


BUSINESS

# The space race is transforming Southern California's economy — again



The Haven-1 space station model on display at the headquarters of Vast aerospace company in Long Beach on Thursday, Aug. 21, 2025. (Allen J. Schaben/Los Angeles Times)



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- Southern California's space economy is being revitalized with a new wave of startups pushing technological boundaries.
- A report by the Los Angeles Economic Development Corp. shows the county's aerospace and defense industries added 11,000 jobs between 2022 and 2024. The jobs had an average wage of \$141,110 — more than twice the county average.

In a giant Long Beach warehouse near where Boeing used to build the C-17 cargo jet, Vast is fabricating what could be the first commercial space station to circle Earth.

Just up the road in El Segundo, Varda Space Industries has grown molecular crystals in microgravity with few impurities for pharmaceuticals that one day could be injected in cancer patients.

And a little south in Seal Beach, a scrappy company called AstroForge aims to land a satellite on an asteroid just a football field wide and mine possibly billions in platinum riches.

The companies aren't anomalies but rather three examples of Southern California's growing space economy, which [shrank after the Cold War](#) but is being revitalized with a new wave of startups pushing technological boundaries.

Southern California has an illustrious aerospace heritage, starting with some of the first first rocket experiments at what was to become the [Jet Propulsion Laboratory](#) — with the region later producing the X-15 rocket plane, the Apollo capsule and the space shuttles.

Today's innovators are following in the flight path of a relative newcomer: Elon Musk's SpaceX, which [set up shop in El Segundo](#) in 2002 to draw on the region's

deep engineering talent and successfully pioneered the development of low-cost reusable rockets.

Though the company has [since moved to Texas](#), its main operations remain in Hawthorne and many of the new companies have been founded by SpaceX alumni — or are reliant on its Falcon 9 workhorse rocket, which recently surpassed 500 launches.

“The massive drop in the cost of getting mass into orbit, and the frequency with which they do launches ... is almost exclusively due to SpaceX, “ said Andrew Sather, a partner at [Initialized Capital](#), a San Francisco venture capital firm that invested in AstroForge.

Some 128 aerospace, artificial intelligence and companies in other fields have been founded by former SpaceX employees — with 96 started in the last five years still in operation, according to the [alumnifounders.com](#) website run by a San Francisco tech executive.

Nearly half, or 63, were founded in Southern California, including 20 in aerospace. No other region comes close, including Silicon Valley or the Pacific Northwest, where Jeff Bezos’ Blue Origin rocket company is based in Kent, Wash.

Some companies just come to the region to be close to same talent pool and aerospace manufacturing base that first attracted SpaceX. Rocket Lab, which launches small satellites, was founded in New Zealand but moved to the region in 2013 and opened [new headquarters in Long Beach](#) in 2020.

And it’s not just the contrails that reflect the region’s rebound — it’s also the money.



A view of the entrance to SpaceX in Hawthorne on Dec. 19, 2018. Though the company has since moved to Texas, its main operations remain in Hawthorne. (Los Angeles Times)

Some of Silicon Valley’s leading investors have placed bets here, including Khosla Ventures, Andreessen Horowitz and Peter Thiel, whose Founders Fund was the lead investor in a June [\\$2.5 billion funding round](#) for Anduril, a Costa Mesa maker of drones and other autonomous defense systems now valued at \$30 billion.

A forthcoming report by the Los Angeles Economic Development Corp. shows the county’s aerospace and defense industries added 11,000 jobs between 2022 and 2024. While those 58,700 plus total jobs are well below the historic peak, they had an average wage of \$141,110 — more than twice the county average.

“A lot of folks have kind of made the assumption that the aerospace and defense industry has left the entire region,” said Stephen Cheung, chief executive of the organization. “What they didn’t see is a lot of the manufacturing was still here, and

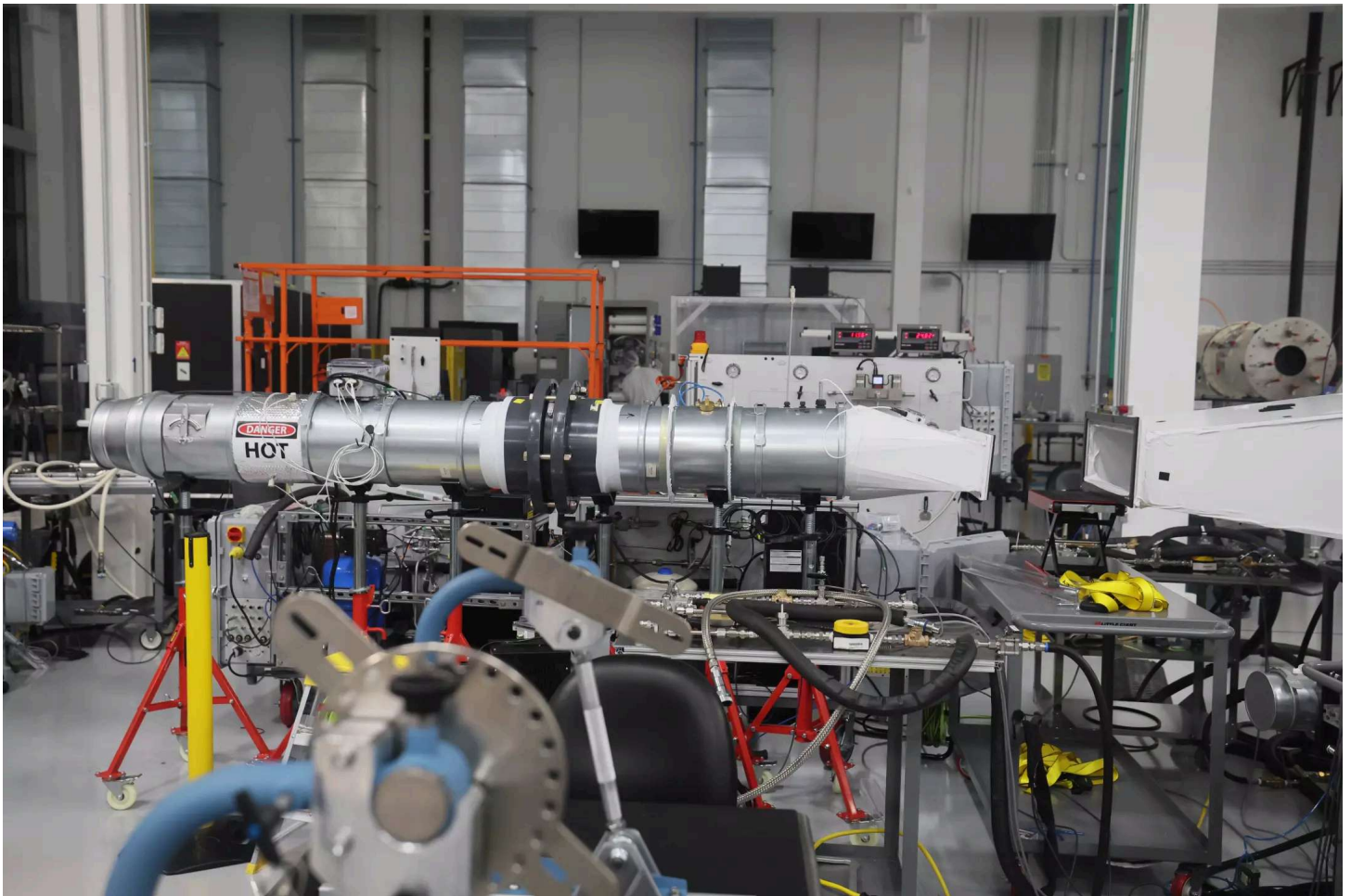
over the last 10 years, you've been seeing this transition into space commercialization, and now that's stimulating a whole new ecosystem.”

## A new ecosystem

Consider the ambitions of [Vast](#). The Long Beach startup wants to build a replacement for the most expensive object created by humanity: the \$150 billion International Space Station, which is being retired in 2030 after three decades in orbit.

The football field-sized vehicle was the product of 15 nations, while the privately funded Vast is spending a fraction of that amount to launch its first small station next year, which it hopes will convince NASA to choose it over [Blue Origin](#) and other fledgling competitors to replace the ISS.

It might have a leg up with its SpaceX connection. Its Haven-1 space station is designed to fit in the nose cone of a Falcon 9, while the astronauts would be ferried up later in a SpaceX Dragon capsule.



A space station component at Vast in Long Beach on Aug. 21. The aerospace company is designing and building the commercial space station Haven-1 at its headquarters in the city. (Allen J. Schaben/Los Angeles Times)

Still, the startup has a long way to go.

“To become a proven space station company, we need to build one, launch one, and we need to have a crew visit it and come back home safely,” says Max Haot, an aerospace entrepreneur named chief executive in 2023 by founder [Jed McCaleb](#), who made his fortune in cryptocurrency and is spending at least \$1 billion on the venture.



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The company started in El Segundo in 2021 with just a few dozen employees, many of whom worked at SpaceX. It now has close to 1,000 and a recently expanded 189,000-square-foot headquarters complex — in the same Long Beach neighborhood where Boeing built the C-17 Globemaster cargo jet before that line [was shut in 2015](#).

Faced with such a huge loss, Long Beach rezoned the neighborhood to attract advanced manufacturers such as aerospace companies, which now total about 30 across the city, including headquarters and major operations.

Among them is [Relativity Space](#), a startup founded the same year the C-17 line shut down, that is developing 3-D printed rockets to further cut launch costs. The potential attracted billionaire Eric Schmidt, the former Google chief executive, who this year took over the business.

“At the end of the day, companies want to be around other companies where employees can bump into each other at the coffee shop,” said Long Beach Mayor Rex Richardson. “We’ve prioritized bringing these companies because they bring higher-quality jobs.”

Last week, in Vast’s manufacturing building, a machine tool was precisely cutting flat aluminum pieces for the shell of the spacecraft, forming a honeycomb pattern that provides strength but at a lower weight. At other stations, avionics and life support systems were being tested.

“If you look at it, it’s very simple, not only is the talent all here ... but we rely on a lot of partners to manufacture and process parts. There’s just an incredible amount of local facilities and skills that you need to build space systems,” Haot said of the area.

## Testing pharmaceuticals in space

Vast's first headquarters was in El Segundo and that's not just happenstance. The city has long been a favorite for aerospace companies and it's where SpaceX opened its original headquarters on East Grand Avenue — before it moved when it needed more space.

Will Bruey, a former SpaceX avionics engineer, was recruited by a Bay Area venture capitalist in 2020 to co-found a microgravity pharmaceutical developer called [Varda Space Industries](#). He had a choice of where to set up shop — and the decision was easy.



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Bruey, 36, wrote a computer program to scrape recruiting websites such as LinkedIn and found the city had more of the aerospace, electrical, structural and mechanical engineers that he needed than any other place. “El Segundo was at the peak of the heat map — all the engineering you need,” said the chief executive.

Varda now employs more than 140 and has attracted [\\$329 million in venture capital](#). It's on its fourth mission and has become the first startup with Federal Aviation Administration approval to return commercial payloads from space.

The company makes automated labs the size of a cylindrical desktop speaker that it sends up to orbit in capsules and satellites it also builds. There, in microgravity, the miniature labs grow molecular crystals that are more pure than those produced in Earth's gravity.

The concept was proven in 2019 by [Merck in an experiment done](#) aboard the International Space Station, and Varda partners with pharmaceutical companies to

grow crystals for drugs to combat cancer and HIV. A purer drug formulation, for example, could allow an IV-based infusion to be replaced by a small injection.

“What we do is we take molecules that are known to be effective in the human body, and we can create new formulations that otherwise would be impossible,” Bruey said.

The fast-growing company operates out of a 61,000-square-foot building not far from the [Los Angeles Air Force Base](#), which develops, tests and maintains military satellite constellations. It also recently signed a lease for 10,000 more square feet nearby for lab space focusing on its drug development.

The metamorphosis of the city into a haven for aerospace startups is exemplified by the transformation of the [Smoky Hollow neighborhood](#) — so named because it once was notorious for the gas clouds that settled in the area from the adjacent Chevron refinery.

Once populated by small shops that serviced the refinery, today it’s cleaned up and the home of aerospace and advanced manufacturers — helped along by fiber optic cable the city had telecommunications providers install.

“That is one of those magical points in time that really flipped the switch on that area for an innovation economy enabled by technology,” said Mayor Chris Pimentel.



Workers assemble a space capsule at Varda Space Industries in El Segundo. (Varda Space Industries)

## Mining minerals from asteroids

If Varda's goals seem ambitious, other fledgling companies have plans that seem even quixotic.



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One of them is [AstroForge](#), a three-year-old Seal Beach firm whose ambitions aren't even captured by the phrase "moon shot." It's aiming to mine metals from a type of asteroid with high concentrations of platinum.

Co-founder and chief executive Matt Gialich knows the idea sounds fantastic but said SpaceX faced the same skepticism.

“Whenever you see a technological shift that has not been done before, it’s always going to seem like science fiction,” said the 39-year-old former Virgin Galactic avionics engineer.

NASA actually has already landed a spacecraft called [OSIRIS-REx](#) on an asteroid and dropped off a small sample of material back to earth two years ago. But that scientific mission cost taxpayers some \$1.2 billion, while AstroForge has raised just \$60 million and prior asteroid mining startups such as Planetary Resources [never got off the ground](#).

AstroForge’s last mission to take high resolution asteroid images failed when it lost contact with the probe, but Gialich is pushing ahead with a more challenging mission next year to complete a landing.

“If we depart from Falcon and we never turn on and never make contact with the spacecraft, I think we go bankrupt as a company, and we probably deserve to,” he said. “If we make it all the way to the asteroid and it’s the wrong type of asteroid, I think we’ll have no problem raising a huge amount of additional capital.”

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Laurence Darmiento covers finance, insurance, aerospace and dealmakers in Southern California for the Los Angeles Times. He joined the paper in 2015 as an assistant Business editor and has overseen finance, real estate and Washington business coverage. Previously he had been the managing editor of the Los Angeles Business Journal and was a reporter for the Los Angeles Daily News and other outlets. A New York native, he is an alumnus of Cornell University.