

EXPLORE



“sic itur ad astra”

~ thus you shall go to the stars

EXPERTISE FOR THE MISSION

We've built more interplanetary spacecraft than all other U.S. companies combined. We're ready for humanity's next step, for Earth, the Sun, our planets ... and beyond.

We do this for the explorers. And for us

Achieving in space takes tenacity.
We've never missed a tight (and finite)
planetary mission launch window.
Yet, despite how far we go, the most
important technologies we develop
improve life now, closer to home.
Here on Earth.

New capability for a new space era

Lockheed Martin brings more
capability to the table than ever
before, creating better data, new
images and groundbreaking ways to
work. And we're doing it with smarter
factories and common products,
making our systems increasingly
affordable and faster to produce.

HALF A CENTURY AT MARS

Getting to space is hard. Each step past that is increasingly harder. We've been a part of every NASA mission to Mars, and [we know what it takes](#) to arrive on another planet and explore. Our proven work includes aeroshells, autonomous deep space operations or building orbiters and landers, like InSight.

AEROSHELLS



VIKING 1
1976



VIKING 2
1976



PATHFINDER
1996



MARS POLAR
LANDER
1999



SPIRIT
2004



OPPORTUNITY
2018



PHOENIX
2008



CURIOSITY
2012



INSIGHT
2018



MARS 2020
2020

ORBITERS



MARS OBSERVER
1993



MARS GLOBAL
SURVEYOR
1997



MARS CLIMATE
ORBITER
1999



MARS ODYSSEY
2001



MARS RECONNAISSANCE
ORBITER
2006



MAVEN
2014

LANDERS



VIKING 1
1976



VIKING 2
1976



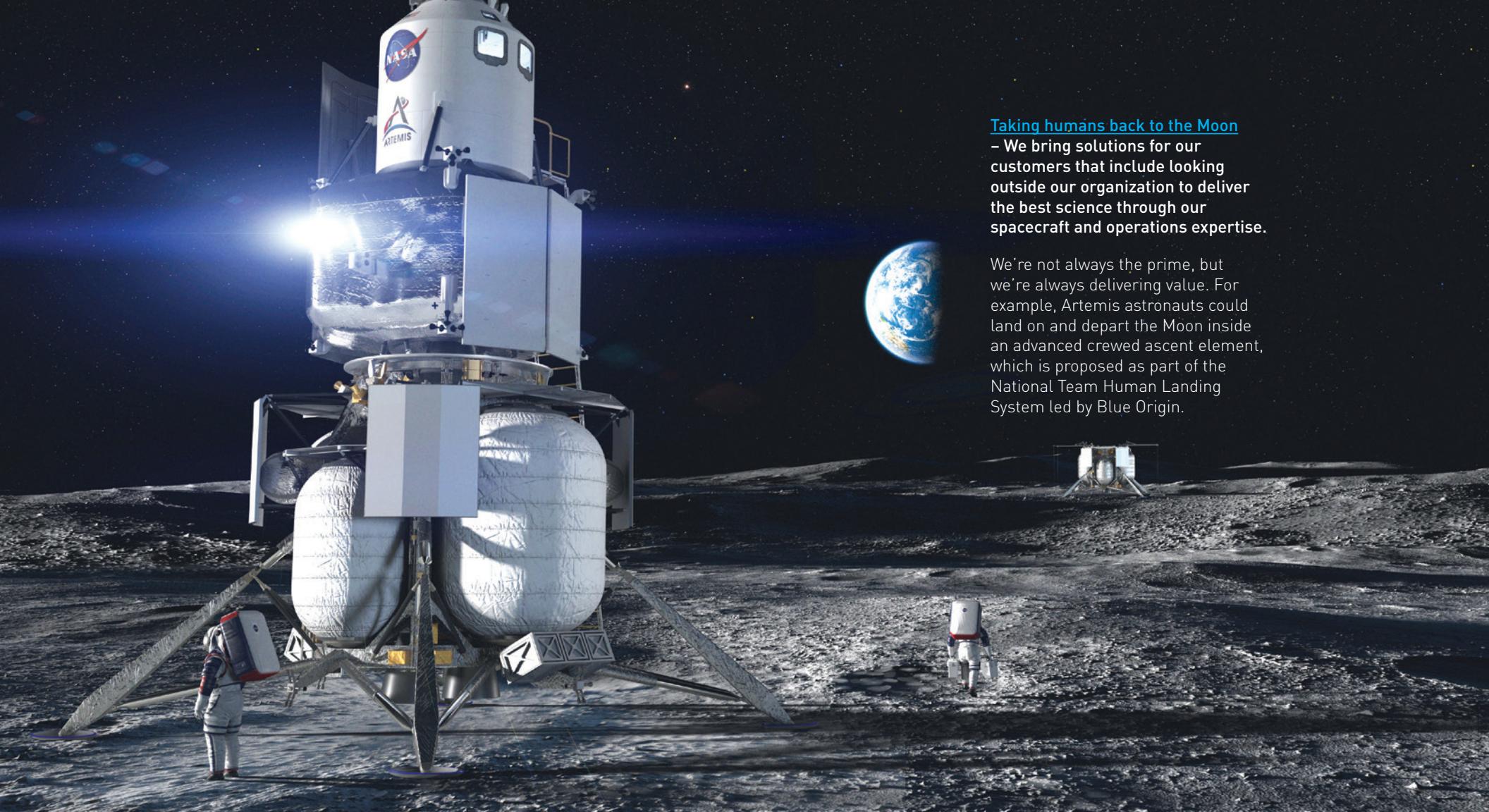
MARS POLAR
LANDER
1999



PHOENIX
2008



INSIGHT
2018



Taking humans back to the Moon

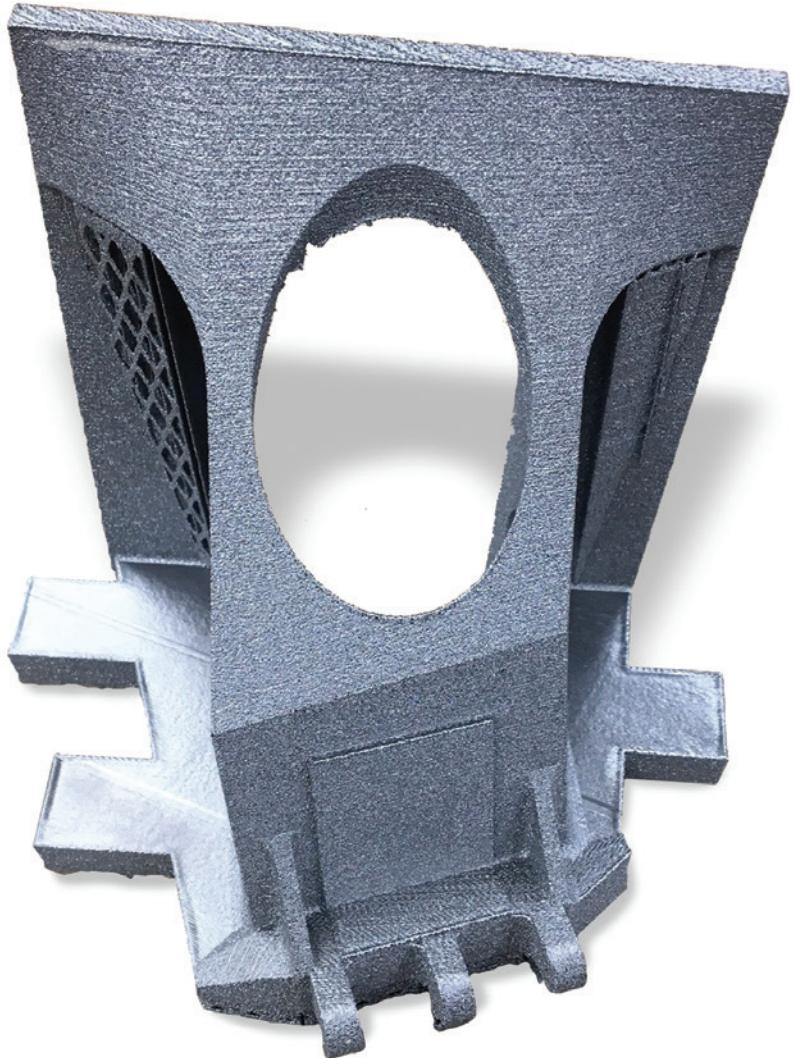
– We bring solutions for our customers that include looking outside our organization to deliver the best science through our spacecraft and operations expertise.

We're not always the prime, but we're always delivering value. For example, Artemis astronauts could land on and depart the Moon inside an advanced crewed ascent element, which is proposed as part of the National Team Human Landing System led by Blue Origin.

Orion – NASA's spacecraft that will take humans into deep space.

No other spacecraft in development has the technology needed for the extremes of such journeys, like life support, navigation, communications, radiation shielding and the world's largest heat shield. From its inception, [Orion was designed](#) to visit a variety of destinations in our solar system. Whether in orbit around the Moon, on a three-year mission to Mars, or even other near-Earth bodies such as asteroids, Orion has unique capabilities that are needed beyond shorter missions to the International Space Station. That's why Orion is a critical part of NASA's Artemis program to build a sustainable presence on the lunar surface and to prepare us for a future on Mars.





Investing in solutions – Through [millions of dollars in investment](#), we're accelerating new, agile ideas from startups and small businesses across the country.

This includes advanced manufacturing startup nTopology, whose software shortens the span between design and manufacturing, especially for 3D printing.

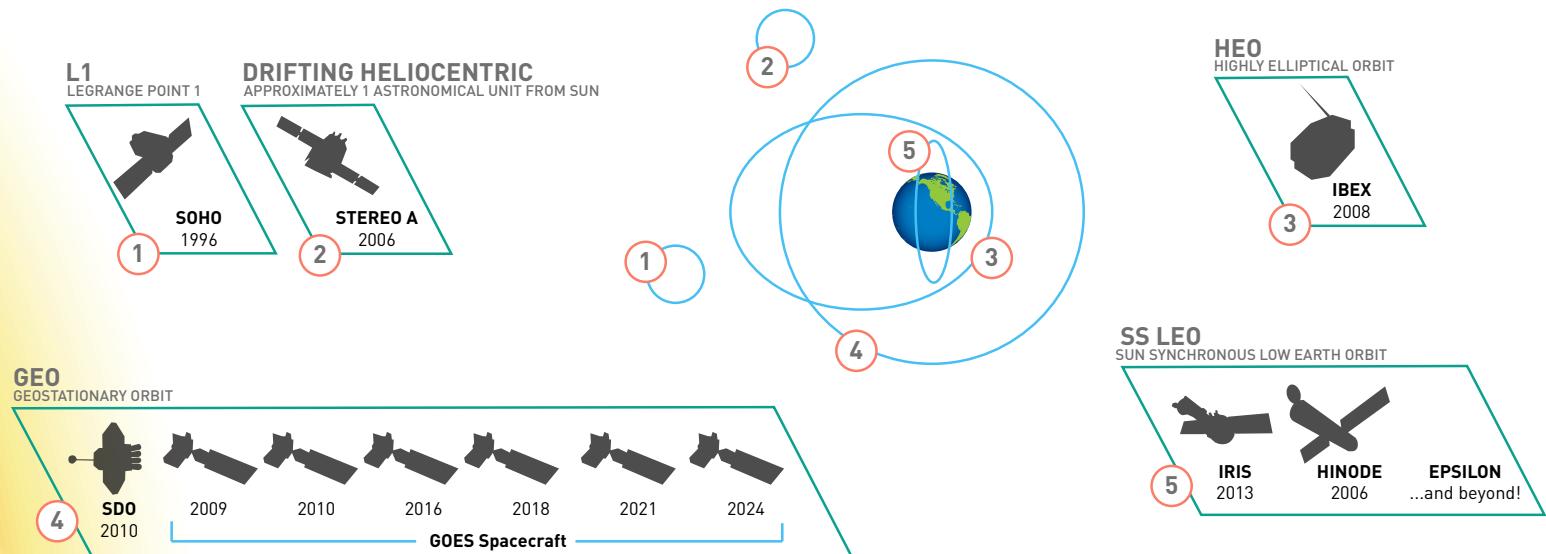


GOES-R series – We're delivering
[better information about Earth](#)
and its systems through spacecraft
like the GOES-R Series of weather
satellites.

Future systems based on this bus
design will use LM 2100™, our
upgraded GEO platform that has 26
improvements over its predecessors.
Reprogrammable. More powerful.
Faster to build. The kind of solutions
we're delivering for our customers.

SHINE ON

Our engineers at the [Advanced Technology Center](#) in Silicon Valley built technology on 22 spacecraft studying the Sun, and our scientists deliver 90 percent of NASA's heliophysics data. From wide views studying the flares to dazzlingly intricate up-close analysis of the surface, Lockheed Martin ensures we can give fast warning about damaging solar storms and understand why they're happening. Heliophysics is just one way we're partnering with nations around the globe for better space capability. We built solar instruments for nations in Asia and Europe, and we host a multinational group of scientists in Silicon Valley to better understand our star.





Sample return – We're the only American company to develop and fly a robotic mission to bring back samples from deep space. Twice.

And we're doing it again with OSIRIS-REx. If we can rendezvous with an asteroid, imagine what more we could deliver back to Earth in the future.

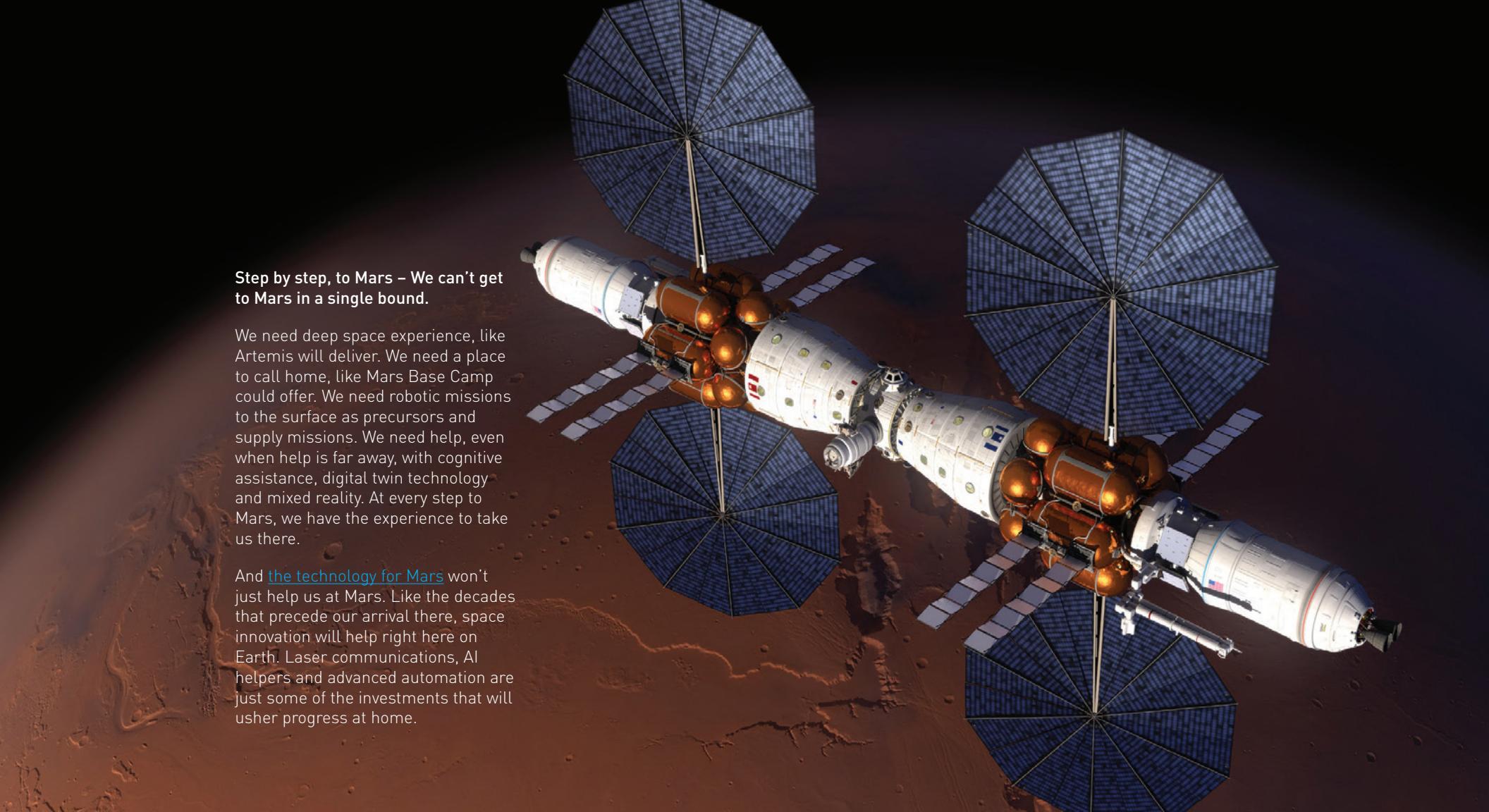
RETHINKING DISCOVERY

To go beyond, we are thinking beyond. New tools help us create faster and affordably. New digital realms deliver more insights. Bold thinking for a new era.



Advancing the planet – We benefit from space data every day. Farmers plan their crops. Pilots carry people and precious cargo. Investors buy stocks. We watch the news. All of it involves space.

Space even warns against tornadoes. Our [Geostationary Lightning Mapper](#) is the first instrument to constantly monitor lightning in space, and that contributes to improved severe weather alerts. And we learn more about the air we breathe. GeoCarb will reveal more about how carbon affects Earth's atmosphere and how the environment might change because of it.



Step by step, to Mars – We can't get to Mars in a single bound.

We need deep space experience, like Artemis will deliver. We need a place to call home, like Mars Base Camp could offer. We need robotic missions to the surface as precursors and supply missions. We need help, even when help is far away, with cognitive assistance, digital twin technology and mixed reality. At every step to Mars, we have the experience to take us there.

And [the technology for Mars](#) won't just help us at Mars. Like the decades that precede our arrival there, space innovation will help right here on Earth. Laser communications, AI helpers and advanced automation are just some of the investments that will usher progress at home.



Changing our view on manufacturing

– Using virtual tools speeds our ability to deliver.

In some cases, adopting augmented reality on the Orion production line reduced time technicians took to interpret assembly instructions by 95 percent with an 85 percent reduction in overall training time and 40 percent boost in productivity.

Using the Industrial Internet of Things, intelligent factories are the first manufacturing environments established in our industry to automatically collect machine data. This wealth of information helps us optimize decision making, support predictive maintenance, reduce overall downtime and improve manufacturing outcomes, all creating more affordable products and earlier deliveries.

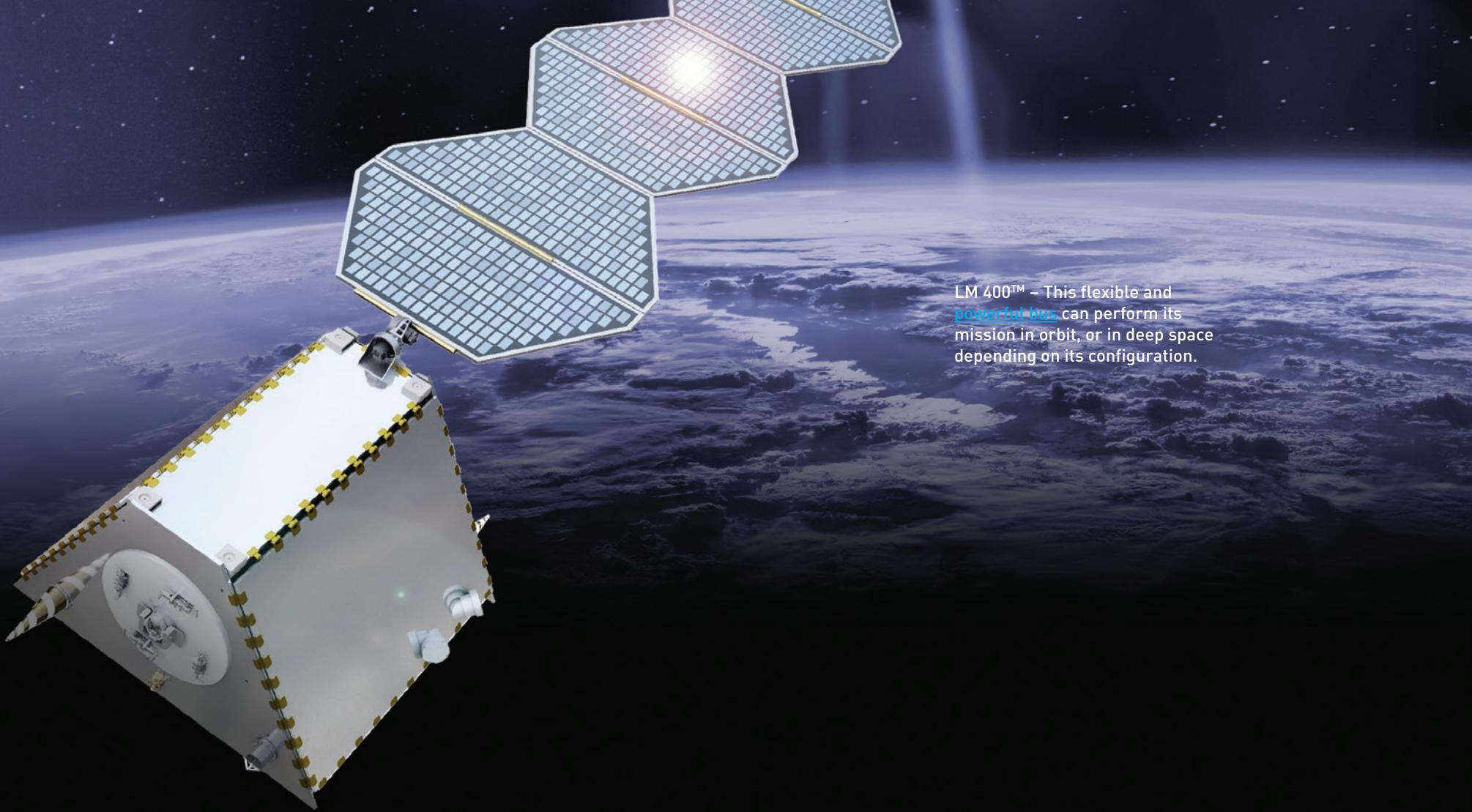
Deep space digital assistants - Our Model-Based Artificial Intelligent Assistant ([MAIA](#)) could give astronauts the right answers when it matters most.

MAIA constantly learns by accessing data from a digital twin of the spacecraft and sensors, distilling meaningful information for the crew to effectively solve problems when help is a world away.

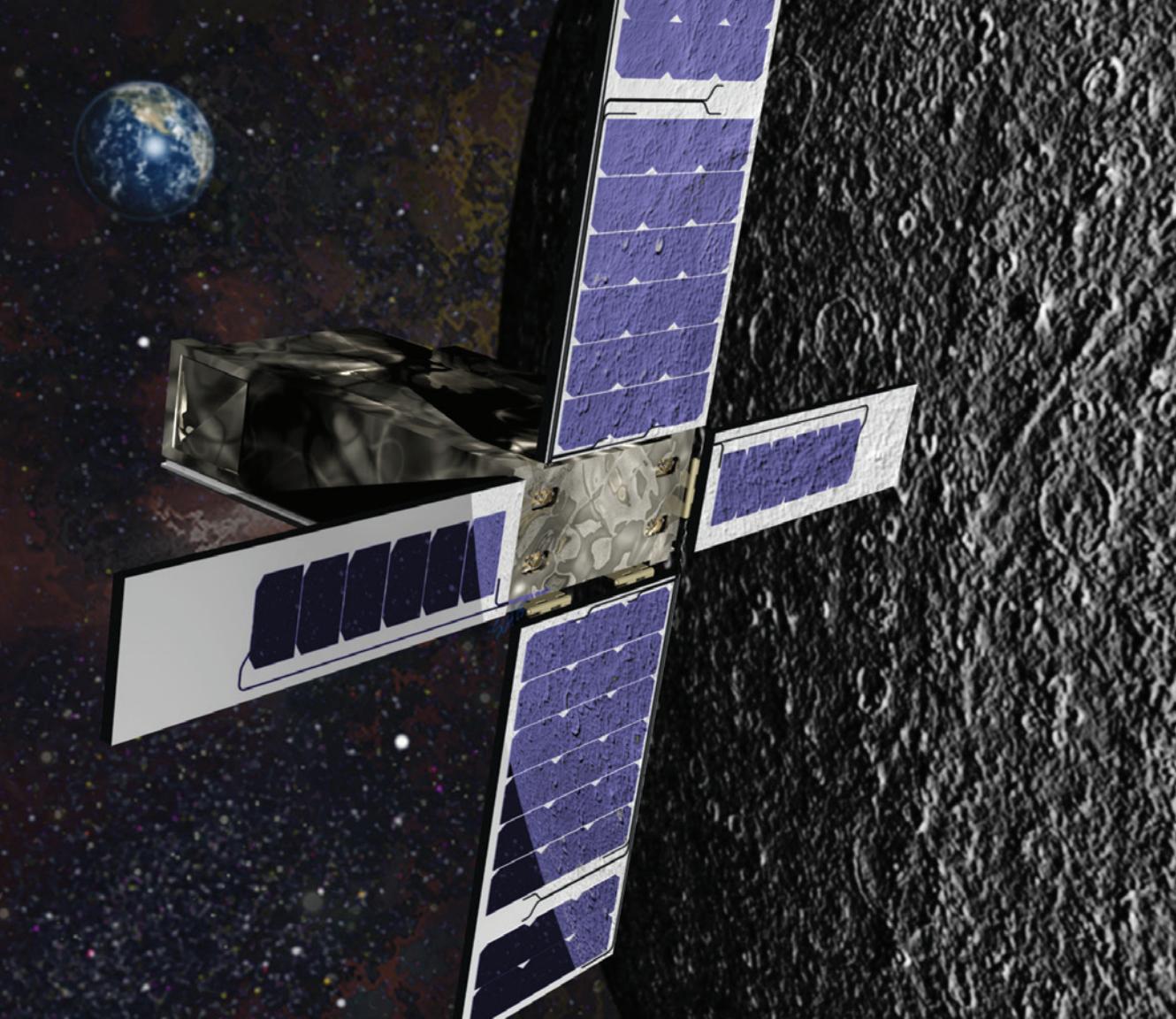


NEW OPTIONS FOR THE MISSION

We're constantly reinventing ourselves to give more options to our customers. Smaller, more capable spacecraft. Reconfigurable buses. Resilient constellations. We're delivering more so our customers can go farther.



LM 400™ – This flexible and powerful bus can perform its mission in orbit, or in deep space depending on its configuration.



[LunIR](#) – This 6U-sized nanosat will perform a lunar flyby during the Artemis I mission, taking images of the surface both as a testbed for future missions and also delivering new data about the Moon.

Lockheed Martin. Your Mission is Ours.[®]



www.lockheedmartin.com/space

