



SERAPHIM
CAPITAL

Q2 2021

Seraphim SpaceTech Venture Capital Index

Welcome



The 2nd quarter of 2021 was another record breaking quarter of venture financing in the Space sector. For the first time, the quarter witnessed record deal activity in terms of both amounts invested and deals done.

Buoyant deal volumes supercharged the sector performance reaching \$11.9bn of private capital invested globally in the year to 30th June 2021. In particular, the 14 'mega deal' financing rounds of \$50m+ point towards the growing appetite for Space Tech investments from growth and cross over investors.

Although public market momentum curtailed during the quarter due to renewed SEC scrutiny of the wider SPAC market, the announcement of several new Space Tech SPAC transactions since the end of the quarter points to this being only a temporary hiatus.

As has been the case over the last year, much of the

sector's investment activity has been focused on space infrastructure, with nearly \$3bn of private capital being invested in the Data and Launch categories. The accelerating pace of change in the sector is reflected in the 573 satellites launched into orbit during the quarter.

Space Tech industrial revolution is now demonstrably in full swing as these new constellations of smallsats are starting to form a new digital infrastructure in the sky. The outlook for the 2nd half of 2021 looks promising with 2021 on track to be yet another record year for venture investment with the expecting easing of the SPAC logjam also likely to yield yet more landmark deals to take space companies public. expected to ease



Mark
Boggett
CEO



James
Bruegger
CIO



Josephine
Millward
Head of Research



Lewis
Jones
Associate

Highlights

\$11.9bn

invested in last 12 months

\$3.7bn

invested in Q2 (\$2.7bn in Q1 21)

105

deals closed in Q2 (68 Q1)

361

record level of Seraphim Index

\$1bn

biggest deal closed in Q2 (OneWeb)

\$44m

average deal size in Q2 21 (vs. \$45m Q1 21)

1

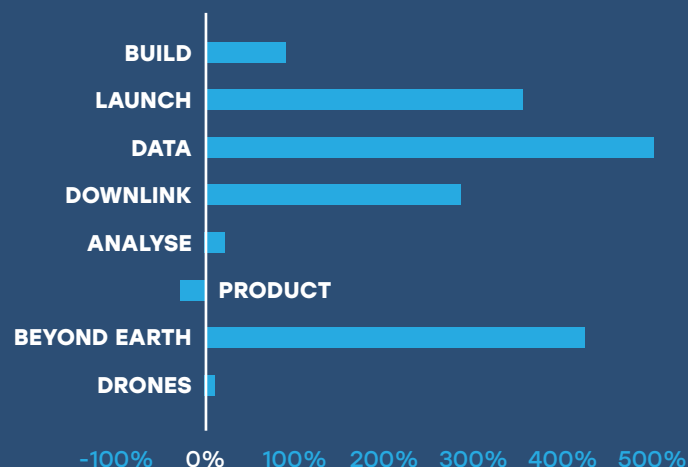
space-related SPAC mergers announced (vs 8 Q1)

\$400m

funding committed to these SPAC mergers

COVID-19 Impact:

Year to Q2 21 vs. Q2 20 (% Change)



Investment in the 12 months to Q2 21 was >200% higher than in the preceding 12 months providing some insight into the impact of COVID-19 on the global space domain.

The Launch, Data and Downlink categories saw growth between 300% - 500% whilst Beyond Earth increased by an astonishing 438%, albeit from a very low base of less than \$50m. With the exception of Analyse and Product categories the New Space economy achieved record levels of investment in spite of the global pandemic.

Q2 2021 Deals Activity (# Deals)



Q2 2021 saw a considerable increase in global deal volumes with a total of 104 deals closed versus 68 in Q1 2021. This is the highest number of deals recorded by our index to date.

Upstream (dark blue) once again accounted for nearly 2/3rds of all deals (66% vs. 65% in the previous quarter).

Early stage transactions (seed through to Series B) continued to dominate, accounting for 90% of all deals.

Once again, the quarter saw notable increases in deal activity in the Data category - relating to satellite constellations and drone-based platforms collecting and communicating data from above.

Q2 2021 Top Deals

Q2 21 continued in a similar vein to the prior quarter in terms of the number of 'mega rounds' of more than \$50m. Once again, smallsat launchers (Relativity, Firefly, Isar and Oriental Space) and drones (Zipline) all feature in the list of the quarter's largest deals. However, as with recent quarters, it is satellite constellations that

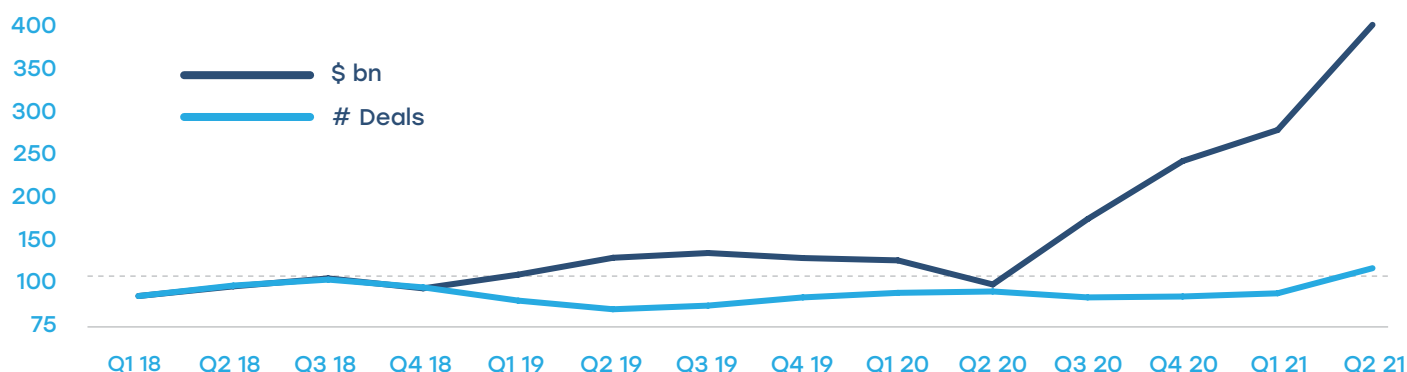
are the most notable beneficiaries of investor support. Between them, the twin 'mega constellations' of SpaceX and OneWeb closed a total of \$1.4billion to add to the \$1.3billion they closed in Q1 21. American companies continued to dominate the largest financing rounds, contrasted against few Chinese transactions of note.

COMPANY	COUNTRY	DATA LIFECYCLE	SUB CATEGORY	STAGE	AMOUNT
OneWeb	UK	Data	Satcoms	Growth	\$1050m
Relativity Space	US	Launch	Rockets	Series E	\$650m
SpaceX	US	Data	Satcoms	Series O	\$314m
Astranis	US	Data	Satcoms	Series D	\$250m
Zipline	US	Launch	Flight & Delivery	Series E	\$250m
Climavision	US	Analyse	Satellites - Earth Observation	Series A	\$100m
Firefly Aerospace	US	Launch	Rockets	Series A	\$75m
Isar Aerospace	Germany	Launch	Rockets	Series B	\$69m
LeoLabs	US	Product	Data Platforms	Series B	\$65m
Oriental Space	China	Launch	Rockets	Series A	\$62m

Overall Investment Activity



Seraphim Trailing 12 Months Investment Activity Index (Q1 2018 = 100)



The Seraphim Space Index is a barometer of investment activity, showing the global volume and value of venture capital deals within the Space sector on a 12 month trailing basis, indexed against Q1 2018.

Q2 2021 accelerated the growth trajectory of the last three quarters, with the deal value index increasing another 97 points to hit a new record high of 361 points (up 37% on previous quarter).

Deal volume since 2018 has remained broadly flat, albeit saw a noticeable uptick in Q2 21 thanks to a record 100+ deals being announced. The growth in the deal value index continues to be in large part driven by a fairly small number of large financing rounds for growth stage companies.

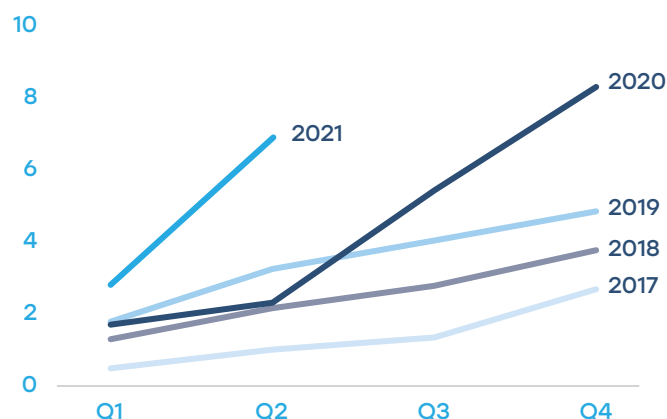
Given the global focus on the space domain in Q3 with the world witnessing both Virgin Galactic and Blue Origin heralding the era of space tourism we expect continued strong growth in the index over forthcoming quarters.

Seraphim Quarterly Investment Tracker (\$bn Invested)



Global private investment in Q2 2021 was at a record \$3.7bn, some 41% ahead of the previous quarter. Investment levels over the trailing 12 months, approached the \$12bn threshold for the first time. We expect this cadence to be maintained going forwards as the COVID-19 related downturn from H1 2020 now firmly in the rear view mirror.

Seraphim Annual Investment Tracker (\$bn Invested)

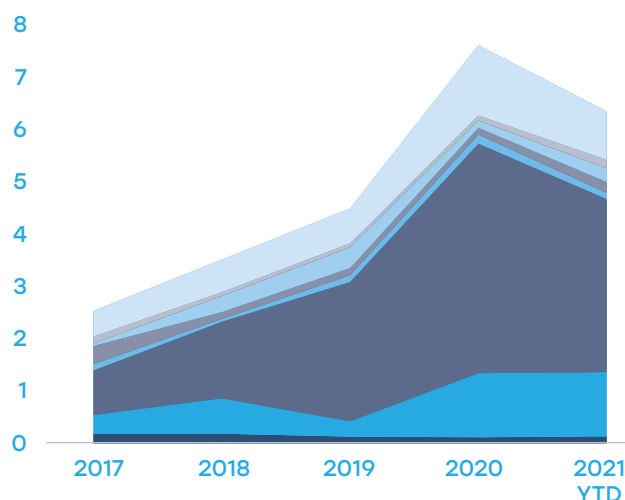


2021 is already proving to be another record year of private investment in the global space tech domain with \$6.4bn already closed in 1H vs. \$7.6bn in the whole of 2020.

Seraphim Data Lifecycle

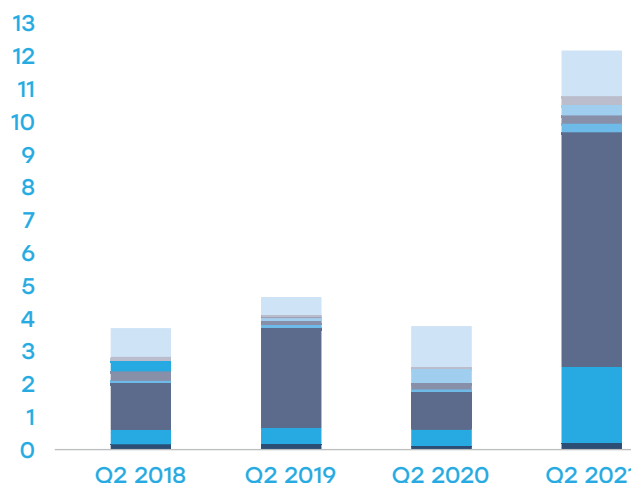


Annual Investment (\$bn)



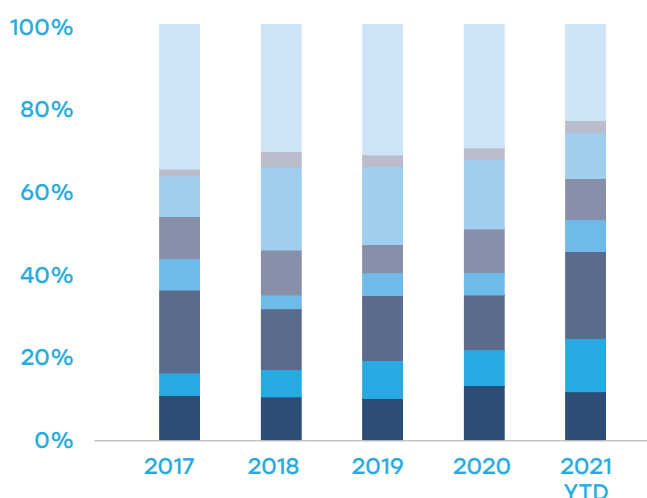
The Data category (which includes satellite constellations) continued to dominate investment activity, accounting for over half the total investment and showing record growth in the year to Q2 21. Launch category likewise continues to keep pace albeit now marginally falling behind the Drone category.

Last 12 Months Investment (\$bn)



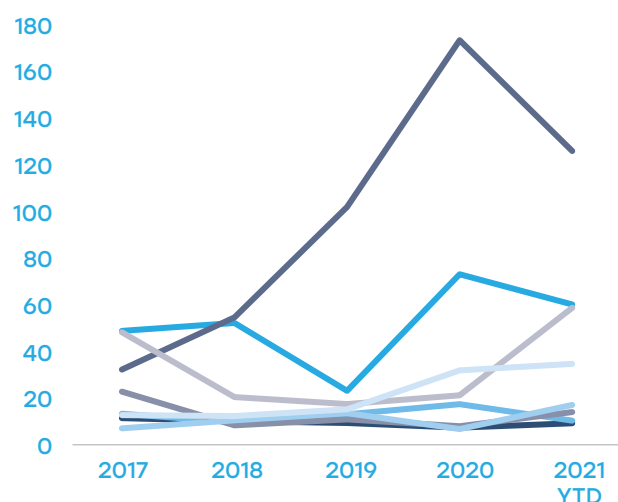
The Data category accounted for two thirds of total deal value in the year to Q2 21, growing by over 600% on the previous year. Elsewhere, the Launch category likewise saw over 400% y-o-y, with a similar increase in the Downlink category. The only the category to witness a decline in the year to date was Product.

Number of Deals



Whilst the mix of the deals closed in Q2 2021 remained broadly consistent with that seen over the course of the preceding years, the volume in the year to date is record breaking. In the 1H of 2021 some 172 transactions closed compared to 221 for the whole of 2020. It looks like the current year could eclipse the 241 record in 2018.

Average Deal Size (\$m)

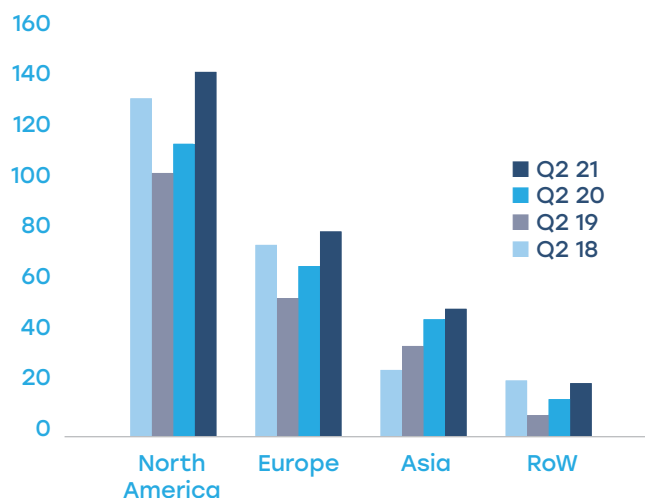


Average deal sizes in the most capital-intensive categories – namely Launch and Data – showed some declines from the 2020 averages. The Beyond Earth category witnessed a notable increase in average deal which was skewed by a single large transaction in Q1 21.

Geographic Analysis

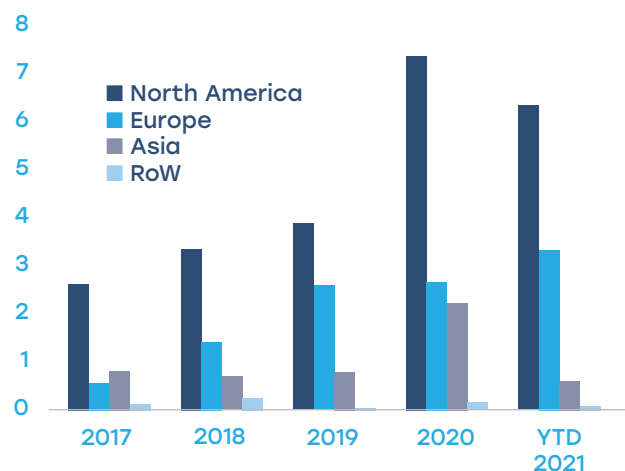


No. Deals Last 12 Months Investment



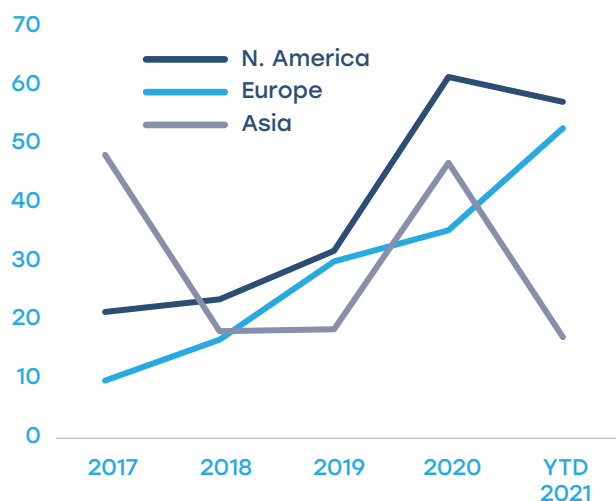
With overall deal volumes have seen consistent growth over the last three years now 15% above 2018 historic highs. Deal numbers have been remarkably consistent in North America and Europe in recent years, with only Asia exhibiting consistent modest growth.

Investment By Region (\$)



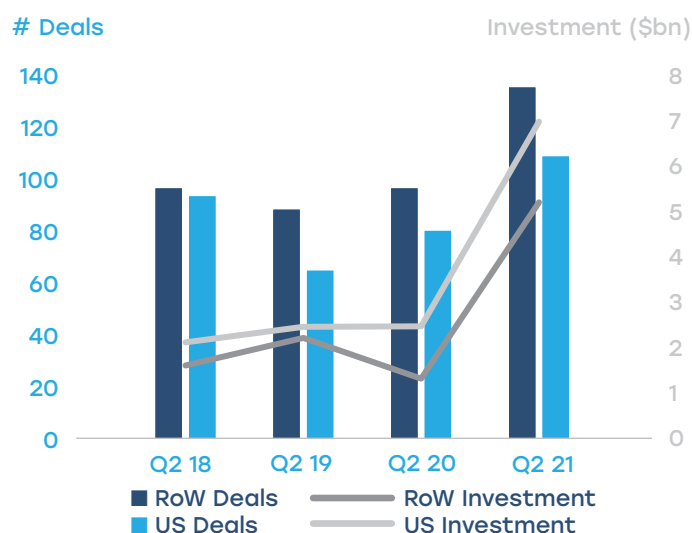
North America's domination of the space domain in terms of amounts invested has continued in the first 6 months of 2021, accounting for 61% of total investment in Q2 21. Whereas Europe has already surpassed 2020's total investment (primarily due to OneWeb), Asia has had a muted start to 2021 with few large financing rounds announced so far.

Average Deal Size By Region (\$m)



Europe continued to close the gap on North America in terms of average deal sizes, whilst the lack of large financing rounds in Asia has depressed average deal sizes. Despite the converging trends, North America consistently provides greater levels of equity funding per company than European counterparts.

US vs. RoW Investment Activity (LTM)

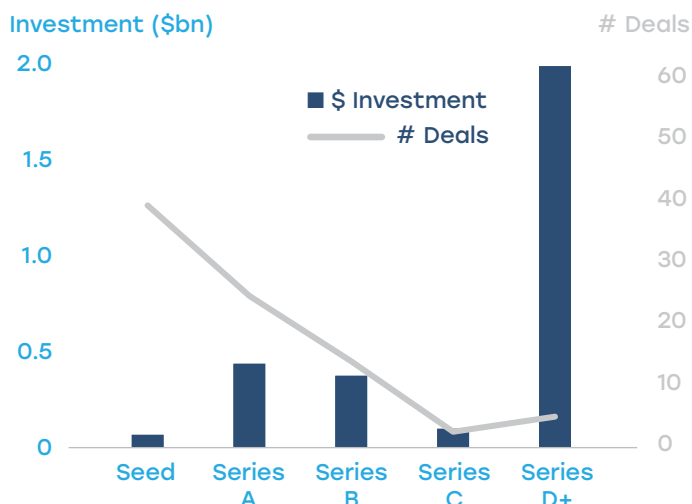


The chart demonstrates that the record volume and value figures in the year to 30th June 21 are a world wide phenomenon, its not just centred around North America. In tandem both ROW and North America have witnessed similar scale trends in both the volume of transactions and the total value.

Investment Stage



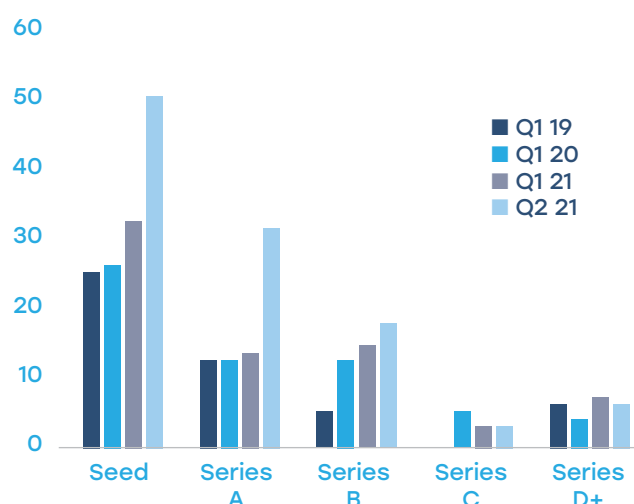
Deals in Q2 2021



The number of early stage deals in Q2 21 was materially higher than the previous quarter, with seed to B series up by 64% in volume and 43% in value.

Whereas early stage (seed to B round) deals accounted for 90% of all deals, later stage (C round and above) accounted for 70% of total amounts invested.

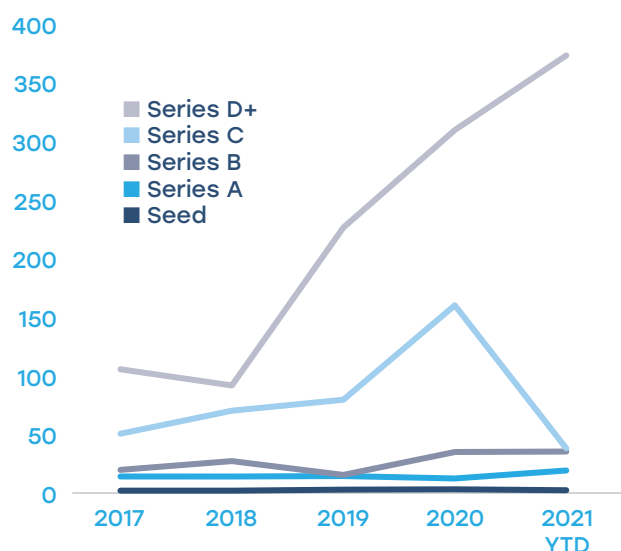
No. Deals YTD (Q2 21)



Deal volumes by stage reached new peaks in Q2 21 in all early stage rounds (seed to B Series) spiking after years of steady growth.

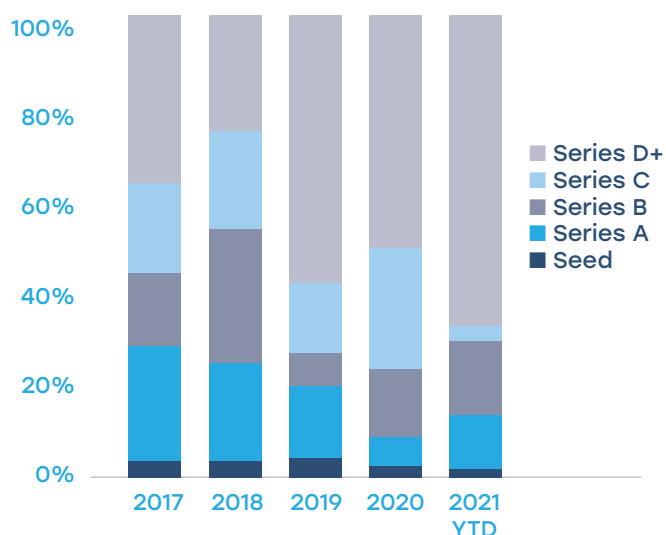
Volumes in the growth stage rounds are broadly consistent across the period.

Average Deal Size (\$m)



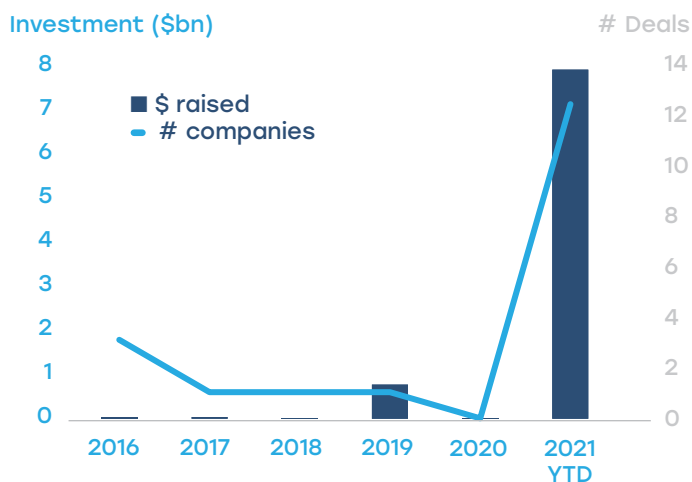
The impact of both SpaceX and OneWeb announcing major new fundings pushed the proportion of overall investment deployed into growth stage rounds to new highs (Series D+). The deal size in the Series C vary considerably, but other stages are remarkably consistent. B series averages have doubled over the 5 year period.

\$ Invested By Stage (\$bn)



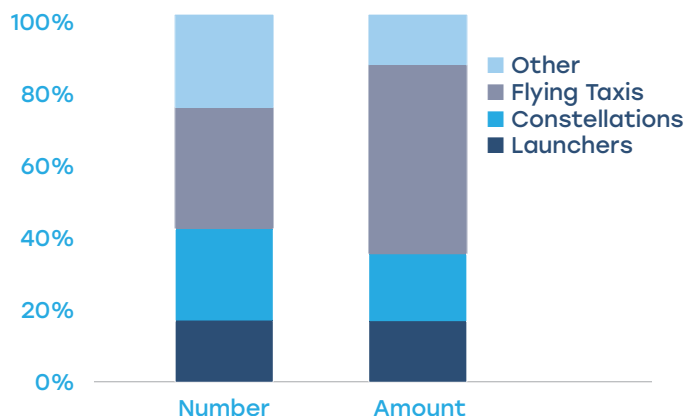
The Early stage rounds (seed to B series) accounted for 40-54% in 2017-2018 falling to 24%-29% in recent years as growth investors flock to support the maturing stock of companies in the domain.

Public Market SpaceTech Deals



2021 has already seen a marked shift in public market investors' appetite for SpaceTech companies. Prior to 2021, 6 New Space companies had gone public, raising a combined \$0.8bn. Only one of these companies – Virgin Galactic - went public via a SPAC merger. Already in 2021, 12 Space-related businesses have announced SPAC mergers, representing more than \$7bn of investment.

Investment By Region (\$)



Of the 12 announced Space-related SPACs that are expected to close within the next c.1 quarter, Flying Taxis – which will rely on Space-based connectivity and navigation to operate autonomously – represent the biggest category both in terms of number (4) and investment (\$3.9bn). We anticipate satellite constellation and launcher companies will continue to attract interest from the SPAC market.

2021 Announced Space SPAC Deals

The SPAC surge of 2020 continued in the first few months of 2021 but then came to an abrupt halt in April with the rate of new SPAC issuances fell by some 90% after the SEC announced that it was considering new guidance on the accounting treatment SPAC warrants. To date, only a few of the announced Space Tech

SPAC transactions have completed. Within Q2, ArQit was the only company to announce their SPAC transaction. However post the Q2 period, several other SPACs were announced including Planet and Satellogic which will be included in next quarter's report. We expect several more previously announced SPAC mergers to complete during Q3 as the SEC logjam starts to ease.

ANNOUNCED	COMPANY	REGION	SPAC SPONSOR/ EXCHANGE	DATA LIFECYCLE / SUB CATEGORY	AMOUNT	PRO FORMA EV	ESTIMATED CLOSE DATE
Oct 20	Momentus	US	\$SRAC / Nasdaq	Launch / Space Tugs	\$348m	\$1.2bn	Q3 21
Dec 20	AST&Science	US	\$NPA / Nasdaq	Data / Satcoms	\$460m	\$1.4bn	Listed
Dec 20	Blade Urban Air Mobility	US	\$EXPC / Nasdaq	Launch / Flight & Delivery	\$400m	\$4.6bn	Listed
Feb 21	Astra	US	\$HOL / Nasdaq	Launch / Rockets	\$500m	\$2.1bn	Listed
Feb 21	Spire	US	\$NSH / NYSE	Data / Earth Observation	\$475m	\$1.2bn	Q2 21
Feb 21	Archer Aviation	US	\$ACIC / NYSE	Launch / Flight & Delivery	\$1.1bn	\$3.8bn	Q2 21
Feb 21	Joby Aviation	US	\$RTP / NYSE	Launch / Flight & Delivery	\$1.6bn	\$4.6bn	Q2 21
Mar 21	BlackSky	US	\$SFTW / NYSE	Data / Earth Observation	\$450m	\$1.1bn	Q2 21
Mar 21	Rocket Lab	US	\$VACQ / Nasdaq	Launch / Rockets	\$750m	\$4.1bn	Q2 21
Mar 21	Redwire	US	\$GNPK / NYSE	Beyond Earth / Space Infrastructure	\$266m	\$0.62bn	Q3 21
Mar 21	Lilium	Europe	\$QELL / Nasdaq	Launch / Flight & Delivery	\$830m	\$2.4bn	Q3 21
Mar 21	ArQit	US	CENH/Nasdaq	Data/ Satcoms	\$400m	\$1.4bn	Q3 21

About Seraphim



VC Funds + Accelerator + Angel Platform + Research

Our Model: Inception to exit support powered by smart capital

Seraphim is the world's leading specialist investor in SpaceTech.

Powered by smart capital from leading Space companies and government agencies, we have a unique model combining investment funds, accelerators, and an angel investor platform.

We use our panoptic view of the SpaceTech ecosystem to provide inception to exit support to the sector's most ambitious and fearless entrepreneurs as they aspire to harness the infinite potential of Space to help push the boundaries of what is currently possible by turning science fiction into science fact.

Seraphim Space Investment Trust Plc is listed on the London Stock Exchange (Ticker: SSIT)

Our focus: Businesses collecting & communicating data from above

We are focused exclusively on the multi \$trillion SpaceTech investment market.

We believe SpaceTech is at the nexus of mega-trends that will define societal change over forthcoming decades and has a unique role to play in addressing the world's most pressing problems.

Radical advances in the Space sector mean a data and connectivity tsunami is about to transform the world as we know it, driving the next major paradigm shift in the global economy.

We invest in companies that are enabling, generating and exploiting data being collected and communicated from above.



Our Portfolio



Current Portfolio

We are the most prolific investor in SpaceTech globally. Across our different activities, we currently have a portfolio of more than 50 of the world's leading SpaceTech start-ups.

Fund



Accelerator



Seraphim News

[Seraphim Space Investment Trust Plc IPO on London Stock Exchange](#)

[ArQit to go public via SPAC Merger](#)

[D-Orbit celebrates third successful space taxi mission](#)

[LeoLabs closes \\$65m Series B round](#)

[PlanetWatchers closes Pre A Round](#)

[Constellation Investment in SatVu's \\$5m round](#)

[Seraphim invests into commodity price prediction company Ch.AI](#)

[Seraphim investment in ground based terminal company Isotropic Systems](#)

[Seraphim Space Camp Accelerator for cohort #7 concludes](#)

[Amazon announcement of cohort on their space accelerator operated by Seraphim](#)

[Ex Director General of ESA \(European Space Agency\) joins Seraphim Advisory Board](#)

Methodology / Further Research



Methodology & Taxonomy

We use a wide range of different data sources to compile our investment tracker. This includes proprietary, off-market information from our deal flow and network, deal databases such as Crunchbase, industry news sources such as SpaceNews and TechCrunch, and public announcements from companies themselves. We only include third party capital invested on an arm's length basis and therefore do not include personal investment that the likes of Jeff Bezos may make in their own space initiatives.



BUILD

- Building & selling satellites, drones, autonomous systems. Components, sub-systems, complete systems
- Hardware (sensors), software (i.e. control system), hybrid (i.e. machine vision)



LAUNCH

- Building & launching rockets
- Launch-related services
- Deliver (i.e. air taxis, drone delivery)



DATA

- Any data collection / space platform (i.e. smallsat, drone, HAPs)
- Multi-modal: look, listen, communicate



DOWNLINK

- Facilitate transmission of data from space / aerial platform back down to earth
- Satcoms & terrestrial comms networks
- Data storage, processing, security



ANALYZE

- Analysis of data from space / aerial platforms
- A.I / machine learning enabled analytics

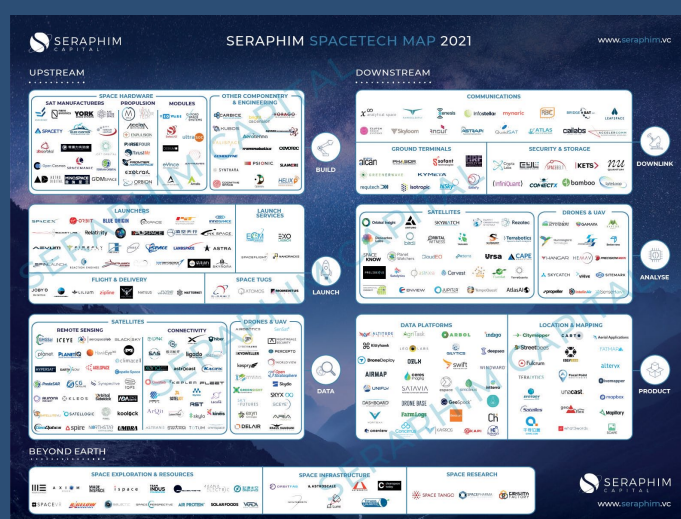


PRODUCT

- Packaging of different data streams (space & non space)
- Tailored to specific use cases in specific verticals
- Location, monitoring, insight, mapping

Further Research

We routinely publish our own research and insights on our website with a view to helping other investors share our excitement for the multi-decade transformational potential of Spacetechnology. Key periodic research we publish includes our widely recognised SpaceTech Ecosystem and Smallsat Constellation market maps.

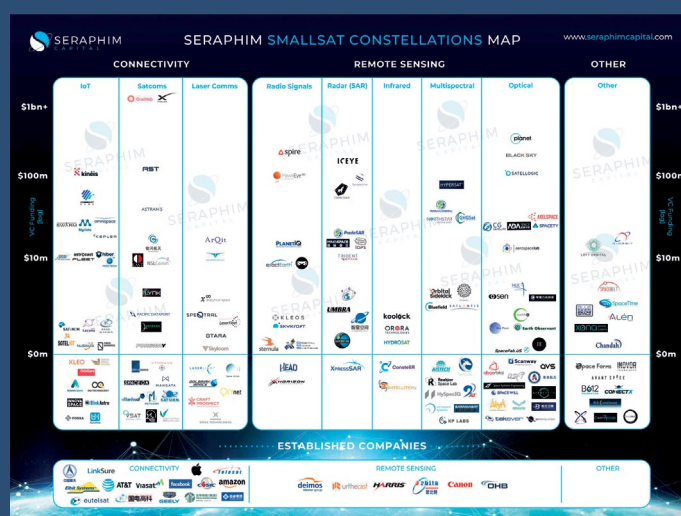


SPACE TECH MAP

Global VC backed emerging leaders per category



[DOWNLOAD](#)



SMALLSAT CONSTELLATION MAP

Global VC backed companies across categories



[DOWNLOAD](#)

www.seraphim.vc/research