



SERAPHIM
SPACE INVESTMENT TRUST PLC

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QUARTERLY REPORT – Three months ended 31 March 2023

THREE MONTHS TO 31 MAR 2023

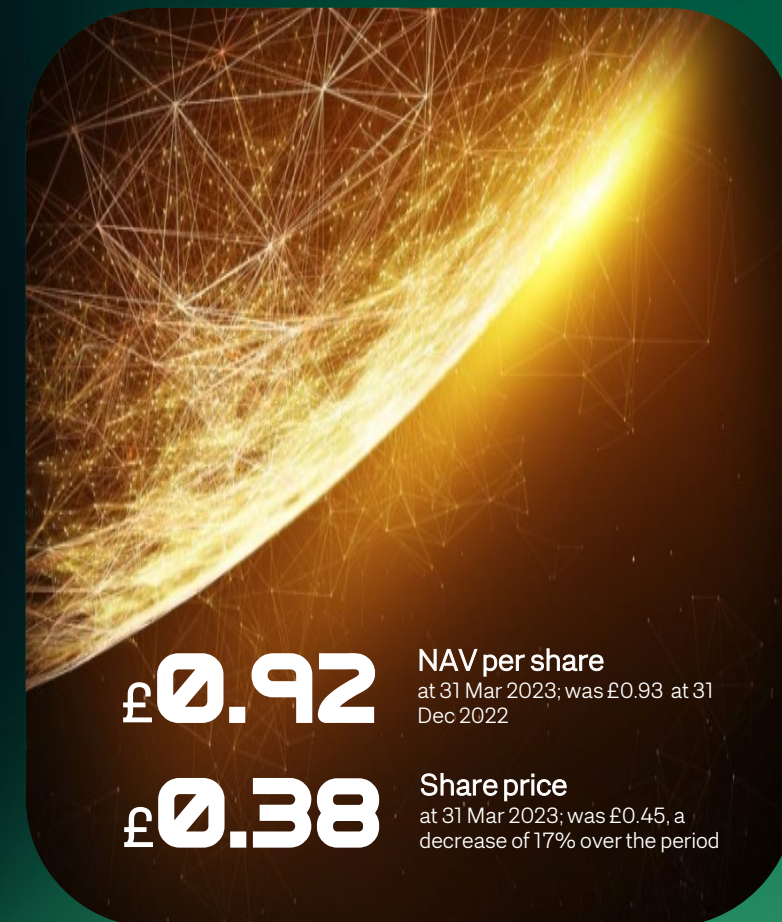
HEADLINES



Will Whitehorn

Chair
Seraphim Space
Investment Trust plc

- Portfolio valuation slightly decreased by £0.5m to £180.8m
- Driven by unrealised fair value reduction £1.3m partially offset by investments of £0.9m
- Portfolio fair value slightly down at 96% of cost
- 1 follow-on transaction totalling £0.9m
- Net assets of £220m and market capitalisation of £90m as at 31 Mar 2023
- Period end liquid resources of £39m (18% of NAV)
- 34% fair value weighted average revenue growth of top 10 companies in 6 months to 31 March



SERAPHIM PLAYBOOK

HEADLINES



Mark Boggett

Chief Executive
Officer



James Bruegger

Chief Investment
Officer

Proprietary
Deal flow



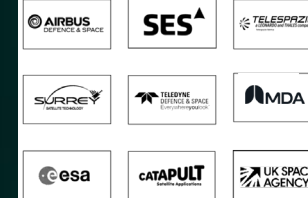
Unique
Model

Investment Fund



Accelerator Programme

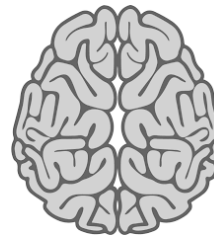
Industry
Backing



Investment Committee
Top Entrepreneurs



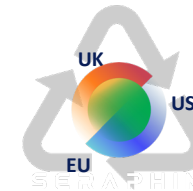
Information
Asymmetry



Thought
Leaders



Global VC Investor
Ecosystem



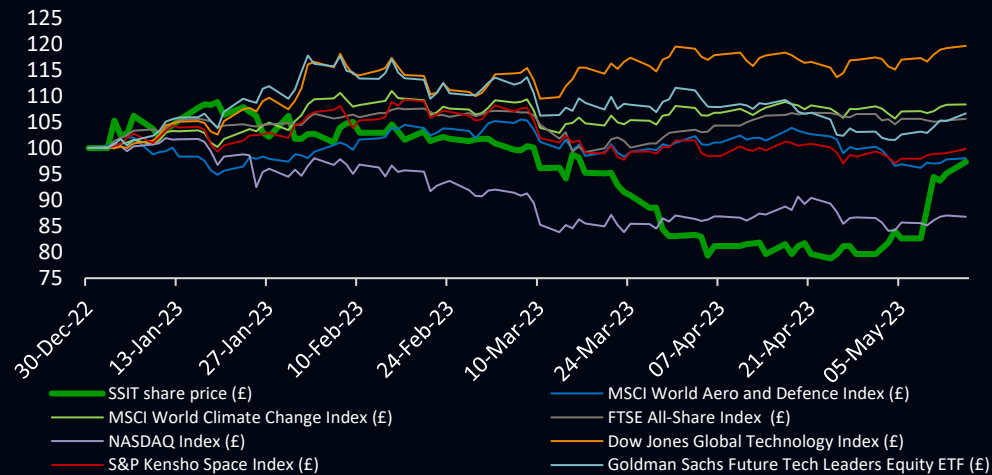
Value-add Investors
on Investee Boards



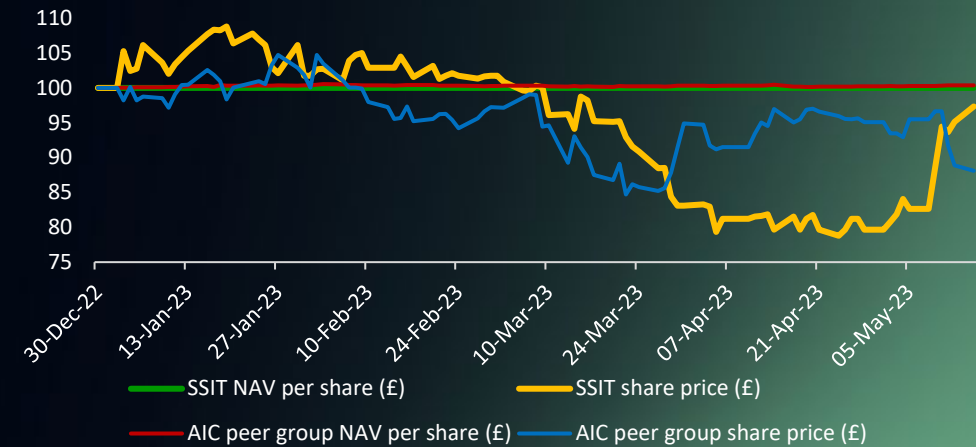
FINANCIAL HIGHLIGHTS AS AT 31 MAR 2023



SSIT share price vs. various indices from 1 Jan to 15 May 2023 (£, total return rebased to 100)



SSIT NAV per share and share price vs. AIC peer group¹ 1 Jan to 15 May (£, total return rebased to 100)



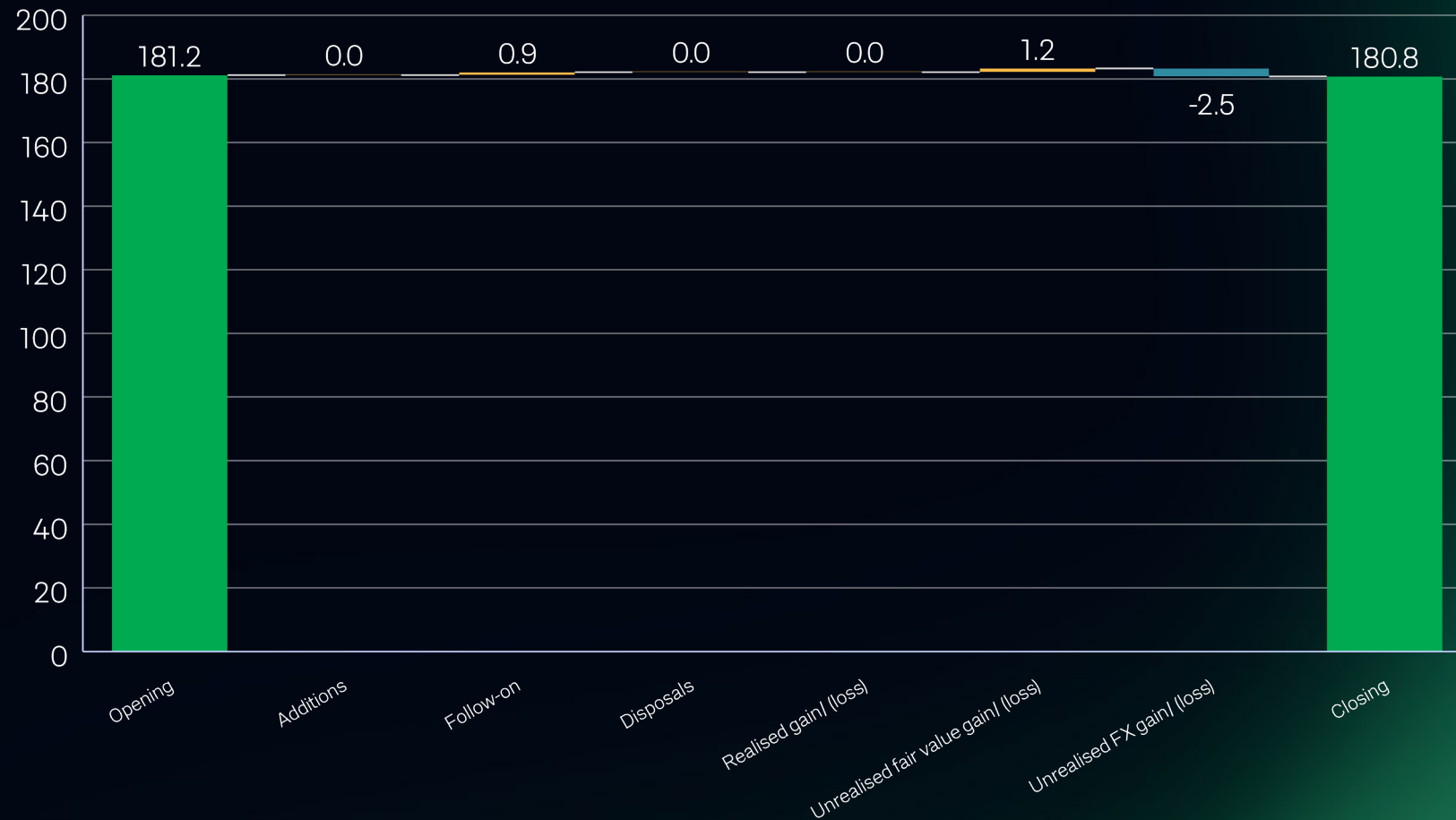
Source: Morningstar, Bloomberg
Note: ¹ AIC peer group is average of AIC Growth Capital peer group

Past performance is not a reliable indicator of future results. The value of shares and income from them can go up and down as a result of market and currency fluctuations.

3Q ATTRIBUTION ANALYSIS

3 MONTHS TO 31 MAR 2023

Attribution analysis of movements in the value of investments (£m)



96%

Portfolio fair value vs. cost

£181M

Fair value of portfolio as at
31 Mar 2023

£0.9M

Aggregate cost of investments during
period

BALANCE SHEET

AS AT 31 MAR 2023

£2.3M

decrease in NAV
(1% decrease)

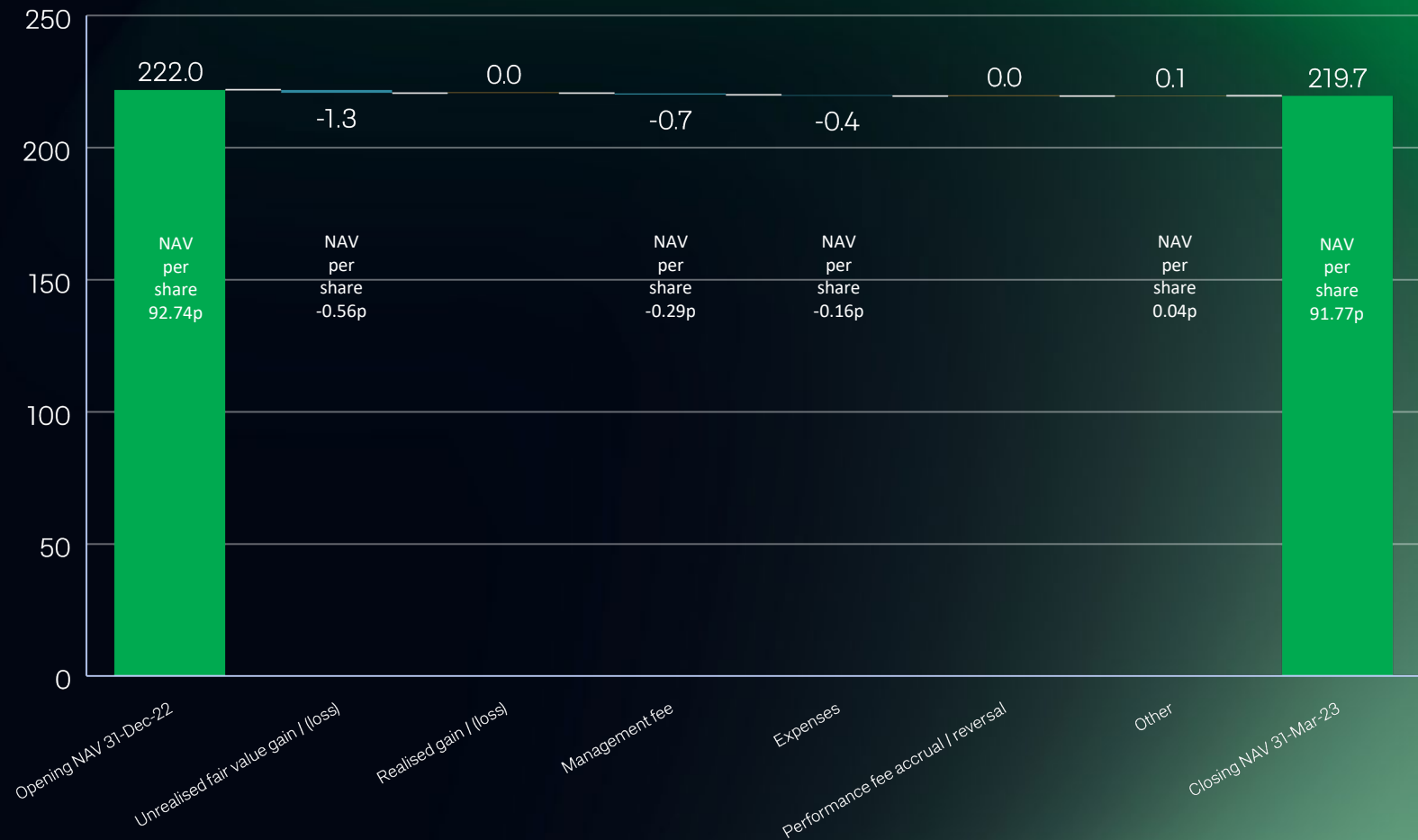
£39M

liquid resources
(18% of NAV)

£0M

equity issued

NAV bridge (£m)





3Q INVESTMENTS

Investments made during the period

Company	Segment	HQ	Type	Cost £m
QuadSAT	Downlink	Denmark	Follow-on	0.9
Total				0.9

1

Transactions completed

0

New investments

£0.9M

Cash deployed

FOLLOW-ON INVESTMENTS



QUADSAT

Traditional methods of testing satellite antennas involve complex equipment, setup, manual labour, significant time and can be prone to human error. QuadSAT provides satellite operators, antenna manufacturers and service providers a flexible and cost-efficient solution to test and validate the performance of antennas. Its drones, equipped with specialised instruments, collect data efficiently and accurately without the need for manual labour. QuadSAT is already gaining impressive traction among a selection of the world's largest space organisation like SES, Amazon, OneWeb, ESA and national defence agencies.

- In March 2023, Seraphim completed follow on investment of €1m (£0.9m) into QuadSAT as part of its Series A round.
- IQ Capital led the round with participation from Seraphim alongside Vækstfonden and TPC Management.
- QuadSAT continues to gain strong commercial traction:
 - The only mobile antenna testing company globally to be accredited by the SOMAP (Satellite Operators Minimum Antenna Performance, formed by industry leading satellite operators AsiaSat, Eutelsat, Inmarsat, Intelsat and SES) group for antenna testing.
 - This is a significant regulatory milestone towards QuadSAT being the de facto leader, improving antenna performance for the industry.
 - Manufacturers can perform more measurements, increasing validity to enable more reliable products and access to good data.
 - The Global RF testing equipment market is forecast to reach \$4.8bn by 2028.
- Notable customers:
 - Two of the big new space telecoms constellations, including OneWeb, with the potential to significantly scale.
 - Successfully completed its first system and services sale to the world's leading provider of satellite antennas and terminals.
 - Completed commercial missions with customers including the United Nations and Telespazio.
 - National defence agencies are also now showing substantial interest.

KEY PORTFOLIO DEVELOPMENTS

ICEYE

Largest radar constellation operator. Partnership with BAE Systems' new multi-sensor constellation and signed contract to provide Ukraine government with persistent capability. Record level contract signed.

ALL.SPACE

Software defined converged satcoms antennae. Tracking for first customer sales in 3Q 23 with positive indicators of interest from key partners such as US DoD, UK MoD, SES and Airbus.

HawkEye³⁶⁰

Largest signals intelligence constellation operator. Satellite clusters 6 and 7 launched (now 21 satellites) resulting in major improvements in latency, signal quality, reliability and geolocation count.

DORBIT

Leading space logistics company. Successfully launched its seventh, eighth, ninth and tenth (space taxi) ION missions. Record level contracts signed.

SATELLITEVU

Developing infrared satellites constellation to evaluate building. Expanded early access partnership agreements to 50 customers, with purchase options of £100m+.

Astroscale

Major change in debris management regulation announced. Astroscale successfully raised \$76m Series E from new investors including Mitsubishi and Development Bank of Japan.

ALTITUDE
ANGEL

Airtraffic control platform for drones. 256km drone super highway announcement made in UK. Partnership and investment from British Telecom announced.

LEOLABS

Global network of 10 ground radars to identify and track spacecraft and debris in orbit. Recently unveiled a site in Western Australia; Azores next and then new site in Argentina.

Planet
Watchers

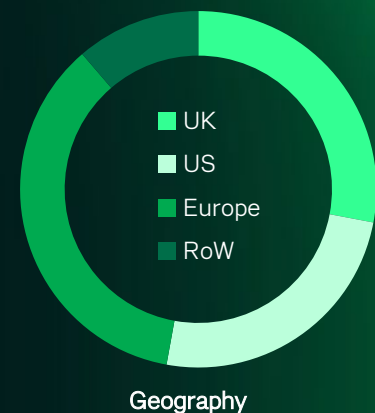
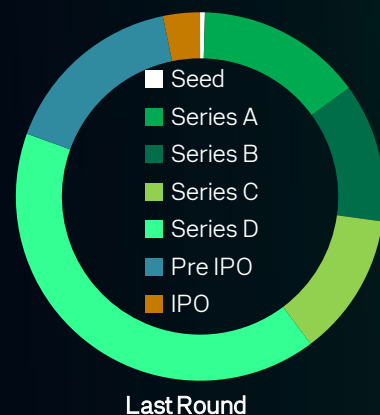
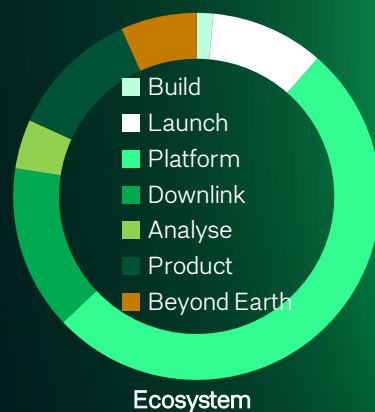
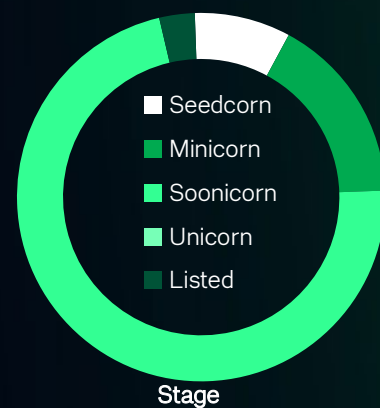
Satellite radar data for climate-impacted farmers. Successfully expanded into Canadian crop insurance market with first customer onboarded.

xona
space systems

Developing private GPS constellation for secure and accurate navigation. Launched first satellite and successfully validated core technology capabilities with its first signal transmissions from space .

PORTFOLIO AS AT 31 MAR 2023

Summary by value



NET ASSET VALUE

Company	FV£m	NAV
ICEYE	42.5	19.4%
ALL.SPACE	21.8	9.9%
HawkEye 360	20.2	9.2%
D-Orbit	18.1	8.2%
Satellite Vu	11.9	5.4%
Astroscale	10.1	4.6%
Altitude Angel	9.9	4.5%
LeoLabs	9.1	4.2%
PlanetWatchers	5.9	2.7%
Xona Space Systems	5.0	2.3%
Sub Total Top 10	154.4	70.3%
Other Investments	26.3	12.0%
Total Investments	180.8	82.3%
Cash	39.1	17.7%
Performance Fee Provision	-	-
Net Current Assets / (Liabilities)	-0.2	-0.1%
Net Asset Value	219.7	100.0%

RECALIBRATION OVERVIEW

Company	Last priced funding event	Last funding round	Last EV recalibration
ICEYE	Jan-22	Jan-22	Mar-23
ALL.SPACE	Sep-21	Sep-21	Mar-23
HawkEye 360	Nov-21	Nov-21	Mar-23
D-Orbit	Dec-21	Dec-22	Mar-23
Satellite Vu	Apr-23	Apr-23	Mar-23
Astroscale	Feb-23	Feb-23	Mar-23
Altitude Angel	Jul-21	Jan-23	Mar-23
LeoLabs	Jul-21	Jul-21	Mar-23
PlanetWatchers	Aug-22	Aug-22	Dec-22
Xona Space Systems	Oct-21	May-22	Mar-23

FIRST QUARTER 2023 REVIEW

- The first quarter in 2023 saw a bounce from lows in Q4 22, with private investment increasing by over 60% to \$1.4bn.
- European transactions were up by nearly 50% in the year to 31 March 2023, a record breaking 42 transactions in the quarter, whilst European investment of \$567m in Q1 was over half the total European investment for the whole of 2022.
- Q1 saw a strong pick up in growth staged investment activity globally with a record number of B, C and D+ rounds financed. Growth staged investment in Q1 of \$971m rebounded against the lows of Q3 and Q4 2022.
- Early stage transactions were also strong, closing 96 investment rounds and marginally beating the record transaction numbers achieved in Q4. Albeit, in value terms, Q1's \$386m was shy of the \$400m achieved in each of the previous three quarters.
- Nevertheless, focus remained on runway extension at portfolio company level and cash preservation at fund level to optimise fund level risk-return profile.

OUTLOOK FOR REST OF 2023

- We see SSIT well equipped, with the vast majority of its portfolio companies currently maintaining >12 months of cash runway and it having a cash position of £39m



TOP 10 INVESTMENTS



Web:	iceye.com
HQ:	Finland
Taxonomy:	Platform / Earth Observation
Status:	Private; Soonicorn
Stake category:	6-10%
Fair value vs. cost:	107%
Valuation method:	Calibrated price of recent investment

ICEYE operates the world's first and largest constellation of miniaturised satellites that use radar to image the Earth both during the day and night, even through cloud. ICEYE's radar technology has the ability to monitor change in near real-time.

Total estimated long term addressable market: \$10bn+

Key sectors addressed: insurance, defence, climate

Recent key developments:

- Announced partnership with BAE Systems' new multi-sensor constellation
- Signed contract to provide Ukraine government with persistent capability
- Existing satellites continue to perform well; latest generation of satellites launched offer 36x more coverage than competitors
- Image acquisition and download tool chain now fully automated
- Strong FY22 performance
- Well capitalised business with c\$80m cash reserves, sufficient to operate business into 2024; preparing for potential IPO late 2024 / early 2025



Web:	all.space
HQ:	UK
Taxonomy:	Downlink / Ground Terminals
Status:	Private; Soonicorn
Stake category:	11-15%
Fair value vs. cost:	112%
Valuation method:	Calibrated price of future investment

ALL.SPACE is aiming to create a mesh network of satellite connectivity by developing an antenna capable of connecting to any satellite in any constellation in any orbit.

Total estimated long term addressable market: \$10bn+

Key sectors addressed: communications, defence, transport

Recent key developments:

- Tracking for first customer sales in 3Q 23
- Positive indicators of interest from key customers: US DoD, UK MoD, SES and Airbus
- Have curated a well qualified pipeline, primarily from core defence market
- Technically de-risked key capability through multi-link demonstration
- Strong demonstrators of market requirement with Ukraine demonstrating the need for resilient satcoms, and satcoms operators' consolidation providing multi-orbit capability



Web:	he360.com
HQ:	US
Taxonomy:	Platform / Earth Observation
Status:	Private, Soonicorn
Stake category:	0-5%
Fair value vs. cost:	108%
Valuation method:	Calibrated price of recent investment

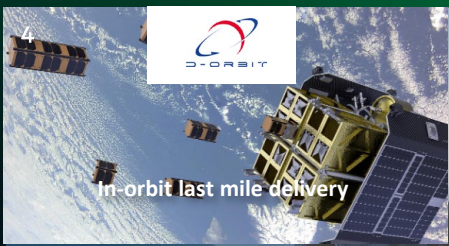
HawkEye 360 operates the world's largest satellite constellation collecting radio frequency signals to identify and geolocate previously invisible activities.

Total estimated long term addressable market: \$10bn+

Key sectors addressed: maritime, defence

Recent key developments:

- Clusters 6 and 7 launched, with cluster 6 operating successfully 2 weeks ahead of schedule
- Major improvements in latency, signal quality, reliability and geolocation count
- Decision not to move forward with acquisition of Rampart due to disappointing performance
- Strong performance in 1Q 23



Web:	dorbit.space
HQ:	Italy
Taxonomy:	Launch / In-orbit Services
Status:	Private, Soonicorn
Stake category:	6-10%
Fair value vs. cost:	154%
Valuation method:	Milestones, market comparables

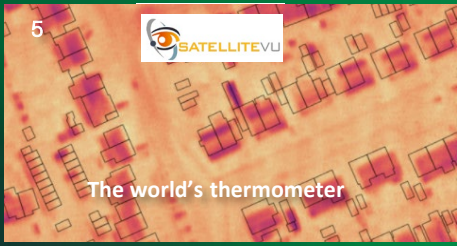
D-Orbit is the market leader in the space logistics and orbital transportation services industry. It currently operates the world's only in-space last mile delivery service.

Total estimated long term addressable market: \$1-5bn

Key sectors addressed: space logistics, datacentres

Recent key developments:

- Successfully demonstrated in-orbit cloud computing and storage with AWS in high profile mission
- Successfully launched its seventh, eighth, ninth and tenth ION missions, including first ION mid inclination launch
- Expecting strong growth in 2023
- 10th successful mission



Web:	satellitevu.com
HQ:	UK
Taxonomy:	Platform / Earth Observation
Status:	Private; Minicorn
Stake category:	16-25%
Fair value vs. cost:	255%
Valuation method:	Calibrated price of recent investment (post period)

Satellite Vu is aiming to monitor the temperature of any building on the planet in near real time to determine valuable insights into economic activity, energy efficiency and carbon footprint.


Total estimated long term addressable market: \$1-5bn

Key sectors addressed: energy, property

Recent key developments:

- Expanded early access partnership agreements to 50 customers, with purchase options of £100m+ (mixture of defence, intel and climate customers)
- Defence, intelligence and industrial monitoring use cases well defined
- New CCO actively building the cases for Climate and Built Environment
- First satellite remains on track for launch in May 2023

TOP 10 INVESTMENTS

Servicing the in-space economy

Web:	astroscale.com
HQ:	Japan
Taxonomy:	Beyond Earth / In-orbit Services
Status:	Private; Soonicorn
Stake category:	0-5%
Fair value vs. cost:	108%
Valuation method:	Calibrated price of recent investment



Astroscale is a global leader of space sustainability solutions. It is currently developing a set of capabilities around satellite monitoring, refuelling, upgrading, repairing and disposal to enable a vibrant in-orbit economy.

Total estimated long term addressable market: \$1-5bn

Key sectors addressed: space, defence

Recent key developments:

- Agreed cooperation with Mitsubishi Electric to jointly develop and manufacture sustainably designed satellite buses, which will be equipped with Astroscale's docking plates, for Japanese national security constellations
- Successfully raised \$76m Series E from new investors including Mitsubishi Electric, Mitsubishi Corporation, Development Bank of Japan, Yusaku Maezawa and Mitsubishi UFJ Bank
- Additionally entered into separate loan agreements with MUFG and Mizuho Bank for a combined ¥6bn
- Opens new HQ and production facilities in Tokyo, Japan, and new offices and facilities in Denver, US

The operating system for the skies

Web:	altitudeangel.com
HQ:	UK
Taxonomy:	Product / Data Platforms
Status:	Private; Minicorn
Stake category:	16-25%
Fair value vs. cost:	266%
Valuation method:	Milestone, market comparables



Altitude Angel operates a cloud-based automated air traffic control platform for drones and flying taxis. Its software powers the world's first sky corridor for drones.

Total estimated long term addressable market: \$10bn+

Key sectors addressed: logistics, aviation

Recent key developments:

- 256km drone super highway announcement made in UK (significant media interest); £4.4m grant funding awarded to deploy this super highway
- Arrow corridor proposed for Netherlands with testing of 30km in March 2023.
- Arrow being rolled out Phase 1 by July, with BT revenue share beginning in April 2023
- \$5m raised from BT via convertible loan note which gives cash runway through 2023
- Planning a Series B funding round later this year with BT as new strategic investor, and Corporate Finance partner Silverpeak appointed

Mapping the skies

Web:	leolabs.space
HQ:	US
Taxonomy:	Product / Data Platforms
Status:	Private; Soonicorn
Stake category:	0-5%
Fair value vs. cost:	78%
Valuation method:	Partial write down to price of recent investment



LeoLabs is providing the mapping service for space by deploying a network of ground-based antennas capable of detecting objects as small as 2cm as far as 1,000km away.

Total estimated long term addressable market: \$1-5bn

Key sectors addressed: space, insurance, defence

Recent key developments:

- Built and began operation of two additional space radars in the Azores and West Australia, with another site under construction, to significantly improve its coverage.
- Continued growth and interest from foreign government customers including renewed contract with Japanese MoD and pilot with UK MoD
- Won a sole source contract with the US DoC, validating that Leolabs is the only real viable alternative data source to the US Space Surveillance Network
- Continued success in growing commercial/ recurring revenue base, including several large satellite constellations.

Insuring the uninsurable

Web:	planetwatchers.com
HQ:	UK
Taxonomy:	Analyse / Data Analytics
Status:	Private; Seedcorn
Stake category:	25-49%
Fair value vs. cost:	105%
Valuation method:	Partial write down to price of recent investment



PlanetWatchers has developed an AI-enabled analytics platform using satellite radar imagery for crop monitoring, insurance and automated insurance claims assessments.

Total estimated long term addressable market: \$5-10bn

Key sectors addressed: agriculture, insurance, climate

Recent key developments:

- Successfully expanded into Canadian crop insurance market with first customer onboarded
- Ahead of the 2023 US growing season entered into contracts with multiple large US crop insurers

High precision, secure GPS for the next era of autonomy

Web:	xonaspace.com
HQ:	US
Taxonomy:	Platform / Navigation
Status:	Private; Minicorn
Stake category:	11-15%
Fair value vs. cost:	112%
Valuation method:	Calibrated price of recent investment

Developing a next-generation GPS constellation for more secure and precise position and timing.

Total estimated long term addressable market: \$5-10+bn

Key sectors addressed: transportation, defence, logistics

Recent key developments:

- Validated core technology capabilities with its first signal transmissions from space
- Completed and submitted production spectrum application
- Continued strong engagement with tier 1 chipset manufacturers as well as key end customers across target verticals

FURTHER INFORMATION

Company Information

Board of Directors

- [Will Whitehorn](#) (Non-executive Director / Chair)
- [Sue Inglis](#) (Non-executive Director / Senior Independent Director)
- [Christina McComb](#) (Non-executive Director / Management Engagement Committee Chair)
- [Angela Lane](#) (Non-executive Director / Audit Committee Chair)

Manager

Seraphim Space Manager LLP, One Fleet Place, London, EC4M 7WS

Brokers

- Deutsche Bank AG, Winchester House,, 1 Great Winchester Street, London, EC2N 2DB
- J.P. Morgan Securities plc, 25 Bank Street, Canary Wharf, London, E14 5JP

Contact Details

Registered Office - 5th Floor 20 Fenchurch Street, London, EC3M 3BY

Key Financials as at 31 Mar 2023

NAV per share	92p
Share price (as at 31 Mar 2023)	38p
Share price premium/ (discount) to NAV	-59%

Net assets	£220m	Calendar	
Market capitalisation	£90m	Full year results	Oct 23
Ticker code	SSIT	AGM	17 Nov 22
Management fees	1.25% NAV		
Gearing	None		

Environmental social and governance matters

Seraphim Space Manager LLP is a signatory to the United Nations backed Principles of Responsible Investment. The PRI is the world’s leading proponent of responsible investing <https://www.unpri.org/>

Website

<https://investors.seraphim.vc> is constantly being updated to ensure that you can always access Seraphim Space Investment Trust Plc latest data and information on your computer or mobile device in a transparent, convenient and intuitive manner.

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