure requirements through at least 12 months from the date of issuance of these financial statements.

Segment Reporting

Operating segments are identified as components of an enterprise about which separate discrete financial information is available for evaluation by the chief operating decision-maker ("CODM") in making decisions regarding resource allocation and assessing performance. All of the Company's assets are maintained in the United States. The Company has determined that it operates in one operating segment and one reportable segment, as the CODM reviews financial information presented on a consolidated basis for purposes of making operating decisions, allocating resources and evaluating financial performance.

Risks and Uncertainties

The Company is subject to those risks common in the aerospace and technology industry and also those risks common to early stage companies including, but not limited to, the possibility of not being able to successfully develop or market its products or services, competition, dependence on key personnel and key external alliances, the successful protection of its proprietary technologies, compliance with government regulations, and the possibility of not being able to obtain additional financing when needed.

On March 11, 2020, the World Health Organization declared the novel strain of coronavirus ("COVID-19") a global pandemic and recommended containment and mitigation measures worldwide. The COVID-19 pandemic has disrupted everyday life and markets worldwide, leading to significant business and supply-chain disruption, as well as broad-based changes in supply and demand. Many of the Company's customers worldwide were impacted by COVID-19 and temporarily closed their facilities which impacted the speed of research and development. Additionally, we implemented cost-cutting measures in response to the anticipated impact of the COVID-19 pandemic in early 2020, including employee layoffs and temporary furloughs. Further, the Company's fund raising was negatively impacted in the first half of 2020 as a result of a number of factors surrounding the COVID-19 pandemic. Beginning in the first quarter of 2021, there has been a trend in many parts of the world of increasing availability and administration of vaccines against COVID-19, as well as an easing of restrictions on social, business, travel and government activities and functions. On the other hand, infection rates and regulations continue to fluctuate in various regions and there are ongoing global impacts resulting from the pandemic, including challenges and increases in costs for logistics and supply chains, such as increased intermittent supplier delays and a shortfall of semiconductor supply. Ultimately, we cannot predict the duration of the COVID-19 pandemic. We will continue to monitor macroeconomic conditions to remain flexible and to optimize and evolve our business as appropriate and deploy our production, workforce and other resources accordingly.

Use of Estimates

The preparation of the consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities in the consolidated financial statements and accompanying notes. The Company bases these estimates on historical experience and on various other assumptions that it believes are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying amounts of assets and liabilities that are not readily apparent from other sources. Actual results could differ significantly from those estimates. Significant items subject to such estimates and assumptions include the valuation of goodwill and intangible assets, inventory valuation, stock-based compensation, common stock, derivatives and warrants, useful lives of intangible assets and fixed assets, deferred tax assets, income tax uncertainties, contingent consideration and other contingencies.

Cash and Cash Equivalents

We consider all highly liquid investment securities with original maturities of three months or less at the date of purchase to be cash equivalents. Cash and cash equivalents consists of cash deposited with banks and a money market account. We determine the appropriate classification of our cash and cash equivalents at the time of purchase.

Trade Accounts Receivable

Trade accounts receivable are recognized at the invoiced amount that represents an unconditional right to consideration under the contract with customers, less an allowance for any potential expected uncollectible amounts, and do not bear interest. The allowance for doubtful accounts is determined by estimating the expected credit losses based on historical experience, current economic conditions and certain forward-looking information, among other factors. Uncollectible accounts are written off when deemed uncollectible. No allowances for expected credit losses were recorded as of December 31, 2021 and 2020 and no accounts were written off during the years ended December 31, 2021, 2020 and 2019.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to concentrations of credit risk consists of cash and cash equivalents and accounts receivable. The Company maintains cash and cash equivalent balances in bank accounts with one bank. All cash accounts are located in the United States and insured by the Federal Deposit Insurance Corporation (“FDIC”). Our accounts receivable are derived from revenue earned from customers or invoice billed to customer that represent unconditional right to consideration located within the U.S. We mitigate collection risks from our customers by performing regular credit evaluations of our customers’ financial conditions. The Company believes there is no exposure to any significant credit risks related to its cash and cash equivalents or accounts receivable and has not experienced any losses in such accounts.

Inventories

Inventories consist of materials expected to be used for customer-specific contracts. Costs include direct material, direct labor, applicable manufacturing and engineering overhead, and other direct costs. Inventories are stated at the lower of cost or net realizable value determined by the first-in, first-out method. The Company assesses inventories quarterly for events or changes in circumstances indicating that the utility of our inventories have diminished through damage, deterioration, obsolescence, changes in price or other causes and records write-downs of inventories to research and development expense in the period for which they occur. A net realizable value write down is recorded, when actual costs exceed the estimated selling price less estimated selling costs.

Property, Plant and Equipment

Property, plant and equipment is measured at cost less any impairment losses and represents those assets with estimated useful lives exceeding one year. Repairs and maintenance are expensed as incurred. Costs for research and development equipment include amounts related to design, construction, launch and commissioning. Costs for production equipment include amounts related to construction and testing. Interest expense is capitalized on certain qualifying assets that take a substantial period of time to prepare for their intended use. Capitalized interest is not material for the years ended December 31, 2021 and 2020.

When the costs of certain components of an item of property, plant and equipment are significant in relation to the total cost of the item and the components have different useful lives, they are accounted for and depreciated separately.

Depreciation expense is recognized as an expense on a straight-line basis over the estimated useful life of the related asset to its residual value.

The estimated useful lives are as follows:

<i>Asset Class</i>	<i>Estimated useful life</i>
Leasehold improvements	Lesser of lease term or useful life
Research and development equipment	5 years
Production equipment	10 years
Furniture and fixtures	5 years
Computer and software	3 years

Business Combinations

We account for business combinations under the acquisition method of accounting, which requires us to recognize separately from goodwill the assets acquired and the liabilities assumed at their acquisition date fair values. While we use our best estimates and assumptions to accurately value assets acquired and liabilities assumed at the acquisition date as well as contingent consideration, where applicable, our estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, we record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recognized in our consolidated statements of operations. Accounting for business combinations requires our management to make significant estimates and assumptions, especially at the acquisition date including our estimates for intangible assets, contractual obligations assumed, pre-acquisition contingencies, and contingent consideration, where applicable. Although we believe the assumptions and estimates we have made are reasonable and appropriate, they

are based, in part, on historical experience and information obtained from the management of the acquired company and are inherently uncertain. Critical estimates in valuing certain acquired intangible assets under the income approach include growth in future expected cash flows from product sales, revenue growth rate, technology royalty rate, expected life of the technology acquired, customer retention rate and discount rates. Unanticipated events and circumstances may occur that may affect the accuracy or validity of such assumptions, estimates or actual results.

Goodwill

Goodwill represents the excess of purchase price and related costs over the value assigned to the net tangible and identifiable intangible assets of businesses acquired. Goodwill is not amortized but is reviewed annually on October 1 (or more frequently if impairment indicators arise) for impairment. To review for impairment, we first assess qualitative factors to determine whether events or circumstances lead to a determination that it is more likely than not that the fair value of our reporting unit is less than its carrying amount. Our qualitative assessment of the recoverability of goodwill, whether performed annually or based on specific events or circumstances, considers various macroeconomic, industry-specific and company-specific factors. Those factors include: (i) severe adverse industry or economic trends; (ii) significant company-specific actions; (iii) current, historical or projected deterioration of our financial performance; or (iv) a sustained decrease in our market capitalization below our net book value. After assessing the totality of events and circumstances, if we determine that it is not more likely than not that the fair value of our reporting unit is less than its carrying amount, no further assessment is performed. If we determine that it is more likely than not that the fair value of our reporting units is less than its carrying amount, we calculate the fair value of that reporting unit and compare the fair value to the reporting unit's net book value. If the fair value of the reporting unit is greater than its net book value, there is no impairment. Otherwise, we record a goodwill impairment charge for the amount by which the carrying value of the reporting unit exceeds its fair value up to the amount of the goodwill. Determining the fair value of a reporting unit involves the use of significant estimates and assumptions.

Long-lived Assets

Purchased finite-lived intangible assets are carried at cost less accumulated amortization. Amortization is recognized over the useful life on a straight-line method. Purchased indefinite-lived intangible asset are capitalized at fair value and assessed for impairment thereafter. Long-lived assets are reviewed for impairment annually on October 1 or whenever factors or changes in circumstances indicate that the carrying amounts of long-lived assets, including purchased intangible assets and property, plant and equipment, may not be recoverable. Factors we consider important which could trigger an impairment review include (i) significant under-performance relative to historical or projected future operating results, (ii) significant changes in the manner of our use of the acquired assets or the strategy for our overall business, and (iii) significant negative industry or economic trends. An impairment loss must be measured if the sum of the expected future cash flows (undiscounted and before interest) from the use and eventual disposition of the asset (or asset group) is less than the net book value of the asset (or asset group). The amount of the impairment loss will generally be measured as the difference between the net book value of the asset (or asset group) and the estimated fair value.

Leases

On January 1, 2021, the Company adopted ASU 2016-02, *Leases (Topic 842)* ("ASC 842"). Under the adoption of the new lease accounting standard, the Company elected practical expedients that allow entities to not reassess 1) initial direct costs, 2) lease classification for existing or expired leases and 3) lease definition for existing or expired contracts as of the effective date of January 1, 2021.

Upon adoption of ASC 842, the Company determines whether a contract is or contains a lease at contract inception by evaluating whether substitution rights exist and whether the Company obtains substantially all of the benefits and directs the use of the identified asset. When the Company determined a lease exists, the Company records a right-of-use asset ("ROU asset") and corresponding lease liability in the Consolidated Balance Sheets. ROU assets represent the Company's right to use an underlying asset for the lease term. Lease liabilities represent the Company's obligation to make lease payments arising from the lease. ROU assets are recognized at the commencement date of the lease at the value of the lease liability, adjusted for any prepayments, lease incentives received, and initial direct costs incurred. Lease liabilities are recognized at the commencement date of the lease based on the present value of remaining lease payments over the lease term. As the discount rate implicit in the lease is not readily determinable in most leases, the Company uses its incremental borrowing rate based on the information available at the commencement date of the lease in determining the present value of lease payments. Lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option.

The Company does not record lease contracts with a lease term of 12 months or less on its Consolidated Balance Sheets. Fixed lease costs associated with these short-term contracts are expensed on a straight-line basis over the lease term.

The Company does not record lease contracts acquired in a business combination with a remaining lease term of 12 months or less on its Consolidated Balance Sheets. Fixed lease costs associated with these short-term contracts are expensed on a straight-line basis over the lease term.

The Company recognizes lease expense for operating leases on a straight-line basis over the lease term. For finance leases, the Company recognizes amortization expense on the ROU asset and interest expense on the lease liability over the lease term.

The Company has lease agreements with non-lease components that relate to the lease components. The Company accounts for each lease component and any non-lease components associated with that lease component as a single lease component for all underlying asset classes. Accordingly, all costs associated with a contract that is or contains a lease are accounted for as lease costs.

Some leasing arrangements require variable payments that are dependent on usage, output, or may vary for other reasons, such as insurance and tax payments. These variable lease costs are recognized as incurred over the lease term.

The Company does not include significant restrictions or covenants in lease agreements, and residual value guarantees are generally not included within the Company's leases. See Note 10 — Leases.

Fair Value Measurements

The carrying amounts of cash, trade accounts receivable, prepaid expenses, other current assets, accounts payable, accrued liabilities and certain other current liabilities approximate fair value because of their short-term maturities. The carrying amounts of the 2018 Term Loans and 2018 Equipment Advances (as defined in Note 7 — Long-Term Debt) approximate fair value as the interest rate varies with the Prime Rate.

According to ASC 820, Fair Value Measurements and Disclosures, fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in an orderly transaction between market participants at the measurement date. The fair value hierarchy establishes three tiers, which prioritize the inputs used in measuring fair value as follows:

- Level 1** — Observable inputs, such as quoted prices in active markets for identical assets or liabilities;
- Level 2** — Inputs, other than quoted prices in active markets, that are observable either directly or indirectly; and
- Level 3** — Unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

Entities are permitted to choose to measure certain financial instruments and other items at fair value. The Company has not elected the fair value measurement option for any of the assets or liabilities that meet the criteria for this election.

Derivative Instruments

The Company recognizes all derivative instruments as either assets or liabilities in the Consolidated Balance Sheets at their respective fair values. The Company evaluates its debt and equity issuances to determine if those contracts or embedded components of those contracts qualify as derivatives requiring separate recognition in the Company's consolidated financial statements. The result of this accounting treatment is that the fair value of the embedded derivative is revalued as of each reporting date and recorded as a liability, and the change in fair value during the reporting period is recorded in other income, net in the Consolidated Statements of Operations.

The classification of derivative instruments, including whether such instruments should be recorded as assets/liabilities or as equity, is reassessed at the end of each reporting period. Derivative instrument assets and liabilities are classified in the Consolidated Balance Sheets as current or non-current based on whether or not net-cash settlement of the derivative instrument is expected within twelve months of the Consolidated Balance Sheets dates. When a derivative instrument is sold, terminated, exercised or expires, the gain or loss is recorded in the Consolidated Statements of Operations.

The Company did not have a derivative liability related to the share settlement obligation of the Company's convertible notes as of December 31, 2021 and 2020. See Note 7 — Long-Term Debt.

Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities are recognized when events or circumstances have occurred, and amounts are probable and estimable. The Company's accrued expenses and other current liabilities balances relate to accruals that are recurring in nature to the company's operations and primarily include accrual of routine operational related expenses, accrued payroll, other employee related liabilities, accrued interest related to debt, contract liabilities and other accrued liabilities. The Company also recognizes legal accruals in accrued expenses and other current liabilities for material litigation when payments are probable and estimable in accordance with ASC 450, Contingencies.

Warrant Liabilities

The Company accounts for warrants as either equity-classified or liability-classified instruments based on an assessment of the warrant's specific terms and applicable authoritative guidance in ASC 480, Distinguishing Liabilities from Equity ("ASC 480") and

ASC 815, Derivatives and Hedging ("ASC 815"). The assessment considers whether the warrants are freestanding financial instruments pursuant to ASC 480, meet the definition of a liability pursuant to ASC 480, and whether the warrants meet all of the requirements for equity classification under ASC 815, including whether the warrants are indexed to the Company's common stock, among other conditions for equity classification. This assessment, which requires the use of professional judgment, is conducted at the time of warrant issuance and as of each subsequent quarterly period end date while the warrants are outstanding.

For issued or modified warrants that meet all of the criteria for equity classification, the warrants are required to be recorded as a component of additional paid-in capital at the time of issuance. For issued or modified warrants that do not meet all the criteria for equity classification, the warrants are required to be recorded at their initial fair value on the date of issuance, and at each reporting period thereafter. Changes in the estimated fair value of the warrants are recognized as a non-cash gain or loss on the statements of operations. The Company redeemed all outstanding private and public warrants as of December 27, 2021.

Convertible Preferred Stock

Series A, B and C convertible preferred stock ("Convertible Preferred Stock") are classified in temporary equity as they contain terms that could require the Company to redeem them for cash at the option of the holder or the occurrence of other events not solely within the Company's control. The shares of Series A, B and C Convertible Preferred Stock were converted into Class A common stock upon consummation of the Business Combination.

Revenue Recognition

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2014-09, *Revenue from Contracts with Customers (Topic 606)* ("ASU 2014-09"). ASU 2014-09, combined with all subsequent amendments, which is collectively Accounting Standards Codification Topic 606 ("ASC 606"), Revenue from Contracts with Customers, provides guidance outlining a single five-step comprehensive revenue model in accounting for revenue from contracts with customers which supersedes all existing revenue recognition guidance, including industry-specific guidance. ASC 606 also requires additional disclosures about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to fulfill a contract. The Company adopted the new accounting guidance and related amendments (collectively, the "new revenue accounting standard") on January 1, 2020 using the modified retrospective method. As the Company did not have any revenue from contracts with any customers prior to the Company's adoption date, there was no accounting impact upon adoption.

Under ASC 606, the Company will recognize revenue to reflect the transfer of promised goods or services to customers in an amount that reflects the consideration to which the Company expects to be entitled in exchange for those goods or services. Through its current and anticipated offerings, the Company expects to generate revenue by providing the following services:

Launch Services — To provide rapid, global, and affordable launch services to satellite operators and governments in partnership with third-party spaceport providers globally. Our launch services includes services tied directly to our launch along with complementary services that are not part of our fixed pricing for which we charge a separate fee. We currently operate our launches from Pacific Spaceport Complex in Kodiak, Alaska and Cape Canaveral Space Force Station in Cape Canaveral, Florida. We plan to add additional launch sites in diverse locations based on our customers' inclination requirements and as we increase the frequency of launches.

Space Products — To design and provide space products based on the customers' needs for a successful satellite launch and other products that we may sell in the future. Currently we offer two in-space electric propulsion systems.

Space Services — To invest in building our portfolio of space services, which includes communication service and constellation services, which will be based on our network of spacecraft that customers can access for use in their business. Specifically, our space services encompass all aspects of hosted satellite and constellation services, including hosting customer payloads onto our spacecraft, and delivering services, such as communication and other services, to customers from our space platform.

As of December 31, 2021, the Company has only entered into contracts for launch services and space products. As of December 31, 2021, the Company is in early stages of developing our space services offerings which includes communication service and constellation services. The Company's contracts may provide customers with termination for convenience clauses, which may or may not include termination penalties. In some contracts, the size of the contractual termination penalty increases closer to the scheduled launch date. At each balance sheet date, the Company evaluates each contract's termination provisions and the impact on the accounting contract term, i.e., the period in which the Company has enforceable rights and obligations. This includes evaluating whether there are termination penalties and if so, whether they are considered substantive. The Company applies judgment in determining whether the termination penalties are substantive. No revenue has been recognized for the years ended December 31, 2021 and 2020.

Revenue for launch services and space products is expected to be recognized at a point in time when the Company has delivered the promised services or products to customers. Although the Company's contracts are anticipated to last anywhere from six to 24

months, depending on the number of launch services or units of products ordered, the delivery of services leading up to the launch within the contracts is short-term in nature, generally between 30 to 60 days. The timing of revenue recognition may differ from contract billing or payment schedules, resulting in revenues that have been earned but not billed (“unbilled revenue”) or amounts that have been collected, but not earned (“contract liabilities”).

Typical Contractual Arrangements

The Company expects to provide its services based upon a combination of a Statement of Work ("SOW") and an executed contract detailing the general terms and conditions. Services are expected to be provided based on a fixed price per launch service or units of space products as identified in the contract.

Performance Obligations and Transaction Price

At contract inception, an assessment of the goods and services promised in the contracts with customers is performed and a performance obligation is identified for each distinct promise to transfer to the customer a good or service (or bundle of goods or services). To identify the performance obligations, the Company considers all the goods or services promised in the contract regardless of whether they are explicitly stated or are implied by customary business practices. A contract for launch services generally requires the Company to provide an integrated service for each launch, which includes launch vehicle analysis and design, development and production, payload integration, launch preparation and launch support execution. The intention of the contract is to provide a full-service launch to the customer rather than providing separate deliverables of each of the services outlined above, and these services are interdependent and interrelated. The Company believes that each dedicated launch will represent one single performance obligation. A contract for space products generally requires the Company to provide integrated propulsion systems, which includes analysis and design, development and production. The intention of the contract is to provide a fully functional propulsion system to the customer and all the activities are interdependent and interrelated. The Company believes that the delivery of the propulsion system will represent one single performance obligation.

The transaction price is defined as the amount of consideration in a contract to which an entity expects to be entitled in exchange for transferring promised goods or services to a customer, which is a fixed price stated in the contract.

When a contract involves multiple launches or units, the Company will account for each launch or unit as a separate performance obligation, because the customer can benefit from each launch or unit on its own or with other readily available resources and the launch or unit is separately identifiable. The transaction price will be allocated to each performance obligation on an estimated relative standalone selling price basis. The Company’s process to estimate standalone selling prices will involve management’s judgment and will consider multiple factors such as prices charged for similar goods and services and the Company’s ongoing pricing strategy and policies.

Recognition of Revenue

The work performed by the Company in fulfilling the performance obligation is not expected to create an asset to the customer since the launch vehicle that is built to deliver the customer’s payload into orbit will not be owned by the customer or the propulsion systems that are built to thrust the customers’ satellite into orbit will not be owned by the customer until its delivered to the customer. The Company expects to recognize revenue upon completion of the performance obligations under its launch services and space products agreements. Contracts related to research and development activities are recognized as other income. See *Other Income, net*.

Other Policies, Judgments and Practical Expedients

Contract balances. Contract assets and liabilities represent the differences in the timing of revenue recognition from the receipt of cash from the Company’s customers and billings. Contract assets reflect revenue recognized and performance obligations satisfied in advance of customer billing. Contract liabilities relate to payments received in advance of the satisfaction of performance under the contract. Receivables represent rights to consideration that are unconditional. Such rights are considered unconditional if only the passage of time is required before payment of that consideration is due. The Company had no contract assets as of December 31, 2021 and 2020. The Company had contract liabilities of \$10.4 million as of December 31, 2021 and none as of December 31, 2020. Payment terms are expected to vary by customer and type of revenue contract.

Remaining performance obligations. Revenue allocated to remaining performance obligations represents the transaction price allocated to the performance obligations that are unsatisfied, or partially unsatisfied. It includes unearned revenue and amounts that will be invoiced and recognized as revenue in future periods and does not include contracts where the customer is not committed. Customers are not considered committed when they are able to terminate their contractual obligations to us without payment of a substantive penalty under the contract. Many of the Company’s contracts allow the customer to terminate the contract prior to launch or delivery without a substantive penalty, and therefore the enforceable contract is for a period less than the stated contractual term. Further, the Company has elected not to disclose the value of unsatisfied performance obligations for contracts with an original expected length of one year or

less. The Company had unsatisfied performance obligations of \$19.6 million as of December 31, 2021, which are expected to be recognized in 2022 and the first half of 2023. The Company had no unsatisfied performance obligations as of December 31, 2020.

Costs to obtain a contract. The Company recognizes an asset for the incremental costs of obtaining a contract with a customer. These costs will be ascribed to or allocated to the underlying performance obligations in the contract and amortized consistent with the recognition timing of the revenue for the underlying performance obligations. During the year ended December 31, 2021 and 2020, the Company did not recognize any expenses related to contract costs. The Company had no assets related to costs to obtain contracts as of December 31, 2021 and 2020.

For contract costs related to performance obligations with an amortization period of one year or less, the Company applies the practical expedient to expense these sales commissions when incurred. These costs are recognized as incurred within sales and marketing expenses on the accompanying Consolidated Statements of Operations.

Significant financing component. In certain arrangements, the Company may receive payment from a customer either before or after the performance obligation has been satisfied. Depending on the expected timing difference between the payment and satisfaction of performance obligations, the Company will assess whether a significant financing component exists.

For the year ended December 31, 2021 and 2020, the Company has not recognized any revenues with respect to the Company's launch services business of delivering payloads into low-earth orbit or space products. Contracts with governmental entities involving research and development milestone activities do not represent contracts with customers under ASC 606 and as such, amounts received are recorded in other income, net in the Consolidated Statements of Operations. The Company recorded \$1.5 million, \$ 2.7 million and \$0.3 million for the years ended December 31, 2021, 2020 and 2019, respectively.

Other Income, net

Other income, net, primarily consists of changes in fair value of mark to market derivative liabilities of convertible notes, public and private placement of warrants and contingent consideration, funding received from governmental entities, and one-time charges incurred during the period. The remaining balance is non-recurring charges that are outside of the Company's operations. The Company recognizes all derivative instruments, warrant liabilities and contingent consideration in the Consolidated Balance Sheets at their respective fair value at each reporting date, with measurement adjustments recorded in other income, net within the Company's Consolidated Statements of Operations. See Note 5 — Supplemental Financial Information.

Loss on Extinguishment of Convertible Notes

The Company recognized a total loss on extinguishment of convertible notes of \$133.8 million for the year ended December 31, 2021. No loss was recognized for the extinguishment of convertible notes for the year ended December 30, 2020 and 2019. On January 28, 2021, the Company settled all convertible notes outstanding as of December 31, 2020 through its Series C financing. Given that certain convertible notes were settled based on negotiated terms between the Company and the note holders, the Company concluded that such settlement should be treated as a privately negotiated debt settlement transaction where debt extinguishment accounting should be applied. Therefore, the Company recognized the loss on extinguishment of convertible notes, which represents the difference between the net carrying amount of the convertible notes at the time of extinguishment and the fair value of Series C convertible preferred stock issued to settle these convertible notes. See Note 7 — Long-Term Debt.

Research and Development

The Company incurs various direct costs in relation to the research and development of launch vehicles along with costs to build the facility to test such vehicles and spacecraft. Research and development costs consist primarily of production supplies, testing materials, personnel costs (including salaries and benefits), depreciation expense, overhead allocation (consisting of various support and facility costs), stock-based compensation and consulting fees. Research and development costs are expensed as incurred. For the years ended December 31, 2021, 2020 and 2019, the Company expensed research and development costs of \$80.4 million, \$27.5 million and \$40.1 million, respectively.

Stock-Based Compensation

The Company recognizes compensation expense for time-based restricted stock units ("RSUs") over the requisite service period based on the fair value of RSUs on the date of grant. The fair value of RSUs is the closing market price of Astra common stock on the date of grant. We recognize compensation expense for time-based stock options and employee stock purchase plan, based on the estimated grant-date fair value determined using the Black-Scholes valuation model over the requisite service period.

Certain stock options include service, market and performance conditions ("performance-based stock options" or "PSO"). The fair value of performance-based stock options is estimated on the date of grant using the Monte Carlo simulation model. Certain RSUs also include service and performance conditions ("performance-based units" or "PSU"). The fair value of performance-based units is the

closing market price of Astra common stock on the date of grant. Awards that include performance conditions are assessed at the end of each reporting period whether those performance conditions are met or probable of being met and involves significant judgement. For performance-based stock options, stock-based compensation expense associated with each tranche is recognized over the longer of (i) the expected achievement period for the operational milestone for such tranche and (ii) the expected achievement period for the related share price milestone determined on the grant date, beginning at the point in time when the relevant operational milestone is considered probable of being achieved. If such operational milestone becomes probable any time after the grant date, we will recognize a cumulative catch-up expense from the grant date to that point in time. If the related share price milestone is achieved earlier than its expected achievement period and the achievement of the related operational milestone, then the stock-based compensation expense will be recognized over the expected achievement period for the operational milestone, which may accelerate the rate at which such expense is recognized. For performance-based units, stock-based compensation expense associated with each tranche is recognized over the longer of the expected performance achievement period of individual performance milestones and the implicit service period when the achievement of each individual performance milestone becomes probable.

The Company does not apply an expected forfeiture rate and accounts for forfeitures as they occur. See Note 15 — Stock-based Compensation.

Income Taxes

The Company follows the asset and liability method of accounting for income taxes under ASC 740, Income Taxes (“ASC 740”). Deferred tax assets and liabilities are recognized for the expected future tax consequences of temporary differences between consolidated financial statement carrying amounts and the tax basis of assets and liabilities and net operating loss and tax credit carryforwards. Valuation allowances are established when necessary to reduce deferred tax assets to the amount expected to be realized.

The Company determines whether it is more likely than not that a tax position will be sustained upon examination. If it is not more likely than not that a position will be sustained, no amount of benefit attributable to the position is recognized. The tax benefit to be recognized of any tax position that meets the more likely than not recognition threshold is calculated as the largest amount that is more than 50% likely of being realized upon resolution of the contingency.

It is the Company’s policy to include interest and penalties related to unrecognized tax benefits as a component of income tax expense. The Company is currently not aware of any issues under review that could result in significant payments, accruals or material deviation from its position. See Note 9 — Income Taxes.

Earnings (Loss) per Share

Net loss per share is calculated using the two-class method required for participating securities and multiple classes of common stock. The Company considers convertible preferred stock to be participating securities as the holders have the right to participate in dividends with the common stockholders on a pro-rata, as converted basis. Prior to any dividends or earnings distribution to common stock, the holders of the Convertible Preferred Stock have a right to preferential dividends. Thus, losses are allocated to common stock and convertible preferred stock on a pro-rata, as converted basis following distribution of the preferential dividends to convertible preferred stockholders. Since application of the if-converted method results in anti-dilution, the two-class method is not applied to convertible preferred stock in the diluted earnings (loss) per share calculation. The dilutive effect of warrants, RSUs and stock options is computed using the treasury stock method. Diluted earnings (loss) per share excludes all dilutive potential shares if their effect is anti-dilutive. See Note 16 — Loss per Share.

Commitments and Contingencies

The Company accrues for claims and litigation when they are both probable and the amount can be reasonably estimated. Where timing and amounts cannot be reasonably determined, a range is estimated, and the lower end of the range is recorded. Legal costs incurred in connection with loss contingencies are expensed as incurred. See Note 12 — Commitments and Contingencies.

Note 3 — Acquisitions

Acquisition of Apollo Fusion, Inc.

On the Apollo Acquisition Date, we, through our wholly owned indirect subsidiary, merged with Apollo. The results of Apollo’s operations have been included in the consolidated financial statements since that date. Apollo designs, tests, manufactures and operates propulsion modules to enable satellites to orbit in space.

The acquisition-date fair value of the consideration transferred totaled \$70.8 million, net of cash acquired, which consisted of the following:

<i>Purchase Consideration (in thousands)</i>	As Reported September 30, 2021	Measurement Period Adjustment	As Adjusted Value
Cash paid for outstanding Apollo common stock and options	\$ 19,926	\$ —	\$ 19,926
Fair value of Astra Class A common stock issued	33,008	—	33,008
Fair value of contingent consideration	23,000	(4,600)	18,400
Total purchase consideration	75,934	(4,600)	71,334
Less: cash acquired	566	—	566
Total purchase consideration, net of cash acquired	<u>\$ 75,368</u>	<u>\$ (4,600)</u>	<u>\$ 70,768</u>

The fair value of the shares of Class A common stock issued in the Apollo Merger was determined based on the closing market price of the Company's Class A common stock on the Apollo Acquisition Date.

The vesting of all unvested stock options of Apollo granted prior to the Apollo Acquisition Date were accelerated prior to the acquisition and were then cancelled in exchange for a right of each option-holder to cash, equity and contingent consideration based on their pro-rata percentage, assuming all stock options of Apollo had been exercised.

The contingent consideration requires the Company to pay \$75.0 million of additional consideration to Apollo's former shareholders and option-holders, if Apollo meets certain customer revenue related milestones over a two and half year period ending on December 31, 2023. The contingent consideration is earned, which is a combination of total contract value and relevant payout ratio, if the contract with customer is entered into after the acquisition date and 25% of revenue under the contract is recognized by December 31, 2023 under ASC 606. Contingent consideration is payable on a quarterly basis based on the milestones achieved. The fair value of the contingent consideration arrangement at the acquisition date was \$18.4 million. We estimated the fair value of the contingent consideration using a Monte Carlo simulation model. This fair value measurement is based on significant inputs not observable in the market and thus represents a Level 3 measurement as defined in ASC 820. As of December 31, 2021, the contingent consideration recognized as a result of the acquisition of Apollo decreased to \$13.7 million as a result of changes in forecasted revenues subject to milestone payments and the passage of time.

An additional \$10.0 million of cash ("Cash Earnout") will be paid to employees of Apollo that joined Astra, subject to certain performance-based milestones, as amended. The Cash Earnout is accounted for as compensation expense over the requisite service period in the post-acquisition period as the payment is subject to the employees continued employment with the Company and is payable after the achievement of each performance-based milestones. The Company assessed the probability of success of each performance-based milestone and determined that the Company has achieved certain performance-based milestones and it is probable that certain remaining performance-based milestones will be met. The Company recognized \$5.8 million in compensation cost which was included in research and development expense in its Consolidated Statement of Operations for the year ended December 31, 2021. The Company also recorded \$3.9 million within accrued expenses and other current liabilities in its Consolidated Balance Sheet as of December 31, 2021.

In addition, the Company awarded 1,047,115 PSUs to employees of Apollo that joined Astra, subject to certain performance-based milestones, as amended, and other vesting provisions. The PSUs are accounted for as compensation expense over the requisite service period in the post-acquisition period as the vesting of PSUs is subject to time-based and performance-based vesting conditions. See Note 15 — Stock-based Compensation for additional information.

We allocated the fair value of the purchase consideration to the tangible assets, liabilities and intangible assets acquired, based on their estimated fair values. The excess purchase price over those fair values is recorded as goodwill. Our valuation assumptions of acquired assets and assumed liabilities require significant estimates, especially with respect to intangible assets. The purchase consideration allocation set forth herein is preliminary and may be revised as additional information becomes available during the measurement period which could be up to 12 months from the closing date of the acquisition. Any such revisions or changes may be material. Our preliminary allocation of the purchase price of Apollo, based on the estimated fair values of the assets acquired and liabilities assumed as of the acquisition date, is presented in the following table.

During the year ended December 31, 2021, the Company continued finalizing its valuations of the assets acquired and liabilities assumed in the acquisition of Apollo based on new information obtained about facts and circumstances that existed as of the acquisition date. During the year ended December 31, 2021, the Company recorded measurement period adjustments, reducing its acquisition date goodwill by approximately \$3.0 million primarily to decrease the fair value of contingent consideration by \$4.6 million and intangible assets by \$1.7 million based on the alignment of Apollo's accounting policies related to revenue recognition under the contract with customers which impacted the revenues forecasted for the valuation of contingent consideration and intangible assets acquired. In addition, the change to the preliminary amount of intangible assets resulted in a decrease in amortization expense and accumulated amortization of \$0.2 million, of which \$0.1 million relates to a previous reporting period.

<i>(in thousands)</i>	As Reported September 30, 2021	Adoption of ASU 2021-08	Measurement Period Adjustment	As Adjusted Estimated Values
Inventory	\$ 131	\$ —	\$ —	\$ 131
Prepaid and other current assets	796	—	—	796
Property, plant and equipment	996	—	—	996
Right of use assets	163	—	—	163
Goodwill	58,893	2,308	(2,950)	58,251
Intangible assets	17,000	—	(1,650)	15,350
Other non-current assets	75	—	—	75
Total assets acquired	78,054	2,308	(4,600)	75,762
Accounts payable	(950)	—	—	(950)
Accrued expenses and other current liabilities	(836)	(1,103)	—	(1,939)
Operating lease obligation	(163)	—	—	(163)
Other non-current liabilities	(737)	(1,205)	—	(1,942)
Total liabilities assumed	(2,686)	(2,308)	—	(4,994)
Fair value of net assets acquired	\$ 75,368	\$ —	\$ (4,600)	\$ 70,768

Goodwill is primarily attributable to the assembled workforce and anticipated synergies expected from the integration of the Apollo business. The synergies include operating efficiencies, and other strategic benefits projected to be achieved as a result of the Apollo Merger. Goodwill is not deductible for tax purposes.

There were no revenues recorded during the year ended December 31, 2021 related to Apollo. It was impracticable to determine the effect on net income attributable to Apollo as we had integrated a substantial portion of Apollo into our ongoing operations during the year. Transaction costs related to the Apollo Merger of \$4.0 million were included in general and administrative expense in the Consolidated Statement of Operations for the year ended December 31, 2021.

Intangible Assets

	Fair Value (in thousands)	Weighted-Average Amortization Periods (in years)
Developed technology	\$ 12,100	6
Customer contracts and related relationships	2,900	3
Order backlog	200	1
Tradename	150	2
Total identified intangible assets	\$ 15,350	

Developed technology relates to propulsion modules. We valued the developed technology using the relief-from-royalty method under the income approach. This method is based on the application of a royalty rate to forecasted revenue that are expected to be generated by developed technology. The economic useful life was determined based on the technology cycle related to the developed technology, as well as the cash flows over the forecast period.

Customer contracts and related relationships represent the fair value of future projected revenue that will be derived from sales of products to existing customers of Apollo. Customer contracts and related relationships were valued using the multi-period excess earnings method under the income approach. This method reflects the present value of the projected cash flows that are expected to be generated by the customer contracts and related relationships less charges representing the contribution of other assets to those cash flows. The economic useful life was determined based on historical customer turnover rates.

Order backlog represents business under existing contractual obligations. The fair value of backlog was determined using the multi-period excess earnings method under the income approach based on expected operating cash flows from future contractual revenue. The economic useful life was determined based on the expected life of the backlog and the cash flows over the forecast period.

Trade name relates to the “Apollo” trade name. The fair value was determined by applying the relief-from-royalty method under the income approach. This method is based on the application of a royalty rate to forecasted revenue under the trade name. The economic useful life was determined based on the expected life of the trade name and the cash flows anticipated over the forecast period.

We believe the amounts of purchased intangible assets recorded above represent the fair values of, and approximate the amounts a market participant would pay for, these intangible assets as of the Apollo Acquisition Date.

Unaudited Pro Forma Information

The following unaudited pro forma financial information presents combined results of operations for each of the periods presented, as if Apollo had been acquired as of the beginning of fiscal year 2020. The unaudited pro forma results include certain pro forma adjustments to revenue and net loss that were directly attributable to the acquisition including transaction costs and amortization of intangible assets. Transactions costs of approximately \$4.4 million are assumed to have occurred on January 1, 2020 and are recognized in the accompanying Consolidated Statements of Operations as if incurred in the year ended December 31, 2021. Of these transaction costs, \$0.4 million were incurred by Apollo and \$4.0 million were incurred by the Company. Intangible assets are assumed to be recognized at their assigned fair values as of the pro forma close date of January 1, 2020 and are amortized over their estimated useful lives. The amortization expenses were \$3.1 million and \$3.3 million for the years ended December 31, 2021 and 2020, respectively. The unaudited pro forma information presented below is for informational purposes only and is not necessarily indicative of our consolidated results of operations of the combined business had the acquisition actually occurred at the beginning of fiscal year 2020 or of the results of our future operations of the combined business.

<i>(in thousands)</i>	For The Year Ended December 31,			
	2021		2020	
Pro forma net revenue	\$	400	\$	322
Pro forma net loss and net loss attributable to common stockholders	\$	(255,268)	\$	(86,655)

Reverse Recapitalization.

On June 30, 2021, pre-combination Astra Space, Inc. and Holicity Inc. consummated the Business Combination contemplated by the BCA, with pre-combination Astra surviving the merger as a wholly owned subsidiary of Holicity. Upon consummation of the Business Combination, Holicity changed its name to Astra Space, Inc., and pre-combination Astra changed its name to Astra Space Operations, Inc.

Immediately following the Business Combination, there were 198,090,903 shares of Class A common stock and 56,239,189 shares of Class B common stock issued and outstanding with a par value of \$0.0001. Additionally, there were outstanding options to purchase an aggregate of 5,993,412 shares of Class A common stock and outstanding warrants to purchase 15,813,829 shares of Class A common stock.

The Business Combination was accounted for as a reverse recapitalization in accordance with GAAP as pre-combination Astra has been determined to be the accounting acquirer. Under this method of accounting, while Holicity was the legal acquirer, it has been treated as the “acquired” company for financial reporting purposes. Accordingly, the Business Combination was treated as the equivalent of pre-combination Astra issuing stock for the net assets of Holicity, accompanied by a recapitalization. The net assets of Holicity were stated at historical cost, with no goodwill or other intangible assets recorded. Operations prior to the Business Combination are those of pre-combination Astra. Reported shares and earnings per share available to holders of the Company’s common stock, prior to the Business Combination, have been retroactively restated as shares reflecting the exchange ratio established in the BCA (approximately one pre-combination Astra share to 0.665 of the Company's shares).

The most significant change in the post-combination Company’s reported financial position and results was an increase in cash, net of transactions costs, of \$463.6 million, including \$200.0 million in gross proceeds from the private placements (the “PIPE”). In connection with the Business Combination, \$25.2 million of transaction costs were paid on the Closing Date. Additionally, on the Closing Date, the Company repaid the short-term promissory notes with Pendrell (the “Bridge Loan”) of \$10.4 million, which included principal of \$10.0 million and end of term fee of \$0.4 million. The Company also repaid the outstanding principal and interest of \$4.6 million for the term loan and equipment advances with Silicon Valley Bank. Refer to Note 7 – Long-term Debt.

The Company incurred \$25.5 million in transaction costs relating to the merger with Holicity, of which \$23.3 million has been recorded against additional paid-in capital in the Consolidated Balance Sheets and the remaining amount of \$2.2 million was recognized as general and administrative expenses on the Consolidated Statements of Operations. On the Closing Date of the Business Combination, the Company recorded a liability related to the public and private placement warrants of \$56.8 million, with an offsetting entry to additional paid-in capital. In relation to the public and private placement warrants, the Company recognized a portion of pre-combination Astra’s capitalizable transaction costs relating to the merger with Holicity, using the relative fair value method, as general and administrative expenses in the Consolidated Statements of Operations.

Upon closing of the Business Combination, the shareholders of Holicity, including Holicity founders, were issued 37,489,019 shares of Class A common stock. In connection with the Closing, holders of 10,981 shares of common stock of Holicity were redeemed at a price per share of \$10.00. In connection with the Closing 20,000,000 shares were issued to PIPE investors at a price per share of \$10.00.

The number of shares of Class A common stock issued immediately following the consummation of the Business Combination were:

Common stock of Holicity	29,989,019
Holicity founder shares	7,500,000
Shares issued in PIPE	20,000,000
Business Combination and PIPE shares	57,489,019
Pre-combination Astra shares	140,601,884
Total shares of Class A common stock immediately after Business Combination	198,090,903

In addition, in connection with the consummation of the Business Combination, 56,239,189 shares of Class B common stock were issued to two executive officers and founders of the Company: Chris Kemp and Adam London in exchange for an aggregate 73,699,647 shares of common stock and an aggregate 10,870,562 shares of Founders Preferred Stock of pre-combination Astra.

Note 4 — Recently Issued and Recently Adopted Accounting Pronouncements

Recently Issued Accounting Pronouncements Not Yet Adopted

In March 2020, the FASB issued ASU No. 2020-04, Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting. This temporary guidance provides optional expedients and exceptions for applying US GAAP to contracts, hedging relationships and other transactions that reference London Interbank Offered Rate ("LIBOR") or another reference rate expected to be discontinued. ASU 2020-04 is effective from March 12, 2020 and may be applied prospectively through December 31, 2022. The Company is currently evaluating the impact of adopting this guidance.

Recently Adopted Accounting Guidance

In February 2016, the Financial Accounting Standards Board ("FASB") issued ASU 2016-02, Leases (Topic 842) ("ASU 2016-02"), and since that date has issued subsequent amendments to the initial guidance intended to clarify certain aspects of the guidance and to provide certain practical expedients entities can elect upon adoption. The principle of ASU 2016-02 is that a lessee should recognize assets and liabilities that arise from leases. Lessees will need to recognize a right-of-use asset and a lease liability for all leases (other than leases that meet the definition of a short-term lease). The lease liability will be equal to the present value of lease payments. The right-of-use asset will be based on the liability, with differences related to deferred rent and initial direct costs, etc. For income statement purposes, ASU 2016-02 requires leases to be classified as either operating or finance. Operating leases will result in a straight-line expense pattern while finance leases will result in a front-loaded expense pattern. ASU 2016-02 is effective for the Company beginning January 1, 2022. As of January 1, 2021, the Company adopted Topic 842 using the modified retrospective approach and as a result will not restate prior periods. The cumulative effect of the changes made to the January 1, 2021 Consolidated Balance Sheet for the adoption of ASU 2016-02 was the addition of a right-of-use asset of \$4.6 million and a lease liability of \$4.7 million. See Note 10 — Leases.

In June 2016, the FASB issued ASU No. 2016-13, Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments ("ASU 2016-13"), which requires measurement and recognition of expected credit losses for financial assets held at amortized cost, including trade receivables. ASU 2016-13 replaces the existing incurred loss impairment model with an expected loss model that requires the forward-looking information to calculate credit loss estimates. It also eliminates the concept of other-than-temporary impairment and requires credit losses related to available-for-sale debt securities to be recorded through an allowance for credit losses rather than as a reduction in the amortized cost basis of the securities. These changes will result in more timely recognition of credit losses. The Company adopted ASU 2016-13 using the modified retrospective method on January 1, 2021. The adoption of ASU 2016-13 did not have a material impact on the Company's consolidated financial position, operating results or cash flows.

In December 2019, the FASB issued ASU No. 2019-12, Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes ("ASU 2019-12"), which simplifies the accounting for income taxes. The standard is effective for annual periods, and interim periods within those years, beginning after December 15, 2020. The Company adopted ASU 2019-12 on January 1, 2021. The adoption did not have a material impact on the Company's consolidated financial statements.

In August 2020, the FASB issued ASU 2020-06, Debt — Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity ("ASU 2020-06"), which simplifies the accounting for convertible instruments by removing the separation models for (1) convertible instruments with a cash conversion feature and (2) convertible instruments with a beneficial conversion feature ("BCF"). As a result, a convertible debt instrument can be accounted for as a single liability measured at its amortized cost under certain circumstances. These changes may reduce reported interest expense and increase reported net income for entities that have issued

a convertible instrument where the embedded conversion option was separated according to beneficial conversion or cash conversion guidance. ASU 2020-06 also requires the application of the if-converted method for calculating diluted earnings per share for convertible instruments and the treasury stock method will be no longer available. The Company adopted ASU 2020-06 as of January 1, 2021 using a modified retrospective transition method. In transition, the Company was required to apply the guidance to all impacted financial instruments that were outstanding as of January 1, 2021 with the cumulative effect recognized as an adjustment to the opening balance of accumulated deficit. As a result of adopting ASU 2020-06, the Company made certain adjustments to its accounting for certain outstanding convertible notes issued in 2020 with separately recognized BCFs. The adoption of ASU 2020-06 resulted in the re-combination of the liability and equity components of these convertible notes into a single liability instrument, which required the Company to record a \$9.7 million decrease in additional paid in capital from the derecognition of the BCFs, a \$9.0 million increase in debt from the derecognition of the discount associated with the BCFs, and a \$0.7 million cumulative effect, net of tax effects, decrease to the opening balance of its accumulated deficit as of January 1, 2021 upon transition. Since the Company had a net loss for the year ended December 31, 2021, the convertible notes were determined to be anti-dilutive and therefore had no impact to basic or diluted net loss per share for the period as a result of adopting ASU 2020-06.

In October 2021, the FASB issued ASU No. 2021-08, Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers ("ASU 2021-08"), which improves the accounting for acquired revenue contracts with customers in a business combination by addressing inconsistency in practice related to (1) the recognition of an acquired contract liability (deferred revenue); and (2) payment terms and their effect on subsequent revenue recognized by the acquirer. The amendments in this update require an entity (acquirer) to recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with Topic 606. The ASU is effective for annual periods beginning after December 15, 2022, including interim periods within those fiscal years. Adoption of the ASU should be applied prospectively. Early adoption is also permitted, including adoption in an interim period. If early adopted, the amendments are applied retrospectively to all business combinations for which the acquisition date occurred during the fiscal year of adoption. As of October 1, 2021, the Company early adopted ASU 2021-08 using the retrospective approach to all business combination for which acquisition date occurred during the year ended December 31, 2021. The cumulative effect of the changes made to the Consolidated Balance Sheet for the adoption of ASU 2021-08 was a \$2.3 million increase in contract liabilities and goodwill related to the Company's acquisition of Apollo.

Note 5 — Supplemental Financial Information

Inventories

<i>in thousands</i>	As Of December 31,	
	2021	2020
Raw materials	\$ 5,775	\$ 649
Work in progress	941	—
Finished goods	959	—
Inventories	<u>\$ 7,675</u>	<u>\$ 649</u>

The Company's inventories included materials which are necessary to construct the Company's launch vehicles to provide launch services to customers. Costs related to the construction of research and development launch vehicles are recorded as research and development expenses when incurred. Under the Company's business model, launch vehicles are manufactured to deliver customer payloads of various sizes to various locations in low-earth orbit. There were \$6.7 million of inventory net realizable value write downs recorded during the year ended December 31, 2021. There were no inventory net realizable value write downs recorded during the year ended December 31, 2020 and 2019.

Property, Plant and Equipment, net

Presented in the table below are the major classes of property, plant and equipment:

<i>in thousands</i>	As Of December 31,	
	2021	2020
Construction in progress	\$ 39,246	\$ —
Computer and software	3,092	1,440
Leasehold improvements	14,177	13,873
Research and development equipment	8,935	4,903
Production equipment	10,442	8,174
Furniture and fixtures	1,001	466
Kodiak Spaceport	—	2,079
Total property, plant and equipment	76,893	30,935
Less: accumulated depreciation	(10,577)	(6,866)
Property, plant and equipment, net	<u>\$ 66,316</u>	<u>\$ 24,069</u>

Construction in progress relates mainly to the ongoing development of our manufacturing facility located in Alameda, California.

Depreciation expense is recorded within operating expenses in the Consolidated Statements of Operations and amounted to \$3.7 million, \$3.3 million and \$2.3 million for the years ended December 31, 2021, 2020 and 2019, respectively. No impairment charges were recorded for the year ended December 31, 2021, 2020 and 2019.

Kodiak Spaceport

On June 19, 2019, the Company entered into an agreement with Alaska Aerospace Corporation (“AAC”) to develop a commercial launch pad site (“Launch Pad”) in Kodiak, Alaska. The Launch Pad development includes construction of the Launch Pad and obtaining Federal Aviation Administration spaceport license approval for launch operations beginning in August 2019. The Launch Pad’s costs were jointly funded by AAC and the Company. Throughout the term of the agreement, the State of Alaska retains ownership of the developed Launch Pad site and the Company leases it.

The Company’s involvement in the construction of the Launch Pad, inclusive of the land, resulted in the Company being recognized as the owner of the Launch Pad during the lease term. Prior to the adoption of ASC 842, the arrangement was accounted for as a build-to-suit lease under ASC 840 — Leases. The total construction costs of \$2.1 million were capitalized within property, plant and equipment, net on the Consolidated Balance Sheet, and were depreciated on a straight-line basis over the life of the lease term. AAC’s contributions of \$0.8 million were recorded as a financing obligation which was included in other non-current liabilities on the Company’s Consolidated Balance Sheets to be released at the end of the lease term.

Upon adoption of ASC 842 on January 1, 2021, the Company derecognized the Kodiak Spaceport asset of \$2.1 million, the accumulated depreciation of \$0.4 million, and the financing obligation of \$0.8 million, with an adjustment to equity for the difference. The Company also recognized a right-of-use asset of \$0.9 million for the Kodiak Spaceport lease. No lease payments remained to be paid as of the transition date. As such, equity was adjusted against the right-of-use asset. See Note 10 — Leases.

Accrued Expenses and Other Current Liabilities

<i>in thousands</i>	As Of December 31,	
	2021	2020
Employee compensation and benefits	\$ 9,927	\$ 484
Contract liabilities	10,162	—
Construction in progress related accruals	3,726	—
Accrued expenses	3,464	2,751
Other (miscellaneous)	2,620	1,155
Accrued expenses and other current liabilities	<u>\$ 29,899</u>	<u>\$ 4,390</u>

Other Non-Current Liabilities

<i>in thousands</i>	As Of December 31,	
	2021	2020
Fair value of contingent consideration	\$ 13,700	\$ —
Contract liabilities	149	122
Other (miscellaneous)	750	1,563
Other non-current liabilities	<u>\$ 14,599</u>	<u>\$ 1,685</u>

Other Income, Net

<i>in thousands</i>	For The Year Ended December 31,		
	2021	2020	2019
Gain on change in fair value of public and private placement of warrants	\$ 25,681	\$ —	\$ —
Gain on forgiveness of PPP note	4,850	—	—
Gain on change in fair value of contingent consideration	4,700	—	—
Gain (loss) on mark to market derivatives	—	8,145	(464)
Other (miscellaneous)	815	2,715	740
Other income, net	<u>\$ 36,046</u>	<u>\$ 10,860</u>	<u>\$ 276</u>

Note 6 — Goodwill and Intangible Assets
Goodwill
in thousands

Balance as of December 31, 2020	\$ —
Apollo Merger	58,251
Balance as of December 31, 2021	<u>\$ 58,251</u>

Intangible Assets

<i>in thousands</i>	Carrying Amount	Accumulated Amortization	Net Book Value
As of December 31, 2021:			
Definite-lived intangible assets			
Developed technology	\$ 12,100	\$ 1,008	\$ 11,092
Customer contracts and related relationship	2,900	483	2,417
Order backlog	200	100	100
Trade names	150	38	112
Intangible assets subject to amortization	<u>15,350</u>	<u>1,629</u>	<u>13,721</u>
Indefinite-lived intangible assets			
Trademarks	4,200	—	4,200
Total	<u>\$ 19,550</u>	<u>\$ 1,629</u>	<u>\$ 17,921</u>

There were no intangible assets as of December 31, 2020. Based on the amount of intangible assets as of December 31, 2021, the expected amortization expense for each of the next five years and thereafter is as follows:

<i>in thousands</i>	Expected Amortization Expense
2022	\$ 3,158
2023	3,021
2024	2,500
2025	2,017
2026	2,017
Thereafter	1,008
Total intangible assets	<u>\$ 13,721</u>

Note 7 — Long-Term Debt

The Company's debt obligations consist of the following:

<i>in thousands</i>	As of			
	December 31, 2021		December 31, 2020	
	Principal	Unamortized Discount	Principal	Unamortized Discount
Term loan	\$ —	\$ —	\$ 2,800	\$ —
Equipment advances	—	—	3,636	—
Paycheck Protection Program note	—	—	4,850	—
Convertible notes	—	—	59,835	12,200
Total debt	—	—	71,121	—
Less: debt discount	—	—	(12,200)	—
Less: current portion	—	—	(51,635)	—
Total long-term debt book value, net	<u>\$ —</u>	<u>—</u>	<u>\$ 7,286</u>	<u>—</u>

There is no short-term and long-term debt outstanding as of December 31, 2021. Debt issuance costs were not material for any debt obligations individually, or in the aggregate, for the issuances of the above debt obligations. Therefore, debt issuance costs were expensed upon the issuance of respective debt obligations.

Current portion of long-term debt outstanding as of December 31, 2020 includes those principal balances and unamortized debt discount expected to be repaid within twelve months from December 31, 2020.

In connection with the Business Combination, all outstanding debt with the exception of the Paycheck Protection Program note were settled on June 30, 2021. Refer to Note – 3 Acquisitions. In August 2021, the Company's application for forgiveness of Paycheck Protection Program was approved in the full amount.

Term Loan and Equipment Advances

On December 25, 2018, the Company entered into a loan agreement (the "2018 Loan Agreement") with Silicon Valley Bank ("SVB"). Pursuant to the 2018 Loan Agreement, the Company can borrow up to a total of \$3.0 million term loans ("2018 Term Loans") and \$7.0 million equipment loans ("2018 Equipment Advances") with access period ended on April 30, 2020 for 2018 Term Loans and June 30, 2019 for 2018 Equipment Advances. For the 2018 Term Loans, monthly payments of interest only were required to be made commencing on the first day of the month following the month in which the funding occurs with respect to such term loan, and continuing thereafter on the first day of each successive calendar month, through April 30, 2020. Commencing May 1, 2020 and continuing thereafter on the first day of each successive calendar month through its maturity date, monthly payments of equal principal and accrued interest are required to be remitted. For each equipment advance, commencing on the first day of the month following the month in which the funding date occurs with respect to such equipment advance, and continuing thereafter on the first day of each successive calendar month through its equipment maturity dates, monthly payments of equal principal and accrued interest are required to be remitted. The 2018 Term Loans bear an interest rate equal to the greater of (i) 5.25% or (ii) 1.5% above the Prime Rate. The 2018 Equipment Advances bear an interest rate equal to the greater of (i) 5.25% or (ii) 1.0% above the Prime Rate. As of June 30, 2021 and December 31, 2020, the interest rate for the 2018 Term Loans and the 2018 Equipment Advances was 5.25%. The Prime Rate is defined as the rate of interest per annum from time to time published in the money rates section of The Wall Street Journal or any successor publication. Interest is payable monthly and compounded monthly based on a 360-day year.

Borrowings under the 2018 Loan Agreement are secured by a security interest in all goods, equipment, inventory, contract rights or rights to payment of money, leases, license agreements, franchise agreements, general intangibles, accounts, documents, instruments, chattel paper, cash, deposit accounts, fixtures, letters of credit rights, securities, and all other investment property, supporting obligations, and financial assets, whether now owned or hereafter acquired, wherever located.

In connection with the execution of the 2018 Loan Agreement, the Company entered into a 2018 warrant agreement which granted certain warrants to SVB (the "Warrants"). The Warrants were issued in one initial tranche on December 25, 2018 and three subsequent tranches in 2019 each time the Company made an additional debt draw under the 2018 Loan Agreement. Pursuant to the warrant agreement, SVB has the option to purchase an aggregate of 480,520 shares of Class A common stock. The warrants have a weighted average exercise price of \$0.24 per share and are exercisable for a period of 10 years. The Company accounted for all the Warrants issued as equity instruments since the Warrants are indexed to the Company's common shares and meet the criteria for classification in stockholders' equity. In July 2021, SVB exercised all the outstanding Warrants and the Company issued 472,113 shares of Company's Class A Common Stock, net of exercise price.

The issuances under the 2018 Term Loan and 2018 Equipment Advances are as follows:

<i>in thousands</i>	Principal	
Term Loan	\$	3,000
Equipment Advances – January 31, 2019 Issuance		2,410
Equipment Advances – April 29, 2019 Issuance		2,428
Equipment Advances – June 27, 2019 Issuance		2,162
Total	\$	10,000

Paycheck Protection Program Note (“PPP Note”)

On April 20, 2020, the Company received loan proceeds of approximately \$4.9 million under the Paycheck Protection Program (“PPP”), offered by the U.S. Small Business Administration (the “SBA”) pursuant to Title 1 of the Coronavirus Aid, Relief and Economic Security Act (the “CARES Act”). The PPP Note proceeds were available to be used to pay for payroll costs, including salaries, commissions, and similar compensation, group health care benefits, and paid leaves, rent and utilities, and mortgage interest payments. The PPP Note was subject to forgiveness to the extent proceeds were used for payroll costs, including payments required to continue group health care benefits, and certain rent, utility, and mortgage interest expenses (collectively, “Qualifying Expenses”), pursuant to the terms and limitations of the PPP Note.

The Company used the PPP Note amount intended for Qualifying Expenses. In the first quarter of the year ended December 31, 2021, the Company submitted a forgiveness application to its lender seeking full forgiveness of the PPP Note. On August 24, 2021, the Company received notice from the lender that the Small Business Administration has approved the application for forgiveness of the PPP Note in the full amount. For the year ended December 31, 2021, the Company recorded a gain of \$4.9 million related to forgiveness of PPP Note in other income, net within the Consolidated Statement of Operations. No such gain was recorded for the years ended December 31, 2020 and 2019.

Convertible Notes

Issuance of Convertible Notes

From June 2019 through July 2019, the Company issued \$14.8 million of convertible promissory notes (the “June 2019 Convertible Notes”) to certain investors. The June 2019 Convertible Notes mature on June 10, 2021 and accrue interest at 2.37% or 2.13%, compounded annually on basis of 360-days year of twelve 30-day months. Principal and any accrued but unpaid interest are due and payable at maturity.

From October 2019 through December 2020, the Company issued \$45.0 million of convertible promissory notes (the “October 2019 Convertible Notes”) and collectively with the June 2019 Convertible Notes, the “Convertible Notes”) to certain investors. The October 2019 Convertible Notes mature on October 1, 2021 and accrue interest at 1.69%, 1.59% or 1.85%, compounded annually on basis of 360-days year of twelve 30-day months. Principal and any accrued but unpaid interest are due and payable at maturity.

Pursuant to the terms of the Convertible Notes, the Convertible Notes will convert, including outstanding principal and any accrued but unpaid interest, with no fractional shares and proper notice based on the below:

Maturity: Upon maturity, convert into the shares issued in the then most recent Preferred Stock financing at the lowest price per share of such shares in such financing at the option of the holders.

Next Equity Financing: Upon the Company’s next equity financing yielding at least \$20 million in a single transaction for the June 2019 Convertible Notes and \$50 million in a single transaction for the October 2019 Convertible Notes (“Next Equity Financing”), the Convertible Notes shall automatically convert into those equity securities issued at a price lesser of 80% of the qualified financing price or a per share price reflecting a pre-money, fully-diluted valuation of \$350 million for the June 2019 Convertible Notes and \$450 million for the October 2019 Convertible Notes.

Change of Control: In the event of a change of control, immediately prior, the note shall convert into cash equal to 1.5 times the outstanding principal and any accrued but unpaid interest or at the option of the holder convert into common stock at a price per share equal to the lesser of 80% of the change of control price per common stock or a per share price reflecting a pre-money, fully-diluted valuation of \$500 million for the June 2019 Convertible Notes and \$450 million for the October 2019 Convertible Notes.

Upon maturity, the holders of the Convertible Notes have the option to extend the maturity date for another 2 years.

The Company determined that the contingent share-settled redemption upon the Next Equity Financing or Change of Control at 80% of the next round price and the contingent redemption upon Change of Control at 1.5 times of the outstanding principal and accrued interest were embedded derivatives (“Redemption Obligation”) that required bifurcation as derivative liabilities as well as upon issuance

a reduction in the carrying value of the underlying note. The Company measures the bifurcated compound derivative at fair value based on significant inputs not observable in the market, which causes them to be classified as Level 3 measurements within the fair value hierarchy. Redemption Obligation derivatives are determined to be material at each issuance date. The bifurcated derivative was bifurcated from each note at the amount of the fixed premium, and the expected premium based on likelihood of the Next Equity Financing at different dates which result in differing levels of premium.

The bifurcated embedded derivative had a zero fair value as of December 31, 2020 and through the settlement of the Convertible Notes in January 2021. The following tables present changes in fair value of the embedded compound derivative (associated with the Company's Convertible Notes) for the year ended December 30, 2021 and 2020:

<i>in thousands</i>	Embedded Derivative in Convertible Notes	
	2021	2020
Balance – December 31	\$ —	\$ 4,698
Additions	—	3,447
Measurement adjustments	—	(8,145)
Balance – December 31	<u>\$ —</u>	<u>\$ —</u>

The measurement adjustments are recognized in other income, net within the Company's Consolidated Statements of Operations. To determine the fair value of the embedded derivatives, the Company used an income approach considering potential future conversion and calibrated a discount rate to be consistent with the price paid at Issuance. The income approach considered assumptions including preferred stock values, volatilities, risk free rates, and discount rates/additional discount factors calibrated to be consistent with the price paid at Issuance. Additionally, other key assumptions included probability and timing of financing or the note remaining outstanding through maturity. The following table sets forth the range of inputs for the significant assumptions utilized to determine the fair value of embedded derivatives at each issuance:

<i>At Issuance</i>	June 2019 Convertible Notes	October 2019 Convertible Notes	Q4 2020 Convertible Notes
Preferred stock value	\$ 1.30	\$ 1.30	\$ 1.98 – 2.32
Risk free rates	1.8% – 2.0%	0.9% – 1.8%	0.1 %
Risk-adjusted discount rate	15.0 %	15.0 %	15.0 %
Additional discount factor	0.1% – 0.9%	0.9% – 4.7%	4.7 %
Preferred volatility	15.3 %	15.3 %	20 %

Prior to the adoption of ASU 2020-06 on January 1, 2021 and upon issuance of the Convertible Notes, the Company assessed whether an immediate beneficial conversion feature ("BCF") existed with regards to the non-contingent conversion option upon maturity to convert the Convertible Notes into the shares issued in the most recent Preferred Stock financing (i.e., Series B Preferred Stock) at the issuance of the Convertible Notes. A beneficial conversion feature exists when convertible instruments are issued with an initial "effective conversion price" that is less than the fair value of the underlying stock. The Company determined that there was no BCF associated with such conversion feature upon issuance except for the Convertible Notes issued on October 29, 2020, November 12, 2020, November 16, 2020, November 19, 2020, December 1, 2020 and December 11, 2020 ("Q4 2020 Convertible Notes"). At the commitment dates, the Company determined the conversion feature related to the Q4 2020 Convertible Notes to be beneficial to the investors. The following table summarizes the calculation of the BCFs as of the issuance dates of these Q4 2020 Convertible Notes, which continued to be presented in additional paid in capital as of December 31, 2020:

				As of December 31, 2020
	Effective Conversion Price	Fair Value of Series B Preferred Stock	Number of Shares upon Conversion (pre-combination)	BCF in thousands
October 29, 2020	\$ 1.33	\$ 2.32	1,125,281	\$ 1,113
November 12, 2020	1.33	2.32	4,456,114	4,407
November 16, 2020	1.33	2.32	871,378	862
November 19, 2020	1.33	2.32	2,504,466	2,476
December 1, 2020	1.33	2.32	120,030	119
December 11, 2020	1.33	2.32	750,188	742
Total				<u>\$ 9,719</u>

Prior to the adoption of ASU 2020-06 on January 1, 2021, the Company recorded a total BCF of \$9.7 million, representing the intrinsic value of the in-the-money portion of the non-contingent conversion option upon maturity, in equity, with an offsetting reduction to the carrying amount of the Q4 2020 Convertible Notes as a debt discount upon issuance. The equity component of \$9.7 million was not re-measured as long as it continued to meet the conditions for equity classification. The debt discounts resulting from the accounting for a beneficial conversion option and the fair value of embedded derivative at issuance were amortized using the effective interest method over the term of the Q4 2020 Convertible Notes.

For all other Convertible Notes, the debt discount resulting from the bifurcation of the embedded derivatives at issuance was amortized into interest expense using the effective interest method over the term of the Convertible Notes. All Convertible Notes were classified as current liabilities as of December 31, 2020.

On January 1, 2021, the Company elected to adopt ASU 2020-06 based on a modified retrospective transition method. Under such transition, prior-period information has not been retrospectively adjusted. In accounting for the Q4 2020 Convertible Notes after the adoption of ASU 2020-06, the BCFs and unamortized debt discount associated with the recognition of such BCFs were derecognized from the Consolidated Balance Sheets as of January 1, 2021, resulting in a \$9.0 million increase in the carrying amount of the Q4 2020 Convertible Notes, a \$9.7 million decrease in additional paid in capital, and a \$0.7 million cumulative decrease to the opening balance of its accumulated deficit as of January 1, 2021, net of tax effects.

The issuances under the Convertible Notes are as follows:

<i>in thousands</i>	Maturity Date of June 10, 2021	
	Principal	Interest Rate
June 10, 2019	\$ 12,950	2.37 %
June 12, 2019	500	2.37 %
June 13, 2019	400	2.37 %
July 19, 2019	235	2.13 %
July 25, 2019	750	2.13 %
Total	<u>\$ 14,835</u>	

<i>in thousands</i>	Maturity Date of October 01, 2021	
	Principal	Interest Rate
October 1, 2019	\$ 14,000	1.69 %
February 6, 2020	6,000	1.59 %
February 12, 2020	5,000	1.59 %
February 28, 2020	6,900	1.59 %
October 29, 2020	1,500	1.85 %
November 12, 2020	5,940	1.85 %
November 16, 2020	1,162	1.85 %
November 19, 2020	3,338	1.85 %
December 1, 2020	160	1.85 %
December 11, 2020	1,000	1.85 %
Total	<u>\$ 45,000</u>	

Settlement of Convertible Notes

On January 28, 2021, the Company entered a stock purchase agreement with certain investors to close the issuance of Series C convertible preferred stock at a cash purchase price of \$6.62 per share and settle all outstanding Convertible Notes through Series C convertible preferred stock at a conversion price of \$1.33 or \$1.71 per share ("Series C Financing"). The Company issued 38,323,292 shares of Series C Convertible Preferred Shares (pre-combination) for conversion of outstanding Convertible Notes of \$61.0 million.

The June 2019 Convertible Notes were settled pursuant to the contractual conversion upon the Next Equity Financing feature with such financing yielding at least \$20 million in a single transaction. The Company credited the net carrying amount of the June 2019 Convertible Notes of \$14.5 million, including any unamortized debt discount, to Series C convertible preferred stock with no gain or loss recognized.

The October 2019 Convertible Notes were settled based on negotiated terms between the Company and the note holders as the Series C Financing did not meet the definition of Next Equity Financing for the October 2019 Convertible Notes. The Company assessed the economics of the settlement of the October 2019 Convertible Notes and concluded that it should be treated as a privately negotiated debt redemption/settlement transaction where debt extinguishment accounting should be applied. Therefore, the Company derecognized the net carrying amount, including any unamortized debt discount, of the October 2019 Convertible Notes of \$42.6 million and

recognized the Series C convertible preferred stock issued specifically to settle the October 2019 Convertible Notes at fair value as the reacquisition consideration. Accrued and unpaid interest of \$0.6 million was settled and not paid in cash and therefore it was included in calculating the extinguishment loss. The difference between the net carrying amount of the October 2019 Convertible Notes, plus accrued and unpaid interest, and the reacquisition consideration was recorded as a loss on extinguishment within other income, net in the Consolidated Statement of Operations.

The Company issued in aggregate 26,727,308 shares of Series C convertible preferred stock (pre-combination) to settle the October 2019 Convertible Notes. The fair value of the Series C convertible preferred stock was determined to be \$176.9 million using the cash purchase price of \$6.62 per share on January 28, 2021. These October 2019 Convertible Notes had a carrying amount plus accrued and unpaid interest of \$43.2 million upon settlement. The difference of \$133.8 million was recognized as a loss on extinguishment on the Company's Consolidated Statement of Operations for the year ended December 31, 2021.

Bridge Loan

On May 20, 2021, the Company entered into a short-term promissory note (the "Bridge Loan") with Pendrell as the lender, pursuant to which Pendrell agreed to make available to the Company up to \$20.6 million in borrowings. Pendrell is the parent of X-icity Holdings Corporation, the sponsor of Holicity. The interest rate on the Bridge Loan borrowings is a fixed rate of 5.00% per annum. However, if repaid in full in connection with the closing of the Business Combination, then no interest shall be due and payable. The Company is required to pay an upfront fee in the amount of 1.00% of the principal amount and an end of term fee in the amount of 2.00% of the principal amount. The funds drawn on the Bridge Loan may be prepaid by the Company at any time. The Bridge Loan matures upon the earliest of (a) the closing of the Business Combination, (b) 60 days following the abandonment of the Business Combination and (c) the date when the commitment amount is otherwise paid in full or accelerated pursuant to the terms of the Bridge Loan. Under the terms of the Bridge Loan, the Company borrowed \$10.0 million in June 2021, and subsequently paid off the outstanding principal and end of term fee totaling \$10.4 million on June 30, 2021. Refer to Note – 3 Acquisitions.

Note 8 — Warrant Liabilities

As part of Holicity's initial public offering ("IPO") in 2020, Holicity issued 9,999,976 warrants to third party investors, and each whole warrant entitles the holder to purchase one share of the Company's Class A common stock at an exercise price of \$11.50 per share (the "Public Warrants"). Simultaneously with the closing of the IPO, Holicity completed the private sale of 5,333,333 warrants to Holicity's sponsor ("Private Placement Warrants") and each Private Placement Warrant allows the sponsor to purchase one share of the Company's Class A common stock at \$11.50 per share.

The Private Placement Warrants and the shares of common stock issuable upon the exercise of the Private Placement Warrants are not transferable, assignable or salable until after the completion of a Business Combination, subject to certain limited exceptions. Additionally, the Private Placement Warrants are exercisable for cash or on a cashless basis, at the holder's option, and are non-redeemable so long as they are held by the initial purchasers or their permitted transferees. If the Private Placement Warrants are held by someone other than the initial purchasers or their permitted transferees, the Private Placement Warrants will be redeemable by the Company and exercisable by such holders on the same basis as the Public Warrant.

The Company accounts for Public Warrants and Private Placement Warrants as liability-classified instruments based on an assessment of the warrant's specific terms and applicable authoritative guidance in FASB ASC 480, Distinguishing Liabilities from Equity ("ASC 480") and ASC 815, Derivatives and Hedging ("ASC 815"). Specifically, the exercise of the Public and Private Placement Warrants may be settled in cash upon the occurrence of a tender offer or exchange that involves 50% or more of the Company's Class A shareholders. Because not all of the Company's shareholders need to participate in such tender offer or exchange to trigger the potential cash settlement and the Company does not control the occurrence of such an event, the Company concluded that the Public Warrants and Private Placement Warrants do not meet the conditions to be classified in equity. Since the Public and Private Placement Warrants meet the definition of a derivative under ASC 815, the Company recorded these warrants as liabilities on the balance sheet at fair value upon the closing of the Business Combination, with subsequent changes in their respective fair values recognized in the consolidated statement of operations at each reporting date.

On November 26, 2021, the Company issued a notice of redemption to redeem all of its Public Warrants and Private Placement Warrants ("Redeemable Warrants") outstanding as of December 27, 2021. Under the Warrant Agreement, the Company was entitled to redeem not less than all of the outstanding Redeemable Warrants at a Redemption Price of \$0.10 per Redeemable Warrant, provided that the last reported sales price of the Class A common stock has been at least \$10.00 per share on the trading day prior to the date on which notice of redemption is given, and further provided that there is an effective registration statement covering the shares of Class A common stock issuable upon exercise of the Redeemable Warrants and a current prospectus relating thereto, available through the Redemption Date.

Under the notice of redemption, Company required holders of the Redeemable Warrants to exercise their Warrants on a cashless basis, (the "Cashless Exercise Option") and holders were not permitted to exercise Redeemable Warrants by paying the \$11.50 per share

exercise price in cash. Pursuant to the Cashless Exercise Option, an exercising holder of the Redeemable Warrants received a number of shares of Class A common stock (the “Exercise Shares”) equal to the quotient obtained by dividing the product of the number of shares of Class A common stock underlying the Redeemable Warrants, multiplied by the excess of the fair market value of the Class A common stock over the exercise price of the Redeemable Warrants by the fair market value. Since the fair market value was less than the exercise price of the Redeemable Warrants, no Exercise Shares would have been issued if a holder would have elected to exercise its Redeemable Warrant pursuant to the Cashless Exercise Option. Alternatively, holders of the Redeemable Warrants were entitled to elect to receive, in lieu of the redemption price or exercising their Redeemable Warrants pursuant to the Cashless Exercise Option, 0.2560374 shares of Class A common stock for each Redeemable Warrants.

In connection with the redemption, the holders of 9,413,895 Public Warrants and 5,333,333 Private Placement Warrants elected to receive, in lieu of the redemption price, an aggregate 3,775,709 shares of Class A common stock at 0.2560374 shares of Class A Common Stock per Warrant. A total of 586,075 Public Warrants remained unexercised as of December 27, 2021 and the Company redeemed the Public Warrants for a redemption price of \$0.10 per Redeemable Warrant. The Public Warrants and Private Placement Warrants were remeasured to fair value as of the exercise or redemption date, resulting in a gain of \$25.7 million for year ended December 31, 2021, classified within other income, net in the Consolidated Statements of Operations.

Note 9 — Income Taxes

Components of Income Before Taxes

For financial reporting purposes, loss before income taxes includes the following components:

<i>in thousands</i>	As of December 31,		
	2021	2020	2019
Domestic	\$ (258,167)	\$ (68,293)	\$ (53,179)
Foreign	—	—	—
Loss before income taxes	<u>\$ (258,167)</u>	<u>\$ (68,293)</u>	<u>\$ (53,179)</u>

Components of Tax Expense

The Company recognized a tax benefit of \$0.4 million for the year ended December 31, 2021, primarily due to the release of valuation allowance associated with deferred tax liabilities as a result of the Apollo Fusion Inc. acquisition. For the year ended December 31, 2020 and 2019, the Company recognized no provision for income taxes consistent with the losses incurred and the valuation allowance against the deferred tax assets.

Effective Tax Rate

Reconciliation between the effective tax rate on income from continuing operations and the statutory tax rate of 21% is as follows:

	December 31,		
	2021	2020	2019
U.S. federal provision at statutory rate	21.0 %	21.0 %	21.0 %
Tax credits	1.1	1.0	2.2
Non-deductible executive compensation	(1.8)	—	—
Stock-based compensation	0.1	—	(0.1)
Convertible notes	(10.9)	(1.6)	—
Fair value adjustment	2.5	2.5	—
Change in valuation allowance	(11.6)	(22.8)	(22.3)
Other	(0.3)	(0.1)	(0.8)
Effective tax rate	0.1 %	0.0 %	0.0 %

Deferred Taxes

The Company’s deferred income tax assets and liabilities are as follows:

<i>in thousands</i>	As of December 31,	
	2021	2020
Deferred tax assets:		
Net operating loss carry forward	\$ 75,750	\$ 45,768
Tax credits	10,005	4,403
Stock-based compensation	1,807	35
Operating lease liabilities	2,073	—
Intangibles	—	307
Accruals and reserves	4,350	362
Total deferred tax assets	93,985	50,875
Deferred tax liabilities:		
Fixed assets	(709)	(787)
Right-of-use assets	(2,119)	—
Intangible assets	(2,534)	—
Total deferred tax liabilities	(5,362)	(787)
Net deferred tax assets before valuation allowance	88,623	50,088
Valuation allowance	(88,623)	(50,088)
Net deferred tax assets (liabilities)	\$ —	\$ —

The Company assesses the realizability of deferred tax assets based on the available evidence, including a history of taxable income and estimates of future taxable income. In assessing the realizability of deferred tax assets, the Company considers whether it is more likely than not that all or some portion of deferred tax assets will not be realized. Due to the losses the Company generated in the current and prior years, the Company believes it is not more likely than not that all of the deferred tax assets can be realized. Accordingly, the Company established and recorded a full valuation allowance on its net deferred tax assets. The Company's valuation allowance increased by \$38.5 million and \$20.7 million during the years ended December 31, 2021 and 2020, respectively.

As of December 31, 2021, the Company had \$292.6 million of U.S. federal net operating loss carryforwards, of which \$272.5 million will be carried forward indefinitely for U.S. federal tax purposes and \$20.1 million will expire beginning in 2036. In addition, the Company has \$211.7 million of state net operating loss carryforwards available to reduce future taxable income, if not utilized, will begin to expire beginning in 2036.

As of December 31, 2021, the Company also has federal and California research and development tax credit carryforwards of \$8.6 million and \$7.7 million, respectively. The federal research credit carryforwards will begin to expire in 2036 and California research credits can be carried forward indefinitely.

Utilization of the net operating loss and credit carryforwards may be subject to a substantial annual limitation due to the ownership change limitations provided by the Internal Revenue Code of 1986, as amended, and similar state provisions. The annual limitation may result in the expiration of net operating losses and tax credits before utilization. The events that may cause ownership changes include, but are not limited to, a cumulative stock ownership change of greater than 50% over a three-year period.

On December 27, 2020, the “Consolidated Appropriations Act, 2021” (the “CAA”) was signed into law. The CAA includes provisions meant to clarify and modify certain items put forth in CARES Act, while providing aid to businesses affected by the pandemic. The CAA allows deductions for expenses paid for by Paycheck Protection Program and Economic Injury Disaster Loan (“EIDL”) Program, clarifies forgiveness of EIDL advances, and other business provisions. The Company analyzed the provisions of the CAA and have appropriately accounted for the deductible costs associated with the PPP proceeds.

Unrecognized Tax Benefits

The Company accrues for uncertain tax positions identified, which are not deemed more likely than not to be sustained if challenged, and recognizes interest and penalties accrued on any unrecognized tax benefits as a component of income tax expense. The Company recorded no amounts of accrued interest and accrued penalties related to unrecognized tax benefits as of December 31, 2021, 2020 and 2019.

The following is a tabular reconciliation of the total amounts of unrecognized tax benefits:

<i>in thousands</i>	Year Ended December 31		
	2021	2020	2019
Unrecognized tax benefits as of the beginning of the year	\$ 4,842	\$ 3,543	\$ 1,569
Increases related to prior year tax provisions (acquisition)	487	—	—
Decrease related to prior year tax provisions	(1,112)	—	—
Increase related to current year tax provisions	897	1,299	1,974
Statute lapse	—	—	—
Unrecognized tax benefits as of the end of the year	\$ 5,114	\$ 4,842	\$ 3,543

The unrecognized gross tax benefits would not reduce the annual effective tax rate if recognized because the Company has recorded a valuation allowance on its deferred tax assets.

As of December 31, 2021, the Company does not believe there will be a significant increase or decrease of unrecognized tax benefits within the next twelve months. The Company files income tax returns in the U.S. federal and various state jurisdictions. All tax returns will remain open for examination by the federal and state authorities for three and four years, respectively, from the date of utilization of any net operating loss or credits. There have been no examinations of our income tax returns by any tax authority.

Note 10 — Leases

The Company has operating leases for warehouse, production, and office facilities and equipment. Lease contracts have remaining lease terms of one year to seven years, some of which include options to extend the term by up to 5 years. The Company included renewal options that are reasonably certain to be exercised as part of the lease term. Additionally, some lease contracts include termination options. The Company does not expect to exercise the majority of termination options and generally excludes such options when determining the term of leases. See Note 2 — Basis of Presentation and Summary of Significant Accounting Policies for the Company's lease accounting policy.

The components of lease costs for the year ended December 31, 2021 are as follows (in thousands):

<i>in thousands</i>	For the Year Ended December 31, 2021
Operating lease costs	\$ 1,669
Finance lease costs:	
Amortization of right-of-use assets	—
Interest on lease liabilities	—
Short-term lease costs	62
Variable lease costs	—
Sublease income	—
Total lease costs	\$ 1,731

For the year ended December 31, 2020 and 2019, rent expense recognized under ASC 840 amounted to \$0.6 million and \$0.8 million, respectively.

The weighted average remaining lease term as of December 31, 2021 is 6.68 years and the weighted average discount rate is 7.34%.

Cash flows arising from lease transactions for the year ended December 31, 2021 were as follows (in thousands):

	For the Year Ended December 31, 2021
Cash paid for amounts included in the measurements of lease liabilities:	
Operating cash inflows/(outflows) from operating leases	\$ (1,712)
Operating cash inflows/(outflows) from finance leases	—
Financing cash inflows/(outflows) from finance leases	—
Supplemental non-cash information on lease liabilities arising from obtaining right-of-use assets	—
Operating leases	\$ 5,243
Finance leases	—

Future minimum lease payments under non-cancellable leases in effect as of December 31, 2021 are as follows (in thousands):

Year Ended December 31,	Operating Leases	Finance Leases
2022	\$ 1,761	\$ —
2023	1,655	—
2024	1,655	—
2025	1,655	—
2026	1,642	—
Thereafter	2,840	—
Total future undiscounted minimum lease payments	\$ 11,208	\$ —
Less: imputed Interest	2,324	—
Total reported lease liability	\$ 8,884	\$ —

As of December 31, 2021, we do not have any leases that have not yet commenced that create significant rights and obligations for us.

The following table summarizes our lease commitments as of December 31, 2020:

Year Ended December 31,	Minimum Lease Commitment (in thousands)
2021	\$ 712
2022	766
2023	763
2024	762
2025	762
Thereafter	1,708
Total	<u>\$ 5,473</u>

Note 11 — Fair Value Measurements

The following table presents information about the Company's assets and liabilities that are measured at fair value on a recurring basis as of December 31, 2021 (in thousands):

Description	Level 1	Level 2	Level 3	Total
Assets				
Cash equivalents:				
Money market account	\$ 100,000	\$ —	\$ —	\$ 100,000
Total financial assets	<u>\$ 100,000</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 100,000</u>
Liabilities:				
Contingent consideration	\$ —	\$ —	\$ 13,700	\$ 13,700
Total financial liabilities	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 13,700</u>	<u>\$ 13,700</u>

The following table presents a summary of the changes in fair value of the Company's Level 3 financial instruments:

<i>in thousands</i>	Contingent Consideration
Fair value as of January 1, 2021	\$ —
Recognition of contingent consideration liability upon acquisition	18,400
Gain on change in fair value included in other income, net	4,700
Fair value as of December 31, 2021	<u>\$ 13,700</u>

Money market account is included within Level 1 of the fair value hierarchy because they are valued using quoted market prices.

The fair value of contingent consideration related to Apollo acquisition is classified as Level 3 financial instruments. To determine the fair value of the contingent consideration, the Company used Monte Carlo simulation model. The Monte Carlo simulation considered assumptions including revenue volatilities, risk free rates, discount rates and additional revenue discount rate. Additionally, other key

assumptions included forecasted revenue from new customers and probability of achieving it. The following table sets forth the range of inputs for the significant assumptions utilized to determine the fair value of contingent consideration:

	Contingent Consideration
Risk-free interest rate	0.56 %
Expected revenue volatility	20.0 %
Revenue discount rate	5.50 %
Discount rate	3.25 %

Note 12 — Commitments and Contingencies

Legal Proceedings

The Company is party to ordinary and routine litigation incidental to our business. On a case-by-case basis, the Company engages inside and outside counsel to assess the probability of potential liability resulting from such litigation. After making such assessments, the Company makes an accrual for the estimated loss only when the loss is probable, and an amount can be reasonably estimated.

As of December 31, 2021, there is no material litigation, arbitration or governmental proceeding currently pending or to Astra's knowledge, threatened against us or any members of Astra's management team in their capacity as such that could have a material effect on the Consolidated Balance Sheets, Consolidated Statements of Operations, or Consolidated Statements of Cash Flows. See Note 18 — Subsequent Events for litigation proceedings in which the Company is a party that were commenced after December 31, 2021.

Purchase Commitments

On May 25, 2021, the Company entered a contract with a supplier to purchase components. The Company is obligated to purchase \$22.5 million of components over 60 months. The Company may terminate the supply agreement by paying 50% of the remaining purchase commitment at any point during the contract term. The Company made total purchases of \$0.4 million during the year ended December 31, 2021.

Note 13 — Convertible Preferred Stock

Convertible Preferred Stock

From pre-combination Astra's inception until the consummation of the Business Combination, approximately \$100.2 million of cash capital contributions was raised, net of issuance costs, through the issuance of three rounds of convertible preferred equity.

The three classes of convertible preferred stock of pre-combination Astra are: Series A convertible preferred stock, Series B convertible preferred stock and Series C convertible preferred stock (collectively, the "Convertible Preferred Stock"). Immediately before the consummation of the Business Combination, the Convertible Preferred Stock of pre-combination Astra consisted of:

Series	Shares Outstanding (pre- combination Astra)	Liquidation Price Per Share	Conversion Price Per Share	Annual Noncumulative Dividend Rights Per Share
A	65,780,540	\$ 0.243233	\$ 0.243233	\$ 0.019459
B	70,713,123	1.333008	1.333008	0.106640
C	50,483,785	6.620970	6.620970	0.529680
Total	<u>186,977,448</u>			

Upon the consummation of the Business Combination in June 2021, 186,977,448 shares of Convertible Preferred Stock (pre-combination Astra) converted into 124,340,003 shares of Class A common stock of the Company. The Company no longer had Convertible Preferred Stock authorized, issued or outstanding subsequent to the close of Business Combination in June 2021. The terms and rights of the Convertible Preferred Stock described below represent the terms and rights of the Convertible Preferred Stock prior to the closing of the Business Combination.

Voting Rights and Dividends

Each holder of the Convertible Preferred Stock is entitled to a number of votes equal to the number of whole shares of Class A common Stock into which such holder's shares are convertible as defined in the amended and restated certificate of incorporation. The holders of outstanding Convertible Preferred Stock are entitled to receive defined dividends per share, when, if, and as declared by the

board of directors. These rights are not cumulative, and no right accrues by reason of the fact that dividends on said shares are not declared in any period, nor any undeclared or unpaid dividend bears or accrues interest. After payment of such dividends, and additional dividends or distributions are distributed to all holders of Common Stock, Founders Convertible Preferred Stock and Convertible Preferred Stock in proportion to the number of shares of common stock what would be held on an “as converted” basis.

Liquidation

In the event of a liquidation event (as defined), the holders of the Convertible Preferred Stock shall be entitled to receive, prior and in preference to any distribution of any of the assets of the Company to the holders of Founders Convertible Preferred Stock and Common Stock, by reason of their ownership, an amount per share equal to the liquidation price per share for each outstanding share of the Convertible Preferred Stock, plus any declared but unpaid dividends thereon to the date fixed for such distribution. If the assets of the Company legally available for distribution are insufficient to permit the payment of the full preferential amounts to the holders of the Convertible Preferred Stock, then the entire assets available for distribution to stockholders are distributed ratably among the holders of the Convertible Preferred Stock in proportion to the preferential amount each such holder is otherwise entitled to receive.

Upon the completion of the distribution to the holders of Series A, Series B and Series C Convertible Preferred Stock, the holders of outstanding shares of Founders Convertible Preferred Stock and Common Stock are entitled to receive all of the remaining assets of the Company pro rata based on the number of shares of Common Stock held by each assuming conversion of all such Founders Convertible Preferred Stock into Common Stock.

Each of the Convertible Preferred Stock shares are conditionally puttable by the holders upon Deemed Liquidation events, which includes a change of control or a sale of substantially all the Company’s assets. The Company determined that triggering events that could result in a Deemed Liquidation are not solely within the control of the Company. Therefore, the Convertible Preferred Stock is classified outside of permanent equity (i.e., temporary equity). The Convertible Preferred stock is subject to standard protective provisions, none of which provide creditor rights. As of December 31, 2020, the Company was not required to remeasure the Convertible Preferred Stock to the redemption value as none of the Deemed Liquidation events were probable at the time.

On January 28, 2021, concurrent with Series C Financing, the Company amended its certificate of incorporation to add a merger with a special purpose acquisition company (“SPAC Transaction”) as one of the defined Deemed Liquidation events. In addition, upon triggering of the Deemed Liquidation events, the holders of the Convertible Preferred Stock are entitled to receive the greater of their liquidation preference per share and the as converted value per share. As of March 31, 2021, the Company assessed the probability of a SPAC Transaction to be probable and therefore, the Convertible Preferred Stock are considered probable of becoming redeemable.

Subsequent measurement of Convertible Preferred Stock is then required for the three months ended March 31, 2021. The Company elected to apply the current redemption value method to measure the redeemable Convertible Preferred Stock. Under this method, changes in the redemption value are recognized immediately as they occur and the carrying value of the Convertible Preferred Stock is adjusted to the redemption value at the end of each reporting date. In the absence of retained earnings, adjustments to redemption value were recorded against additional paid-in capital, if any, and then to accumulated deficit. As of March 31, 2021, adjustments to the carrying amount of the Convertible Preferred Stock of \$1.1 billion, reflecting the estimated redemption value of \$7.18 per share as of March 31, 2021, are treated as deemed dividends and are recognized against additional paid-in capital and accumulated deficit on the Consolidated Balance Sheet.

On the Closing Date of the Business Combination, all outstanding Convertible Preferred Stock converted into Class A common stock of the Company, therefore, the Company applied conversion accounting to derecognize the existing carrying amount of the Convertible Preferred Stock and increased additional paid-in capital.

Conversion

The holders of the Convertible Preferred Stock shall have conversion rights as follows:

Right to Convert: Each of the Company’s Convertible Preferred Stock shall be convertible at the option of the holder thereof into a number of fully paid and nonassessable shares of Class A common Stock as is determined by dividing the liquidation preference by the conversion price for each series, respectively.

Automatic Conversion: Each share of the Convertible Preferred Stock shall automatically be converted into fully paid and nonassessable shares of Class A common Stock, at the then-effective conversion rates upon the earlier of (i) the vote or written consent of holders of at least a majority of the voting power represented by the then-outstanding shares of Convertible Preferred Stock, voting as a separate class on an as-converted basis or (ii) the closing of a firm commitment underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, covering the offer and sale of common stock at an offering price of not less than \$19.9 per share and with aggregate gross proceeds to the Company (prior to deduction of underwriters’ commissions and expenses) of not less than \$30.0 million.

Redemption

Convertible Preferred Stock are not mandatorily redeemable.

Note 14 — Stockholders' Equity

Common and Preferred Stock

As of December 31, 2021, the Company had authorized a total of 466,000,000 shares of stock, consisting of (i) 400,000,000 shares of Class A common stock, par value \$0.0001 per share ("Class A common stock"), (ii) 65,000,000 shares of Class B common stock, par value \$0.0001 per share ("Class B common stock"), and (iii) 1,000,000 shares of preferred stock, par value \$0.0001 per share ("Preferred Stock"). As of December 31, 2021, the Company had 207,451,107 and 55,539,189 shares of Class A and Class B common stock issued and outstanding, respectively. There were no shares of preferred stock outstanding as of December 31, 2021.

Holders of the Class A and Class B common stock have identical rights, except that holders of the Class A common stock are entitled to one vote per share and holders of the Class B common stock are entitled to ten votes per share. Each share of Class B common stock can be converted into one share of Class A common stock at any time at the option of the stockholder and automatically convert upon sale or transfer, except for certain transfers specified in our amended and restated certificate of incorporation.

In connection with the Business Combination, the Company's executive officers and founders, Chris Kemp and Adam London, converted an aggregate 10,870,562 shares of Founders Preferred Stock and an aggregate 3,599,647 shares of Class A common stock of pre-combination Astra, which were entitled to one vote per share, into 9,622,689 shares of Class B common stock of the Company, which are entitled to ten votes per share.

Founders Convertible Preferred Stock

The Company issued 18,500,000 shares of pre-combination Astra's Founders Convertible Preferred Stock in 2016. Upon vesting, the compensation expense associated with the Founders Convertible Preferred Stock was recorded as stock-based compensation based on the fair value of the Founders Convertible Preferred Stock on the grant date fair value. Immediately before the closing of the Business Combination, 10,870,562 shares of pre-combination Astra's Founders Convertible Preferred Stock were outstanding. Upon closing of the Business Combination, the Founders Convertible Preferred Stock were converted into shares of Class B common stock of the Company. Refer to Note 3 – Acquisitions.

Note 15 — Stock-based Compensation

Stock-based incentive awards are provided to employees under the terms of various Astra equity incentive plans.

2021 Omnibus Incentive Plan

In June 2021, the Board of Directors approved the 2021 Omnibus Incentive Plan (the "2021 Plan"), which reserved 36.8 million shares of Class A common stock for issuance for awards in accordance with the terms of the 2021 Plan. In addition, the pool increases on January 1 of each year from 2022 to 2031 by the lesser of (i) 5% of the sum of number of shares of (x) Class A common stock and (y) Class B common stock outstanding as of the close of business on the immediately preceding December 31 and (ii) the number of shares of Class A common stock as determined by the Board. The purpose of the 2021 Plan is to advance the Company's interests by providing for the grant to employees, directors, consultants and advisors of stock and stock-based awards. As of December 31, 2021, 9.1 million shares remain available for issuance under the plan.

2021 Employee Stock Purchase Plan

In June 2021, the Board of Directors approved the 2021 Employee Stock Purchase Plan (the "2021 ESPP") to reserve 5 million shares of Class A common stock for issuance for awards in accordance with the terms of the ESPP. In addition, the number of shares reserved for issuance will ultimately increase on January 1 of each year from 2022 to 2031 by the lesser of (i) 1% of the sum of number of shares of Class A common stock and Class B common stock outstanding as of the close of business on the immediately preceding December 31 and (ii) the number of shares of Class A common stock as determined by the Board. The purpose of the ESPP is to enable eligible employees to use payroll deductions to purchase shares of Class A common stock and thereby acquire an interest in the company. Eligible employees are offered shares through a 24-month offering period, which consists of four consecutive 6-month purchase periods. Employees may purchase a limited amount of shares of our stock at a discount of up to 15% of the lesser of the fair market value at the beginning of the offering period or the end of each 6-month purchase period. No shares were issued under the Employee Stock Purchase Plan during the year ended December 31, 2021. As of December 31, 2021, 5 million shares remain available for issuance under the

Employee Stock Purchase Plan. As of December 31, 2021, the Company had \$0.5 million of unrecognized stock-based compensation expense related to the ESPP. This cost is expected to be recognized over a weighted-average period of 0.8 years.

2016 Equity Incentive Plan

In 2016, pre-combination Astra adopted the 2016 Equity Incentive Plan (the “2016 Plan”). Under this Plan, the Board of Directors or a committee appointed by the Board of Directors is authorized to provide stock-based compensation in the form of stock options, stock appreciation rights, restricted stock, and other performance or value-based awards within parameters set forth in the Plan to employees, directors, and non-employee consultants.

In connection with the Business Combination, the Company assumed the 2016 Plan upon closing. Each outstanding and unexercised option (“Astra Option”) was converted, at the exchange ratio established in the BCA, into an option (“New Astra Option”) to acquire shares of the Company’s Class A common stock with the same terms and conditions as applicable to the Astra Option immediately prior to the Business Combination. As of December 31, 2021, there were no shares available for issuance under the plan.

The following table summarizes stock-based compensation expense that the Company recorded in the Consolidated Statements of Operations for the year ended December 31, 2021, 2020 and 2019:

<i>in thousands</i>	For The Year Ended December 31,		
	2021	2020	2019
Research and development	\$ 12,930	\$ 339	\$ 190
Sales and marketing	220	—	—
General and administrative	26,593	31,863	624
Stock-based compensation expense	<u>\$ 39,743</u>	<u>\$ 32,202</u>	<u>\$ 814</u>

As of December 31, 2021, the Company had capitalized \$0.3 million of stock-based compensation in inventories. No stock-based compensation was capitalized as of December 31, 2020 and 2019.

On November 22, 2021, under the 2021 Plan, the Company's compensation committee issued 1,047,115 PSUs to the employees of Apollo who joined Astra. PSUs are subject to certain performance-based and service-based vesting conditions and would vest over four years with 25% of awards vesting on July 1, 2022, and the remaining 75% vesting quarterly over the remaining 12 quarters beginning on November 15, 2022 only for the portion of PSUs that is eligible to become vested which will be determined based upon timely satisfaction of performance conditions. The number of PSUs vested will be determined by multiplying the total number of PSUs granted by the percentage of milestones achieved and by the percentage of PSUs that satisfy the time-based vesting condition on such time-vesting date.

Certain performance conditions for PSUs are subjective and the number of PSUs related to these performance conditions do not meet the criteria for the grant date. Accordingly, 523,557 PSUs related to the performance conditions that are not subjective are considered granted as of November 22, 2021. The remaining PSUs issued did not meet the grant date criteria as of December 31, 2021. The Company will re-assess at the end of each reporting period if any further PSUs has met the grant date criteria and account for it in the period in which it meets the grant date criteria.

As of December 31, 2021, the Company assessed the probability of success for the performance conditions that are not subjective and determined that the Company has achieved these performance conditions within the requisite period. Therefore, the Company recognized \$0.5 million compensation costs related to PSUs for the year ended December 31, 2021.

On September 20, 2021, under the 2021 Plan, the Company’s compensation committee granted 3,972,185 restricted stock units (“RSUs”), 3,426,094 time-based stock options and 13,016,178 performance stock options (“PSOs”) to its executive officers. RSUs and time-based stock options granted have service-based vesting conditions only. The service conditions vary for each executive officer and is based on their continued service to the Company. Option holders have a 10-year period to exercise their options before options expire. Forfeitures are recognized in the period of occurrence and stock-based compensation costs are recognized based on grant-date fair value as RSUs and time-based stock options vest. Refer to disclosures below for the Company’s RSUs and option activities for the year ended December 31, 2021.

PSOs, only eligible to the executive officers of the Company, are subject to performance conditions as follows, and the milestones do not need to be achieved in any specific order or sequence:

Milestone A: The Company has had a successful orbital delivery.

Milestone B: The Company has had six orbital launches during a six consecutive month period.

Milestone C: The Company has completed a prototype for a spacecraft that has achieved an orbital launch.

Milestone D: The Company has conducted twenty-six orbital launches during a six consecutive month period.

Milestone E: The Company has achieved an orbital launch for an aggregate of 100 spacecraft.

These PSOs also require the volume weighted average share price for a period of thirty trading days meet certain share price thresholds before a milestone will be deemed achieved. After each milestone is achieved, 20% of the PSOs will vest on the vesting date immediately following the date at which the price thresholds are met. For this purpose, a "vesting date" is February 15, May 15, August 15 and November 15 of any applicable year. The milestones must be achieved over a period of approximately five years, with the earliest vesting date of November 15, 2022 and the last vesting date no later than November 15, 2026, if all vesting conditions are met. No unvested portion of the PSOs shall vest after November 15, 2026. As of December 31, 2021, the Company assessed the probability of success for the five milestones mentioned above and determined that it is probable that the Company will achieve Milestone A and Milestone B within the requisite period. Therefore, the Company recognized \$5.6 million compensation costs related to PSOs for the year ended December 31, 2021. As of December 31, 2021, we had unrecognized stock-based compensation expense of \$32.8 million for the milestones that were not considered probable of achievement.

In April 2021, the Board of Directors has approved the acceleration of the vesting of 1,900,000 pre-combination Astra stock options issued to two executive officers: Kelyn Brannon and Martin Attiq, on December 27, 2020. The Company recognized the remaining stock-based compensation expense of \$7.2 million in its Consolidated Statements of Operations for the year ended December 31, 2021.

In February 2021, the Board of Directors approved the acceleration in vesting of 206,250 pre-combination Astra stock options that were issued to one employee on May 15, 2020. The remaining unvested options were fully vested upon acceleration. The Company recorded a \$1.4 million stock-based compensation expense related to the modification for the year ended December 31, 2021.

As of December 31, 2021, the Company had \$130.3 million of unrecognized stock-based compensation expense related to all of the Company's stock-based awards. This cost is expected to be recognized over a weighted-average period of 2.93 years.

Secondary Sales

In January 2021, concurrent with Series C Financing, two executive officers, Chris Kemp, founder and Chief Executive Officer ("CEO"), and Adam London, founder and Chief Technology Officer ("CTO"), entered into stock purchase agreements with certain investors including ACME SPV AS, LLC to sell 3,775,879 and 2,265,529 shares, respectively, of Founders Convertible Preferred Stock at purchase prices in excess of the estimated fair value at the time of the transactions ("January 2021 Secondary Sales") to certain investors. Upon the sale, the Founders Convertible Preferred Stock automatically converted into Series C Convertible Preferred Stock. The Company's board member, Scott Stanford, is a member of ACME SPV AS, LLC and the Company facilitated the January 2021 Secondary Sales. As a result, for the year ended December 31, 2021 the Company recorded a total of \$8.2 million in stock-based compensation expense for the difference between the price paid by these investors and the estimated fair value of the Founders Convertible Preferred Stock on the date of the transaction.

In April 2021, four executive officers, Chris Kemp, CEO, Adam London, CTO, Kelyn Brannon, Chief Financial Officer ("CFO"), and Martin Attiq, Chief Business Officer ("CBO"), entered into stock purchase agreements with new investors to sell 2,534,793, 865,560, 1,500,000 and 400,000 shares, respectively, of Class A common stock of pre-combination Astra, at a purchase price per share of \$5.66 ("April 2021 Secondary Sales"). No additional stock-based compensation expense was recognized for the year ended December 31, 2021 as the purchase price was below fair market value of Class A common stock of pre-combination Astra at the time of the sales.

2020 Awards to Founders

For the year ended December 31, 2020, the Company granted 7,000,000 shares of Class A common stock of pre-combination Astra to its founders and key executives in recognition of services previously rendered. Prior to that time, since the Company's inception, the Company's two founders had not received refresh grants aside from the initial restricted stock awards issued in 2016. On December 27, 2020, the Board of Directors granted a total of 7,000,000 shares of Class A common stock of pre-combination Astra to Chris Kemp, Founder and CEO, and Adam London, Founder and CTO. All 7,000,000 shares of Class A common stock of pre-combination Astra were fully vested upon issuance.

Each share reflects one fully vested Class A common stock of pre-combination Astra upon issuance and a grant date fair value of \$4.49 per share. The grant date fair value was determined by applying the probability-weighted expected return method ("PWERM Method"), which assumes various future outcomes to determine the value of the various equity securities based on probability-weighted present value. Under the PWERM Method, the Company considered potential scenarios related to (i) a merger transaction closing in the second quarter of 2021 and (ii) remaining privately owned for approximately 1.5 years. The following assumptions are utilized to determine the fair value of Class A common stock:

	Merger Transaction	Remaining Private
Time to event (in years) ⁽¹⁾	0.38	1.50
Scenario probability ⁽²⁾	60 %	40 %
Discount for lack of marketability ⁽³⁾	10 %	25 %
Market value per share ⁽⁴⁾	\$ 6.62	\$ 3.04
Grant-date fair value	\$ 5.96	\$ 2.28

- (1) The time to event represents the estimated length of time to a merger or liquidation event.
- (2) Scenario probability was estimated based on the Company's merger or liquidation event assumptions on the valuation date.
- (3) Discount for lack of marketability related to the merger transaction scenario was utilized to account for industry-standard lock period of founders and existing employees. Benchmark study approach and securities-based approaches are utilized to estimate the discount for lack of marketability for the remaining private scenario.
- (4) The Company has assumed the cash purchase price for Series C preferred stock of \$6.62 represents an arm's length fair market value per share price of equity. The value of the remaining private scenario was determined based on back-solve analysis by reconciling to the Series C preferred stock purchase price.

The grant date fair value of \$31.4 million was recognized as compensation expense within general and administrative expenses in the Consolidated Statement of Operations for the year ended December 31, 2020.

Stock Options Awards

The following is a summary of stock option activity for the year ended December 31, 2021:

	No. of Options	Weighted- Average Exercise Price	Weighted- Average Remaining Term (in Years)	Aggregate Intrinsic Value
Outstanding – December 31, 2020	8,546,017	\$ 0.85	8.6	\$ 52,120,105
Granted	16,442,272	9.04	9.7	
Exercised	(3,883,523)	0.50	5.1	
Forfeited	(736,533)	1.08	—	
Expired	(41,849)	0.52	—	
Outstanding – December 31, 2021	20,326,384	\$ 7.52	9.4	\$ 22,782,654
Unvested – December 31, 2021	18,524,426	8.17	9.5	11,701,061
Exercisable – December 31, 2021	1,801,958	0.78	7.8	11,081,593

Total intrinsic value of options exercised during the years ended December 31, 2021, 2020 and 2019 was approximately \$35.6 million, \$18.7 million and \$0.1 million, respectively.

The company uses the Black-Scholes option pricing-model to calculate the grant date fair value of time based options and Monte Carlo simulation model to calculate the grant date fair value of PSOs. The following table summarizes the assumptions used in estimating the fair value of options granted in the year ended December 31, 2021, 2020 and 2019:

	Time Based Options			Performance Based Stock Options
	2021	2020	2019	2021
Expected terms (years) ⁽¹⁾	6.00	5.78	5.84	2.50 - 4.40
Expected volatility ⁽²⁾	68.8 %	47.4 %	34.0 %	68.9 %
Risk-free interest rate ⁽³⁾	0.98 %	0.29 % - 1.19 %	1.58 % - 2.54 %	1.31 %
Expected dividend rate ⁽⁴⁾	-	-	-	-
Grant-date fair value	\$ 5.52	\$ 1.12	\$ 0.11	\$ 4.66

- (1) The expected term is the length of time the grant is expected to be outstanding before it is exercised or terminated. This number is calculated as the midpoint between the vesting term and the original contractual term (contractual period to exercise). If the option contains graded vesting, then the vesting term would be based on the vesting pattern.
- (2) Expected volatility, or the standard deviation of annualized returns, was calculated based on comparable companies' reported volatilities.
- (3) Risk-free interest was obtained from US treasury notes for the expected terms noted as of the valuation date.
- (4) The Company has assumed a dividend yield of zero as it has no plans to declare dividends in the foreseeable future.

Prior to the Business Combination, the fair value of the common stock underlying our stock-based awards was determined with input from management and corroboration from contemporaneous third-party valuations. Given the absence of a public trading market, we considered numerous objective and subjective facts to determine the fair value of the Company's Common Stock at each date at which awards were approved. These factors included, but were not limited to (i) contemporaneous third-party valuations of Common Stock; (ii) the rights and preferences of Founders Convertible Preferred and Convertible Preferred relative to Common Stock; (iii) the lack of marketability of Common Stock; (iv) developments in the business; and (v) the likelihood of achieving a liquidity event, such as an IPO or sale of the Company, given prevailing market conditions.

Restricted Stock Units Awards

The following is a summary of restricted stock units for the year ended December 31, 2021:

	Number of RSUs Outstanding	Weighted- Average Grant Date Fair Value Per Share
Outstanding – December 31, 2020	—	\$ —
Granted	11,421,216	9.20
Vested	(585,623)	9.20
Forfeited	(156,775)	9.08
Outstanding – December 31, 2021	10,678,818	\$ 9.20

Total fair value as of the respective vesting dates of restricted stock units vested for the year ended December 31, 2021 was approximately \$6.2 million. As of December 31, 2021, the aggregate intrinsic value of unvested restricted stock units was \$74.0 million.

Note 16 — Loss per Share

Founders Convertible Preferred Stock, Convertible Preferred Stock, and unvested Restricted Stock Awards ("RSA's") are participating securities in periods of income, as the Founders Convertible Preferred Stock, Convertible Preferred Stock, and unvested RSAs participate in undistributed earnings on an as-if-converted or as-vested basis. However, the Founders Convertible Preferred Stock, and Convertible Preferred Stock, do not share in losses.

The Company computes earnings per share of Common Stock using the two-class method required for participating securities and does not apply the two-class method in periods of net loss. Basic and diluted earnings per share were the same for the years presented as the inclusion of all potential Common Stock outstanding would have been anti-dilutive. Earnings per share calculations for all periods prior to the Business Combination have been retrospectively restated to the equivalent number of shares reflecting the exchange ratio established in the BCA. Subsequent to the Business Combination, earnings per share was calculated based on weighted average number of shares of common stock then outstanding.

The following tables set forth the computation of basic and diluted loss for the year ended December 31, 2021, 2020 and 2019:

For The Year Ended December 31,						
	2021		2020		2019	
(in thousands, except share and per share amounts)	Class A Common	Class B Common	Class A Common	Class B Common	Class A Common	Class B Common
Net loss attributed to common stockholders	\$ (175,951)	\$ (81,831)	\$ (8,120)	\$ (60,174)	\$ (5,989)	\$ (47,190)
Adjustment to redemption value on Convertible Preferred Stock	(690,559)	(321,167)	—	—	—	—
Net loss attributed to common stockholders	\$ (866,510)	\$ (402,998)	\$ (8,120)	\$ (60,174)	\$ (5,989)	\$ (47,190)
Basic weighted average common shares outstanding	110,837,016	51,548,314	6,585,392	48,801,526	5,374,543	42,349,994
Dilutive weighted average common shares outstanding	110,837,016	51,548,314	6,585,392	48,801,526	5,374,543	42,349,994
Loss per share attributable to common stockholders:						
Basic and Diluted loss per share	\$ (7.82)	\$ (7.82)	\$ (1.23)	\$ (1.23)	\$ (1.11)	\$ (1.11)

There were no preferred dividends declared or accumulated as of December 31, 2021, 2020 and 2019. The following securities were not included in the computation of diluted shares outstanding because the effect would be anti-dilutive:

As of December 31,						
	2021		2020		2019	
	Class A Common	Class B Common	Class A Common	Class B Common	Class A Common	Class B Common
Stock options	7,310,199	—	8,546,017	—	5,821,379	—
RSUs	10,678,818	—	—	—	—	—
Convertible Preferred Stock	—	—	103,070,786	—	103,070,786	—
Warrants	—	—	480,520	—	480,520	—
RSAs	—	—	—	—	62,345	1,928,500
Total	17,989,017	—	112,097,323	—	109,435,030	1,928,500

For the Convertible Notes, before settlement, for purposes of diluted earnings (loss) per share, the Company applies the if-converted method. However, because the adjustment to the numerator for interest expense was anti-dilutive, the Convertible Notes were not included in diluted earnings (loss) per share. Refer to Note 7 — Long-Term Debt for the key terms of the Convertible Notes.

Note 17 — Related Party Transactions

In June 2019, the Company issued promissory convertible notes to A/NPC Holdings LLC and Sherpa Ventures Fund, II LP for gross proceeds of \$10.0 million and \$0.6 million, respectively. In November 2020, the Company issued promissory convertible notes to Sherpa Ventures Fund II, LP and Eagle Creek Capital LLC, for gross proceeds of \$0.2 million and \$0.5 million, respectively. Some of the Company's board members at that time were or are related parties of these entities. Nomi Bergman, who was serving as our director when the promissory convertible notes were issued, is a principal of A/NPC Holdings LLC and Scott Stanford, who serves as our director, is a principal of Sherpa Ventures Fund II, LP and a member of Eagle Creek Capital, LLC. In all instances the terms of these transactions were the same as third-party investors.

On January 28, 2021, the Company settled promissory convertible notes through the issuance of Series C convertible preferred stock. 7,819,887 and 469,193 shares of Series C convertible preferred stock were issued to A/NPC Holdings LLC and Sherpa Ventures Fund II, LP at a per share price of \$1.33 to settle \$10.4 million and \$0.6 million outstanding principal and accrued interest, respectively. Additionally, 264,928 and 115,771 shares of Series C convertible preferred stock were issued to Eagle Creek Capital, LLC and Sherpa Ventures Fund II, LP at a per share price of \$1.71 to settle \$0.5 million and \$0.2 million outstanding principal and accrued interest, respectively. See Note 7 — Long-Term Debt for mechanism of settlement.

On November 9, 2021, the Company granted 33,000 restricted stock units (the "RSUs") to the spouse of its chairman, chief executive officer and founder, Chris Kemp ("Ms. Kemp") as compensation for investor relations and marketing services Ms. Kemp provided to the Company as a consultant. The RSUs vest in one installment on November 15, 2021. The value of the RSUs was \$0.3 million, which is based on the closing per share price of the Company's Class A common stock on November 9, 2021. The Company recorded stock-based compensation expense of \$0.3 million for the year ended December 31, 2021. Ms. Kemp's consulting agreement was ratified, and the grant of RSUs was approved, under the Company's related party transaction policy.

Note 18 — Subsequent Events

Since December 31, 2021, three legal proceedings have been filed in which the Company is named as a defendant or a nominal defendant:

On February 9, 2022, a putative class action was filed in the United States District Court for the Eastern District of New York styled *Artery v. Astra Space, Inc. et al.*, Case No. 1:22-cv-00737 (E.D.N.Y.) (the “Artery Action”). The complaint alleges that we and certain of our current and former officers violated provisions of the Securities Exchange Act of 1934 with respect to certain statements concerning our capabilities and business prospects. The complaint seeks unspecified damages on behalf of a purported class of purchasers of our securities between February 2, 2021 and December 29, 2021. On March 23, 2022, a second putative class action was filed in the United States District Court for the Eastern District of New York styled *Riley v. Astra Space, Inc., et al.*, Case No. 1:22-cv-01591 (E.D.N.Y.) (the “Riley Action,” with the Artery Action, the “Securities Actions”). The Riley Action alleges the same claims, based upon similar facts, against the same defendants, and seeks the same damages. The Company expects that the two cases will be consolidated into a single action. Under the applicable statute, potential lead plaintiffs have until April 11, 2022, to file motions with the court to request appointment as lead plaintiff. Defendants intend to move to dismiss once the Court appoints a lead plaintiff and an amended complaint is filed. We believe that the Securities Actions are without merit and intend to defend them vigorously. Due to the early stage of the cases, neither the likelihood that a loss, if any, will be realized, nor an estimate of the possible loss or range of loss, if any, can be determined.

On March 8, 2022, a stockholder derivative suit was filed in the United States District Court for the State of Delaware styled *Meyer, et al., v. Kemp, et al.*, Case No. 22-cv-00308 (D. Del.). The complaint asserts claims against the current members of our board of directors and certain of our current and former officers, for breach of their fiduciary duty, waste, unjust enrichment, and contribution under the Securities Exchange Act of 1934, based upon the conduct alleged in the Artery Action. The plaintiffs seek monetary damages in favor of the Company in an unstated amount, reformation of the Company’s corporate governance and internal procedures, restitution including a disgorgement of any compensation, profits or other benefits achieved, and reimbursement of the plaintiffs’ reasonable fees and costs, including attorney’s fees. We believe that the case is without merit and intend to defend it vigorously. Due to the early stage of the case, neither the likelihood that a loss, if any, will be realized, nor an estimate of the possible loss or range of loss, if any, can be determined.

The Company has tendered defense of each of the three foregoing claims under its Directors’ and Officers’ policy. The retention under this policy is \$20 million.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES***Limitations on effectiveness of controls and procedures***

We maintain disclosure controls and procedures (as that term is defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) that are designed to ensure that information required to be disclosed in our reports under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer, who serves as our principal executive officer, and Chief Financial Officer, who serves as our principal financial officer, as appropriate, to allow for timely decisions regarding required disclosures. In designing and evaluating our disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints, and that management is required to apply judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Evaluation of disclosure controls and procedures

Our management, with the participation of our principal executive officer and principal financial officer, evaluated, as of the end of the period covered by this annual report on Form 10-K, the effectiveness of our disclosure controls and procedures (as that term is defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act). Based on that evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were not effective as of December 31, 2021 due to the material weaknesses in our internal control over financial reporting described below.

Material Weaknesses and Remediation Plan

We identified material weaknesses in our internal control over financial reporting. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. Specifically, material weaknesses identified are:

Control Environment

We did not maintain an effective control environment to enable the identification and mitigation of risks of material accounting errors based on the following control deficiencies:

- We did not design and maintain effective controls over segregation of duties and related conflicts with respect to our information technology systems, including administrative access to our financially relevant information technology systems.
- We did not design and maintain effective controls over formalizing our accounting policies and procedures.
- We did not design and maintain effective controls over preparing and recording journal entries within our accounting systems related thereto.
- We did not maintain effective controls over accounting for complex transactions and instruments, including, the inaccurate accounting for Public and Private Placement Warrants and the inaccurate application of conversion accounting related to our convertible instruments in connection with the restatement of our financial statements for the period ended June 30, 2021 as set forth in our Form 10-Q/A (Amendment No. 1) filed with the SEC on October 22, 2021.

Risk Assessment

We did not design and implement an effective risk assessment, including: (i) identifying, assessing, and communicating appropriate objectives, (ii) identifying and analyzing risks to achieve these objectives, and (iii) identifying and assessing changes in the business that could impact our system of internal controls.

Control Activities

We did not design and implement effective control activities as the control activities did not adequately (i) address relevant risks, (ii) provide evidence of performance, (iii) provide appropriate segregation of duties, or (iv) operate at a level of precision to identify all potentially material errors.

Information and Communication

We did not generate and provide quality information and communication relating to communicating accurate information internally and externally, including providing information pursuant to objectives, responsibilities, and functions of internal control.

Monitoring Activities

We did not design and implement effective monitoring activities as we did not maintain effective monitoring controls to ascertain whether the components of internal control are present and functioning.

Additionally, each of these material weaknesses could result in a misstatement of account balances or disclosures that would result in a material misstatement to the annual or interim consolidated financial statements that would not be prevented or detected.

We have begun the process of, and are focused on, designing and implementing effective internal control measures to improve our internal control over financial reporting and remediate the material weaknesses. Our efforts include a number of actions:

- We are actively recruiting additional personnel, in addition to engaging and utilizing third party consultants and specialists to supplement our internal resources and segregate key functions within our business processes, where appropriate.
- We also continue to take actions to improve our IT general controls, segregation of duties controls, period-end financial reporting controls, and journal entry controls.
- We are in the process of formally documenting accounting policies and procedures complying with applicable financial reporting standards.
- We are implementing comprehensive controls over the preparation and review of journal entries, establishing additional controls to verify transactions are properly classified in the financial statements and program change management controls to ensure that IT program and data changes affecting financial IT applications and underlying accounting records are identified, tested, authorized and implemented appropriately.
- While we have processes to identify and evaluate the appropriate accounting technical pronouncements and other literature for all significant or unusual transactions, we are in the process of enhancing these processes to better evaluate, research and understand the nuances of the accounting standards for complex transactions and instruments. We plan to provide internal resources with enhanced access to accounting literature and research materials while increasing communication with third-party professionals with whom we consult regarding the application of accounting standards over complex transactions and instruments.

While these actions and planned actions are subject to ongoing management evaluation and will require validation and testing of the design and operating effectiveness of internal controls over a sustained period, we are committed to continuous improvement and will continue to diligently review our internal control over financial reporting.

Management's Annual Report on Internal Control over Financial Reporting

As discussed elsewhere in this Annual Report on Form 10-K, we completed a Business Combination on June 30, 2021 pursuant to which we acquired pre-combination Astra. Prior to the Transaction, we were a special purpose acquisition company formed for the purpose of effecting a merger, capital stock exchange, asset acquisition, stock purchase, recapitalization, reorganization or similar business combination with one or more businesses. As a result, previously existing internal controls are no longer applicable or comprehensive enough as of the assessment date, as our operations prior to the Business Combination were insignificant compared to those of the consolidated entity post Business Combination. Management was unable, without incurring unreasonable effort or expense, to complete an assessment of our internal control over financial reporting as of December 31, 2021. Accordingly, we are excluding management's report on internal control over financial reporting pursuant to Section 215.02 of the SEC Division of Corporation Finance's Regulation S-K Compliance & Disclosure Interpretations.

Changes in Internal Control over Financial Reporting

We are taking actions to remediate the material weaknesses relating to our internal control over financial reporting. Other than described above, there were no changes in our internal control over financial reporting (as that term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the quarter ended December 31, 2021 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Except as follows, the information required by Item 10 is incorporated herein by reference from sections entitled “Proposal 1 — Election of Directors” and “The Board of Directors and Certain Governance Matters” in our definitive Proxy Statement for our 2022 Annual Meeting of Stockholders. Our executive officers are listed at the end of Item 1 of this Annual Report on Form 10-K.

Code of Ethics

Astra has adopted a code of ethics entitled “Astra Space, Inc. Code of Conduct and Ethics” that applies to directors, officers and employees. It may be accessed through the "Governance" section of the Company's website at <https://www.astra.com>. Astra also elects to disclose the information required by Form 8-K, Item 5.05, "Amendments to the Registrant's Code of Ethics, or Waiver of a Provision of the Code of Ethics," through the Company's website, and such information will remain available on this website for at least a 12-month period. A copy of the “Astra Space, Inc. Code of Conduct and Ethics” is available in print to any stockholder who requests it.

ITEM 11. EXECUTIVE COMPENSATION

The information required by Item 11 is incorporated herein by reference from sections entitled “Director Compensation” and “Executive Compensation” in our definitive Proxy Statement for our 2022 Annual Meeting of Stockholders.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by Item 12 is incorporated herein by reference from section entitled “Security Ownership of Certain Beneficial Owners and Management” in our definitive Proxy Statement for our 2022 Annual Meeting of Stockholders.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by Item 13 is incorporated herein by reference from section entitled “Certain Relationships and Related Person Transactions” in our definitive Proxy Statement for our 2022 Annual Meeting of Stockholders.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by Item 14 is incorporated herein by reference from the section entitled “Proposal 2 — Ratification of the Appointment of Independent Registered Public Accounting Firm” in our definitive Proxy Statement for our 2022 Annual Meeting of Stockholders.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following are filed as part of this Annual Report on Form 10-K:

1. Financial Statements

See Index to Financial Statements under Part II, Item 8 of this Annual Report on Form 10-K.

2. Financial Statement Schedules

Schedules not listed above have been omitted because they are not required, not applicable, or the required information is otherwise included

3. Exhibits

The exhibits listed below are filed as part of this Annual Report on Form 10-K or are incorporated herein by reference as indicated.

Exhibit Number	Description	Incorporated by Reference			
		Form	SEC File No.	Exhibit	Filing Date
2.1	Business Combination Agreement, dated as of February 2, 2021 by and among Holicity Inc., Holicity Merger Sub Inc. and Astra Space, Inc.	S-4	333-255703	2.1	May 3, 2021
3.1	Second Amended and Restated Certificate of Incorporation of Astra Space, Inc.	8-K	001-39426	3.1	July 1, 2021
3.2	Amended and Restated Bylaws of Astra Space, Inc.	8-K	001-39426	3.2	July 1, 2021
4.1	Warrant Agreement, dated as of August 4, 2020, by and between Holicity Inc. and Continental Stock Transfer & Trust Company.	S-4	333-255703	4.2	May 3, 2021
10.1+	Astra Space, Inc. 2021 Omnibus Incentive Plan.	424B3	333-255703	F	June 8, 2021
10.2+	Astra Space, Inc. 2021 Employee Stock Purchase Plan.	424B3	333-255703	G	June 8, 2021
10.3	Form of Indemnification Agreement.	8-K	001-39426	10.11	July 1, 2021
10.4	Director Nomination Agreement, dated June 30, 2021, by and between Astra Space, Inc., Pendrell Holicity Holdings Corporation and Adam P. London and Chris C. Kemp.	8-K	001-39426	10.12	July 1, 2021
10.5+	Employment Agreement, dated February 1, 2021, by and between Astra Space, Inc. and Chris Kemp.	S-4	333-255703	10.8	May 3, 2021
10.6+	Employment Agreement, dated February 1, 2021, by and between Astra Space, Inc. and Adam London.	S-4	333-255703	10.9	May 3, 2021
10.7+	Employment Agreement, dated February 1, 2021, by and between Astra Space, Inc. and Kelyn Brannon.	S-4	333-255703	10.10	May 3, 2021
10.8+	Employment Agreement, dated February 1, 2021, by and between Astra Space, Inc. and Martin Attiq.	S-4	333-255703	10.11	May 3, 2021
10.9+	First Amendment to Employment Agreement of Chris Kemp dated September 1, 2021.	8-K	001-39426	10.1	September 7, 2021

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10.10+	First Amendment to Employment Agreement of Adam London dated September 1, 2021.	8-K	001-39426	10.2	September 7, 2021
10.11+	First Amendment to Employment Agreement of Kelyn Brannon dated September 1, 2021.	8-K	001-39426	10.3	September 7, 2021
10.12+	First Amendment to Employment Agreement of Martin Attiq dated September 1, 2021.	8-K	001-39426	10.4	September 7, 2021
10.13+	Employment Agreement of Benjamin Lyon dated September 1, 2021.	8-K	001-39426	10.5	September 7, 2021
10.14+	Form of Performance Stock Option Award Agreement.	8-K	001-39426	10.1	September 22, 2021
10.15	Investors' Rights Agreement, dated February 2, 2020, by and among Holicity, Inc. Astra Space, Inc. and certain of its stockholders	S-4	333-255703	10.3	May 3, 2021
21.1*	Subsidiaries of Registrant				
23.1*	Consent of Grant Thornton LLP				
31.1*	Certification of Chief Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				
31.2*	Certification of Chief Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				
32.1**	Certification of Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				
32.2**	Certification of Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document.				
101.SC	Inline XBRL Taxonomy Extension Schema Document				
101.CA	Inline XBRL Taxonomy Extension Calculation Linkbase Document				
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document				
101.LA	Inline XBRL Taxonomy Extension Label Linkbase Document				
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document				
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)				

* Filed herewith.

** Furnished herewith.

+ Indicates a management contract or compensatory plan, contract or arrangement in which directors or executive officers participate.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Astra Space, Inc.

Date: March 31, 2022

By: /s/ Chris C. Kemp
Chris C. Kemp
Chief Executive Officer

POWER OF ATTORNEY

Each person whose individual signature appears below hereby authorizes and appoints Chris C. Kemp and Kelyn J. Brannon, and each of them, with full power of substitution and resubstitution and full power to act without the other, as his or her true and lawful attorney-in-fact and agent to act in his or her name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his substitute or substitutes may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Act of 1934, this report has been signed by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
<div>/s/ Chris C. Kemp</div> <div>Chris C. Kemp</div>	Chief Executive Officer and Chairman of the Board <i>(Principal Executive Officer)</i>	March 31, 2022
<div>/s/ Kelyn J. Brannon</div> <div>Kelyn J. Brannon</div>	Chief Financial Officer <i>(Principal Financial and Accounting Officer)</i>	March 31, 2022
<div>/s/ Adam London</div> <div>Adam London</div>	Director	March 31, 2022
<div>/s/ Scott Stanford</div> <div>Scott Stanford</div>	Director	March 31, 2022
<div>/s/ Craig McCaw</div> <div>Craig McCaw</div>	Director	March 31, 2022
<div>/s/ Mike Lehman</div> <div>Mike Lehman</div>	Director	March 31, 2022
<div>/s/ Michèle Flourney</div> <div>Michele Flourney</div>	Director	March 31, 2022
<div>/s/ Lisa Nelson</div> <div>Lisa Nelson</div>	Director	March 31, 2022

Subsidiaries of the Registrant

Apollo Fusion, LLC

Astra Earth Operations LLC

Astra Space Operations, Inc.

Astra Space Platform Holdings LLC

Astra Space Platform Services LLC

Indigo Space, LLC

All subsidiaries are incorporated or organized in the state of Delaware. Astra Earth Operations LLC was organized after December 31, 2021.

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CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our report dated March 31, 2022 with respect to the consolidated financial statements included in the Annual Report of Astra Space, Inc. on Form 10-K for the year ended December 31, 2021. We consent to the incorporation by reference of said report in the Registration Statement of Astra Space, Inc. on Form S-8 (File No. 333-259467).

/s/ GRANT THORNTON LLP

Phoenix, Arizona

March 31, 2022

**CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Chris Kemp, certify that:

1. I have reviewed this Annual Report on Form 10-K of Astra Space, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 31, 2022

By: /s/ Chris C. Kemp
Chris C. Kemp
Chief Executive Officer

**CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Kelyn Brannon, certify that:

1. I have reviewed this Annual Report on Form 10-K of Astra Space, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 31, 2022

By: /s/ Kelyn J. Brannon
Kelyn J. Brannon
Chief Financial Officer

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of Astra Space, Inc. (the “Company”) on Form 10-K for the period ended December 31, 2021 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: March 31, 2022

By: /s/ Chris C. Kemp

Chris C. Kemp
Chief Executive Officer

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of Astra Space, Inc. (the "Company") on Form 10-K for the period ended December 31, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: March 31, 2022

By: /s/ Kelyn J. Brannon
Kelyn J. Brannon
Chief Financial Officer
