Orbital Intelligence at Scale

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Company Overview

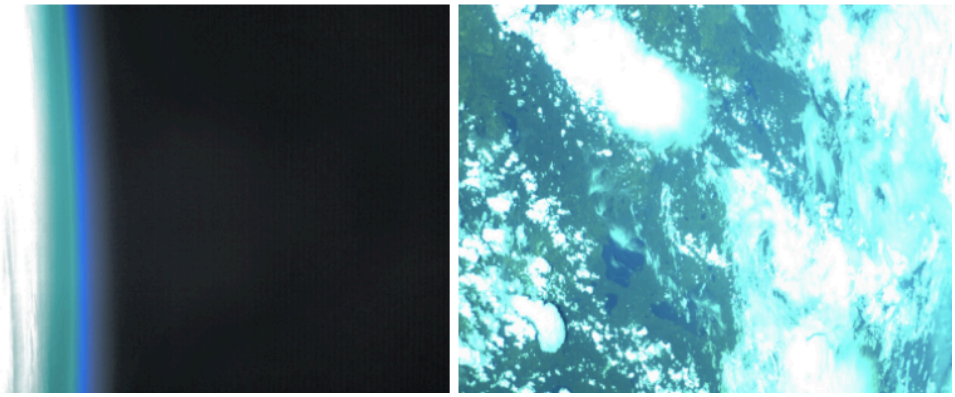
About Scout Space

Scout Space Inc. is a nontraditional contractor and small business that was founded in 2019 with the **goal of delivering autonomous intelligence and security across all orbital regimes** in the face of an increasingly dangerous space environment. The company is developing and deploying a family of in-space sensors to perform in-orbit collection, processing, exploitation, and provide autonomy capabilities in support of counter space and space sensing mission areas. This on-orbit processing delivers mission-critical and actionable intelligence within a space-to-space sensing domain, and demonstrates novel exploitation approaches. All systems leverage our proprietary flight software and AI, which can also be deployed on non-Scout sensors. This will allow Scout to scale and proliferate its capabilities to a large number of sensors rapidly.

Flight Heritage

Scout was an early mover in the commercial space situational awareness (SSA) segment, deploying dedicated space-to-space capabilities in orbit. Scout's first on-orbit payload consisted of optical hardware and software integrated into the OrbitFab Tenzing mission. Scout provided cameras and image capture software, capturing and downlinking on-orbit images as a proof-of-concept hardware test.

Scout's second flight was the first demonstration of Scout's purpose-built rendezvous and proximity operations (RPO) payload, Sparrow. This payload is a low size, weight, power, and cost (SWaP-C) payload which provides imaging and edge processing capabilities in a 1-2U form factor. While Sparrow is primarily tailored for RPO, it is also capable of providing space domain awareness (SDA) and collision avoidance capabilities. The flight unit was built, tested, and integrated into Apex's Aries-1 demonstration mission in less than 6 months, then launched on Transporter-10 in March 2024. Sparrow was successfully commissioned and continues to operate on-orbit after more than a year. Scout has also built and delivered a Sparrow unit to Momentus Space with a flight planned in early 2026.



Calibration images aboard Aries-1 captured on 12 and 14 August 2024

Rapidly Maturing Core TRLs

Scout is currently performing multiple demo missions over the next 12 months to quickly mature our core technologies in VLEO, LEO, GEO, and beyond. Specifically, these upcoming deployments will demonstrate the following technologies:

- Extensive hardware capabilities from close-range camera systems to long-range gimballed SDA telescopes
- Non-resolved observations, tracking, and metric collections
- Semi-resolved to resolved domain transitions
- Proprietary pose estimation pipeline in real proximity operations missions
- Autonomous relative navigation
- Characterization, object segmentation, and pattern-of-life analysis
- Overall in-situ performance benchmarking using both traditional GPUs and space-qualified FPGAs

Planned Missions

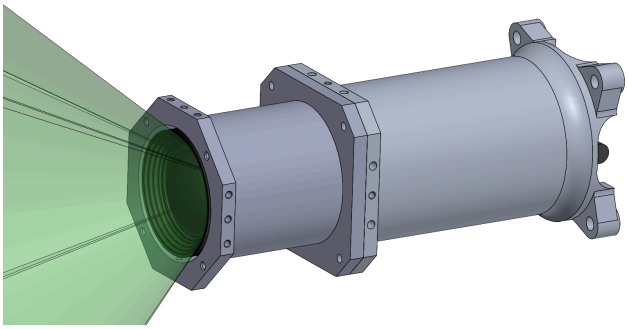
Partner	Date (CY)	Product	Orbit	Overview
NOVI	*2Q 2025*	*Scout Point*	*LEO*	*Scout Point software demonstration on flight computer (COMPLETED)*
Dawn Aerospace	*3Q 2025*	*Sparrow*	*vLEO*	*2x close range EO cameras and 1x highly sensitive event based camera*
Undisclosed	*1Q 2026*	*Owlet*	*GEO*	*0.6 m focal length, f/4 telescope plus 2x close range EO cameras*
Pulse Space	*1Q 2026*	*Sparrow*	*LEO*	*2x close range EO cameras and 1x SWIR camera with custom 1 m focal length optic*
Momentus	*1Q 2026*	*Sparrow*	*LEO*	*2x close range EO cameras for RPO mission*
Undisclosed	*3Q 2026*	*Sparrow*	*LEO*	*2x close range EO cameras to monitor deployments*
TBD (GFE)	*4Q 2026*	*Owl-350*	*GEO*	*1.4 m focal length, f/4 telescope mounted on two-axis gimbal plus 2x close range EO cameras*

Overview of Scout's Sensors

Existing Payloads

Name	Launch	Optics	Weight	Power	Use Cases
SV-50	June 2021	2x 50 mm fl, f/2.8	Integrated	≤ 20 W	Rendezvous, Proximity Operations, and Docking
SV-50-M	March 2024	50 mm fl, f/2.8	1.8 kg	≤ 25 W	Inspection

Payloads Currently Under Development and Integration



Finch: Close-Range RPOD & Inspection

Finch is a minimum viable product optical payload with flexible mounting options to accommodate a variety of spacecraft and missions. Its intended orbital domain is LEO. Currently, the Finch payload is at a TRL-3.

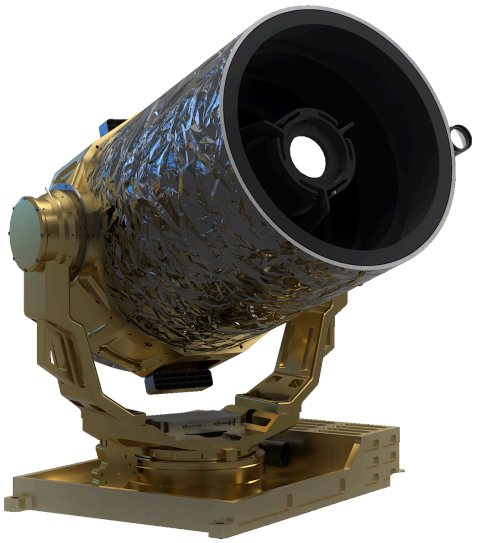
Finch Base Configuration	
SWaP	
Size (mm)	<180 x 75 x 75
Weight	<1 kg
Estimated Average Power	<5 W
Interfaces	
Power Interface	12 VDC
Data Interface	Ethernet
Mechanical Interface	Configurable mounting assembly (depends on bus)

Sparrow: Relative Navigation & Satellite Servicing

Sparrow is a low-SWAP close-range optical payload that augments your mission as an add-on capability for performing close proximity operations, gathering imagery and intelligence on spacecraft operations, and identifying, classifying, and tracking objects in orbit in near-real time. Its intended orbital domain is LEO. Currently, the Sparrow payload is at a TRL-8.

Sparrow Variant	**Sparrow-Mono**	**Sparrow-Stereo**	**Sparrow-Trio**
SWaP			
Size (mm) (WxLxH)	1U	2U	~4U
Weight	<1.5 kg	<2 kg	<2.5 kg
Estimated Average Power	15-25 W	15-30 W	15-35 W
Interface Options			
Power Interface	12-36 VDC		
Data Protocol	RS-422, Ethernet, or SpaceWire		
Connector Types	Micro D-Sub, D38999, RJ45, G125		
Mechanical Interface	Surface Mounted; Integrated Structure (saves about 0.5 kg)		
Optical Performance			

Lens	**FOV**	**Resolution**	**Visual Magnitude**	**Working Range (6U Target) (m)**
A	60	2.4 cm @ 100 m	<9	1-1000
B	27	2.4 cm @ 500 m	<11	5-2000
C	13	3.4 cm @ 1 km	<14	10-5000



Owl: Long-Range Independently-Tasked Optical Payload Systems

Owl is a gimbaled optical payload with various telescope aperture sizes. Owl is unique in that it has been designed specifically for long-range object detection with a highly sensitive telescope steered by a multi-axis gimbal decoupling spacecraft attitude from the imaging line of sight. This decoupling enables faster scan rates and better tracking while allowing other missions onboard the spacecraft to operate in parallel. The telescope also has near diffraction-limited performance with a focus adjustment for close-range imaging. Additionally, two wider field-of-view context cameras provide the ability to observe the close environment.

Owl Variant	**Owl-150**	**Owl-250**	**Owl-350**
SWaP			
Stowed Size (mm) (WxLxH)	600 x 600 x 500	700 x 700 x 650	730 x 750 x 700
Weight	<25 kg	<35 kg	<45 kg
Estimated Average Power	<100 W	<125 W	<150 W
Interface Options			
Power Interface	Unregulated bus voltage		
Data Interface	RS-422, Ethernet, or SpaceWire		
Control Interface	RS-422 or Ethernet		
Mechanical Interface	Minimum three hard mounting points		
Imaging System Performance			
Field of View (NFOV/WFOV)	1.7 deg / 13 deg	1.1 deg / 13 deg	0.5 deg / 13 deg
Aperture Sizes	150 mm	250 mm	350 mm
Visual Magnitude	<16	<17	<18