

INTUITIVE MACHINES: ENABLING COMMERCIAL SCIENTIFIC EXPLORATION. D. B. J Bussey¹, T. D. Martin¹ & the IM Team, ¹Intuitive Machines, 13467 Columbia Shuttle St., Houston, TX 77059, USA, bbussey@intuativemachines.com.

Introduction: Intuitive Machines (IM) is a leading space infrastructure company that builds spacecraft, connects networks, and operates infrastructure-as-a-service. With a proven track record across the space domain, IM, through organic growth and portfolio expansion, has built over 300 spacecraft, delivered over 260 kilograms of payload to the lunar surface, and provided precision navigation expertise that has guided spacecraft across our Solar System. These capabilities form an integrated Built-Connect-Operate infrastructure service company, enabling customers to achieve mission and campaign outcomes through a single prime solution. Intuitive Machines' technology has been demonstrated across the space domain and is engineered to support the next century of opportunity in space.

Lunar Surface Services: IM is a participant in the NASA Commercial Lunar Payload Services (CLPS) initiative. As of March 2026, NASA has awarded eleven CLPS contracts to deliver payloads to the lunar surface. IM has won four of those contracts. All four deliveries use the IM-designed Nova-C lander. Nova-C uses one, IM-designed & built, VR-900 bipropellant engine to deliver over 130 kg of payload anywhere on the Moon. Multiple payload mounting points are available on the Nova-C, which provides power and communications to the payloads for the mission duration. IM can also deliver up to 2500 kg of payload to the lunar surface with the Nova-D lander. IM has conducted two lunar landing missions. Both landers carried NASA CLPS payloads as well as several commercial payloads.

IM-1: The IM-1 mission (February 2024) landed near Malapert-A crater ([80.13°S, 1.44°E](#)) in the lunar south polar region. The Odysseus Nova-C spacecraft landed in an off nominal surface orientation due to a cabling issue with the laser altimeter. However, the vehicle operated for over six Earth days, returning more than 550 Megabytes of engineering and image data, demonstrating the robust system design

IM-2: The Athena lander touched down in the Mons Mouton region of the Moon on March 6th 2025. Unfortunately the lander ended up on its side, in a small crater. Despite this, it operated on the surface for

approximately 14 hours, allowing several of the instruments to operate and download data.

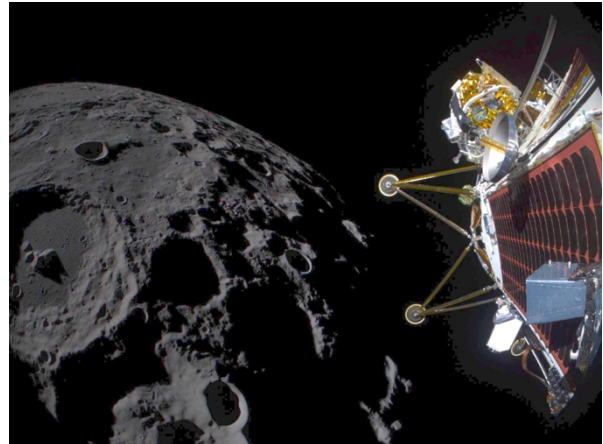


Figure 1: IM-2's Athena flying over the south pole. IM can drop satellites off into lunar orbit during this phase of a lander mission

Upcoming Lunar Missions: IM-3, scheduled for flight in late 2026, will land on the Reiner Gamma formation, and will carry the CLPS payload Lunar Vertex as well as instruments from Korea, and the European Space Agency. IM-4, scheduled for launch in late 2027, will carry an ESA payload to the lunar south polar region.

We aim to provide a reliable cadence of lander missions. This regular lunar access cadence provides the lunar science community the maximum flexibility when planning lunar exploration.

Satellite Delivery Services: In parallel to conducting a lunar surface delivery, IM can deliver satellites into various orbits. Options include deploying into a 185 km x 380 000 km translunar injection or being dropped off into a 100 km circular lunar orbit.

Lunar Communications and Precise Navigation & Timing (PNT): IM offers ancillary capabilities to enhance data return from the Moon. A key one is our communications infrastructure. IM has developed the first private, secure, interoperable lunar distance communication network. We have agreements with ground stations located worldwide, which, combined with our communication relay spacecraft, provide a complete lunar communications and navigation solution. The first

communication relay spacecraft, will be delivered into lunar orbit in late 2026.

Deep Space Navigation Capabilities: Through its subsidiary, KinetX Aerospace, IM offers world-class expertise in space navigation, flight dynamics, operations, and systems engineering. KinetX was the first private company to be qualified for NASA deep-space navigation. We offer a full range of orbit dynamics and deep-space navigation expertise for every phase of a mission. In the past twenty years we have navigated some of the most complex planetary exploration missions ever flown, including MESSENGER, New Horizons, OSIRIS-Rex, Lucy, LunaH-Map, and other commercial and international missions.



Figure 2: Lucy flyby of asteroid Donaldjohanson.

Spacecraft Manufacturing Capabilities: Through its subsidiary, Lanteris Space Systems, formerly Maxar Space Systems, IM is a world leader in commercial GEO communication satellites and a global leader in commercial satellite manufacturing. With over three decades of on-orbit performance, our 1300-class spacecraft platform is the world's most popular GEO satellite; over 95 spacecraft are currently in service, providing 99.9972% uptime availability for our customers. In addition, Lanteris Space Systems manufactured a constellation of advanced high-resolution Earth-imaging satellites for Vantor Inc., formerly Maxar Intelligence, using its 500-class spacecraft platform.

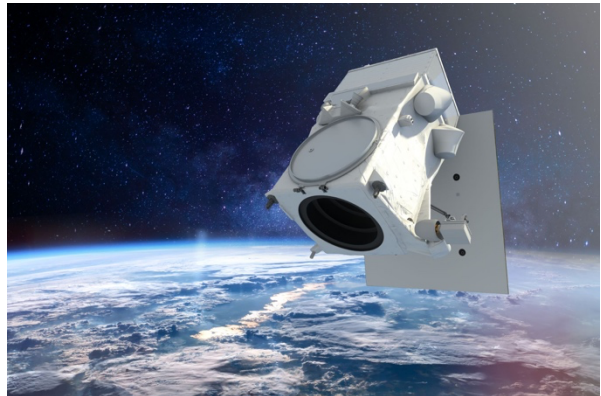


Figure 3: A WorldView Legion satellite, built by Lanteris Space Systems, a subsidiary of Intuitive Machines.