Chris Kemp unplugged—Astra's CEO dishes on the space company's struggles

Enlarge / Chris Kemp, founder and CEO of Astra.

reader comments

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Chris Kemp is a fighter. That's the price of admission if you want to compete in the brutal small launch industry. He is the co-founder, chairman and CEO of Astra, founded in 2016 with a goal of essentially commoditizing small satellite launch services, or at least getting a lot closer to that than anyone else.

But there are a lot pressure points for Astra in 2023. The company abandoned its first orbital rocket design, called Rocket 3, last year after a string of failures. With higher interest rates, raising money in 2023 isn't as easy as it was a few years ago. And calling Astra's competition stiff is definitely an understatement.

Kemp argues that Astra finds itself in a different position than, say, Virgin Orbit, a small satellite launch company that went bankrupt earlier this year. Astra has diversified, and can lean on a separate source of revenue in a promising business building electric thrusters for small satellites. This business, which Astra calls spacecraft engines, was made possible by the acquisition of a company called Apollo Fusion in 2021.

SpaceX is achieving great success in aggregating large numbers of small satellites onto its Falcon 9 rocket, significantly bigger than vehicles like Rocket Lab's Electron launcher or anything on Astra's drawing board.

That has pushed Rocket Lab and Relativity Space to prioritize developing larger rockets—the Neutron and Terran R—that are partially reusable to better compete with SpaceX's Falcon 9. Astra, on the other hand, is still betting what an inexpensive, mass-produced, expendable small rocket can be successful in winning business to haul lightweight satellites into orbit, either one at a time, or in small groups. The argument there is that a small rocket can deliver payloads to optimal orbits, instead of releasing them at an undesirable altitude or inclination.

Whether or not that's the right business strategy, the predicament that Astra currently finds itself in is that the first iteration of its small launch vehicle, Rocket 3, failed to become a reliable option for customers. In seven orbital launch attempts, Rocket 3 failed five times. To be fair, Kemp points out that some of these launches were test flights without functioning satellites on board. Astra moved on from Rocket 3 after a launch failure in June 2022 destroyed two NASA hurricane research satellites.

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Ars published a story last week about the headwinds facing Astra, which recently announced layoffs of about 25 percent of its workforce. It is now staffed at between 200 and 250 employees—quite a lean operation compared to peers in the small launch industry. Around 50 of those employees were shifted from working on Astra's new rocket, called Rocket 4, to devote their time to satellite propulsion systems.

Astra has a big challenge ahead, but it's obvious Kemp isn't ready to throw in the towel. He spoke with Ars on Friday from Astra's rocket factory in Alameda, California. Here are some

highlights.

Is it fair to say Astra is in a fight for survival?

Chris Kemp: “It is a little unfair … We have a very profitable source of revenue, which is our spacecraft engine. We’ve sold hundreds of them at great margins.

“This is our rocket facility. This is a quarter of a million square feet. You can see the rocket production line behind me. There are people down there making rocket stuff. It’s real. That’s a Rocket 4 stage on the production line … I could characterize the launch business at Astra as fighting for its survival, but I wouldn’t characterize Astra as fighting for its survival. Astra has always had the option of just stopping the launch business. The reason why we haven’t is we have already largely completed the development and the capex [capital expenditures] required to manufacture the vehicles two years ago, when we started the Rocket 4 program, hundreds of millions of dollars ago, before we had engines and stages and a giant $100 million production line. We’ve now done so much work toward this program that the next step is just testing things and going out and doing some test flights. Then the Space Force has some flights. We have some NASA flights. We have a backlog of launch contracts. In the case of the Space Force contract, that’s an $11.5 million contract, millions of dollars of cash comes in, in advance of launch, because of the milestones we’re achieving.

“So I look at it and I say, well, if I were not to do launch, we simply wouldn’t be able to bill the Space Force for these milestones. So what it does it cost me to continue running launch versus what would it cost me to shut down launch? It’s kind of a wash, honestly, if we continue to get contracts and government support for launch, and the government has said that they really want to support it. I mean, there are three

(private or venture-backed) companies right now operating that have put satellites in orbit—SpaceX, Rocket Lab, and Astra—full stop. Firefly's stuff deorbited in a few days. ABL blew up everything, Relativity failed and scrubbed the program and won't fly again until 2027 [Relativity says Terran R's first flight is scheduled for 2026].

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Enlarge / Astra revealed a prototype of its Rocket 4 launch vehicle in May.

"The way I look at it is there are three launch companies that can point to the sky and say we've put satellites in orbit, and we're one of them. And we're the only one of them that has already invested hundreds of millions of dollars in a production line. We're the only one of them that has a mobile system that we have already demonstrated. We can go to Cape Canaveral and set up in under a week. We have some Space Force people here right now walking the production line … We have folks that view what Astra has built and demonstrated, and they say, 'This has value to us, you guys have a mission control with two people in it, you guys have a system that last year deployed at Cape Canaveral in six days.'

“It’s only going to get better from here with a 600-kilogram class vehicle (Rocket 4’s planned payload capacity to low-Earth orbit), and I think that puts Astra in a position where just killing launch, given we have customers and cash and revenue coming into that business, isn’t an obvious choice for us. It’s a risky choice for us.

“But we’ve got this public company now with stock trading at 25 cents per share. That makes it nearly impossible for us to raise any meaningful amount of capital in public markets. So that basically means that we need to take the revenue coming in, the cash coming in from our spacecraft engines business, and whatever cash comes in from our launch business, and kind of make it work.”

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