



Leading integrator for
space and blockchain technologies

YEAR IN REVIEW 2021



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Letter from our co-founders

SpaceChain is not a conventional blockchain company, nor a traditional space company. We are both. We bridge the gap between both industries and empower companies for a New Space Economy by integrating blockchain with space technologies.

Since we started in late 2017, we have evolved and matured as a company. While we constantly innovate our suite of products and services to keep up with the latest industry trends, our mission remains the same — to make space more accessible to everyone, and allow a global community to explore and collaborate in space.



The last few years have been challenging as we struggled to establish ourselves in the space and blockchain industries. We launched payloads into space to test our products and services, and promoted the adoption of space-as-a-service among enterprises and communities worldwide.

Finally in 2021, our efforts came to fruition as commercial companies and non-profit organizations sought our space-related services to enhance security for their assets and champion social causes.

It was a great year for the team in 2021 as we had not one but two commercial launches in June for several customers. One of the missions also involved the integration of Ethereum technology with our hardware and was deployed to the International Space Station. This was a huge milestone for us as it demonstrated our capabilities to provide secure Ethereum multisignature transaction services in space.

“ We are entering the era of the commercial space age and we are very excited to be working closely with customers that share the same vision as we do.

Zee Zheng
SpaceChain
co-founder & CEO



In addition, we introduced our first programmable hardware board — Callisto — that enables people to develop blockchain applications in space. The Callisto has been configured to be similar to our on-orbit payload that was installed in the International Space Station (ISS) in December 2019.

While the application is not connected to the ISS, developers can still create their dream application, and run tests and simulations

through their computer to evaluate if their application will actually work in space. Best of all, it is open-source, enabling them to develop their blockchain applications more easily.

In line with our motto to lower the barriers of entry to space, we made the Callisto affordable and easily available for purchase with SPC tokens. Thus, allowing anyone with a great idea for a blockchain application in space to test and develop their app using the Callisto.

In December 2021, we also had a soft launch for our handheld satellite mobile device – Tethys. This hardware wallet lets users perform digital asset transactions for Bitcoin, Ethereum and stablecoin at anytime and anywhere via the satellite network.

For extra protection of your digital assets and transactions, the Tethys has been designed with financial-grade security hardware. The private key is generated and permanently stored in the device chip and cannot be exported. This prevents the private key from being stolen. Thus, all transactions are processed in the device securely.



“

The integration of technologies can help address security and vulnerability issues facing centralized land-based servers on Earth, and unfurl new and exciting opportunities for other commercial use cases.

Jeff Garzik, SpaceChain co-founder & CTO

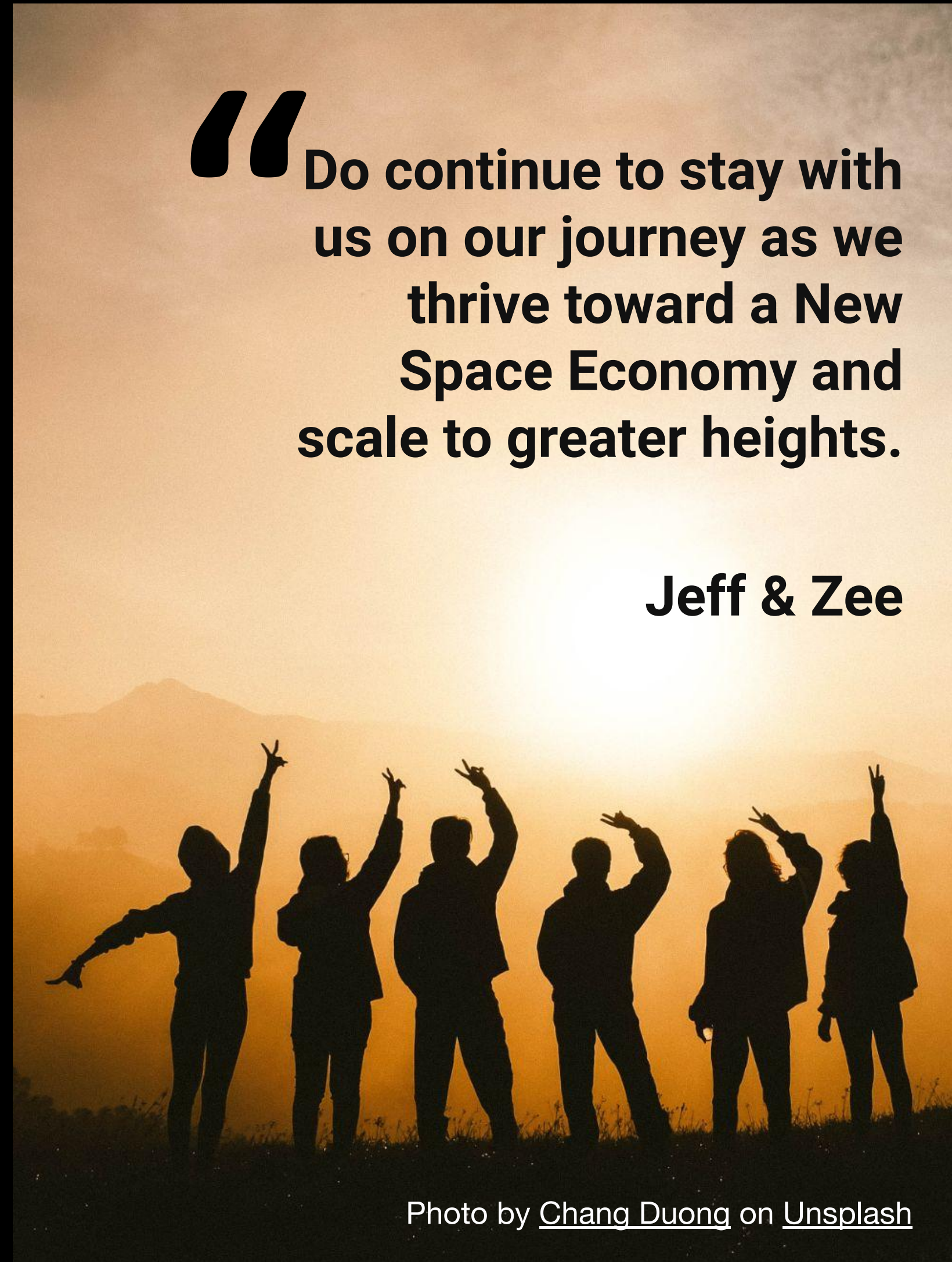
In 2022, we continue to be ambitious in our endeavour and support space and blockchain technology advancement with new products and services. We have even set up a blockchain space mission design and management studio to provide customizable blockchain-enabled payloads for customers while generating new commercial use cases across multiple sectors.

This year, we are also actively looking for payment partners, as well as satellite and blockchain ecosystem, and stable-coin issuer partners. If you would like to partner with us or know of any company that would like to work with us, email info@spacechain.com.

Most of all, we would like to thank our partners and community members for their unwavering support. They stood by us during the most challenging of times and cheered us on despite the pandemic. Their belief in the team has inspired us to achieve even greater things for SpaceChain.

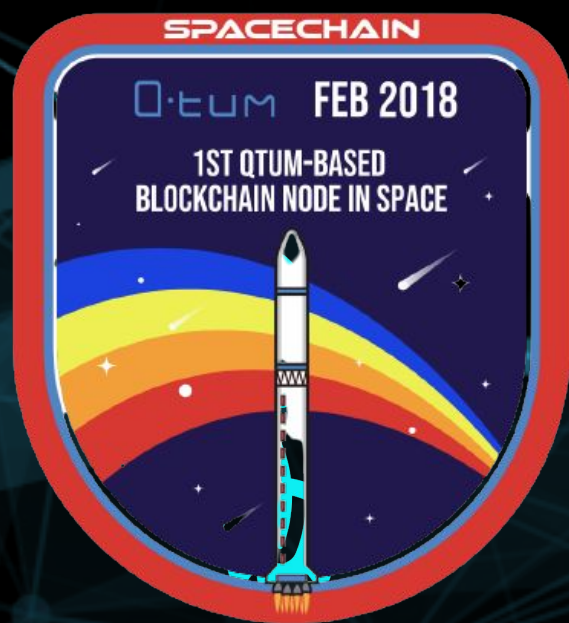
“Do continue to stay with us on our journey as we thrive toward a New Space Economy and scale to greater heights.

Jeff & Zee



Milestones

5 LAUNCHES



Feb 2, 2018

Launched a full-node program on the Qtum blockchain that can process existing blockchain data.



Oct 25, 2018

Embedded with SpaceChain OS and can perform blockchain related functions on Qtum blockchain like smart contracts.



Dec 5, 2019

Launched a testbed for Bitcoin multisignature authentication service to the ISS.



June 3, 2021

Launched into space the first commercial Ethereum blockchain integrated satellite payload to the ISS.



June 30, 2021

Launched a blockchain-enabled payload, incorporated with space nodes created for three customers.

Executive Team



Zee Zheng
CEO & CO-FOUNDER

- Serial entrepreneur
- M.A. Psychology – Columbia University, Draper University Alumni



Jeff Garzik
CTO & CO-FOUNDER

- Key Bitcoin core developer
- Key Linux kernel engineer
- Leader of Ethernet networking subsystem
- Designed and built Amazon cloud computing clone (Project Hail)
- Co-founder of Bloq

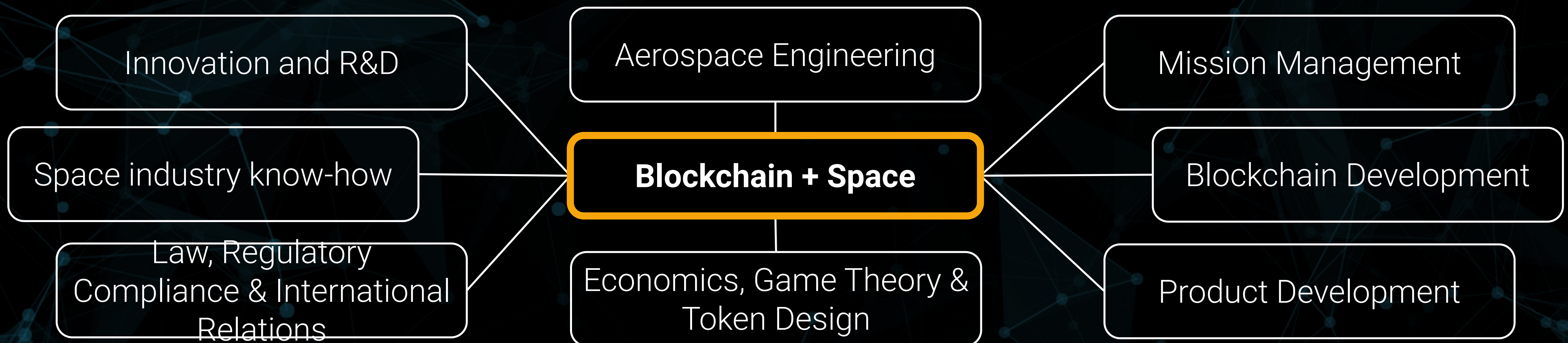


Nick Trudgen
CCO & UK DIRECTOR

- Research fellow at the CNSA China Institute of Space Law in Beijing
- Chief Investment Officer of the leading UK-China investment fund, China New Finance, based in Hong Kong

Team Specialties

The team of engineers is made of best in class, working from multiple locations globally, and skilled with the interdisciplinary subjects needed to create, maintain and grow a decentralized space infrastructure. These include aerospace, electronic, mechanical, telecommunication engineers and software developers specialising in blockchain development.



Advisors



Don Tapscott

Ranked the 2nd most influential management thinker in the world by Thinkers50.

Co-founder of the Blockchain Research Institute

Co-author of the book Blockchain Revolution: How the Technology Underlying Bitcoin is Changing Business, Money and the World.



Matthew Roszak

Chairman of Chamber of Digital Commerce
Managing partner at Tally Capital

Co-founder of Bloq



Tim Draper

Renowned VC capitalist from Silicon Valley

Co-founder of DFJ Venture Capital

Founded Draper University in Silicon Valley



Jeffrey Manber

Board member at International Space Station

CEO of Nanoracks

Initiator of QB50



Eric Anderson

Well-known aerospace engineer and entrepreneur

Pioneered the development of the space tourism industry

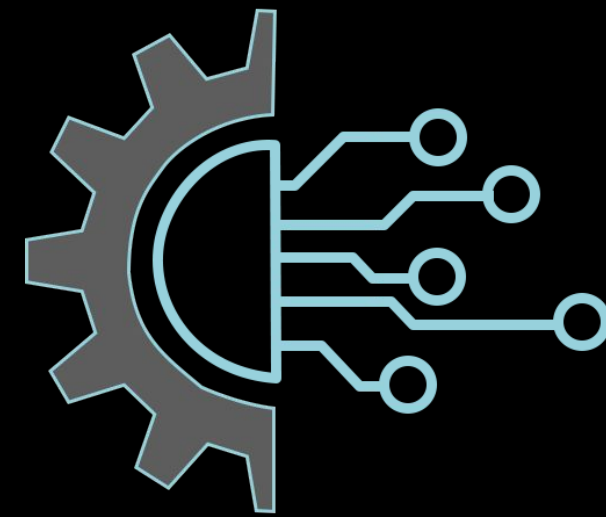
Co-founded several organizations including Space Angels Network, Planetary Resources and Space Adventures.

Highlights of 2021



APRIL

Released the Callisto
— our first
programmable
hardware board for
developing blockchain
applications that can
be deployed in space



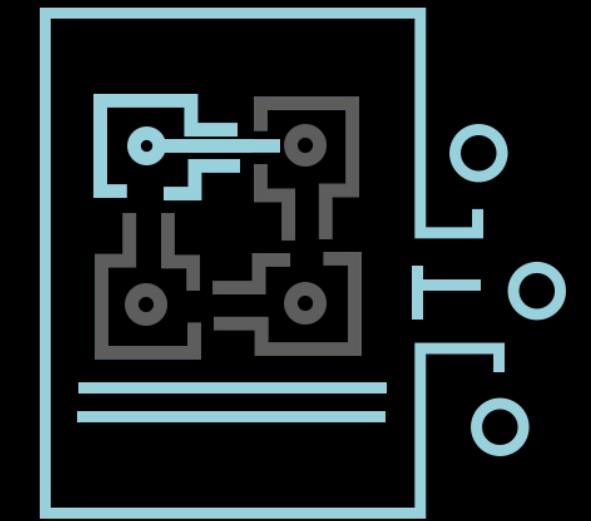
MAY

Signed an MoU with
Eurasian Space
Ventures to jointly
develop projects in
the field of space and
blockchain
technologies



JUNE

Performed two launch
missions in June with
customised payloads for
customers, including the
first commercial
Ethereum blockchain
integrated satellite
payload on the ISS.



SEPTEMBER

Partnered with Spire
Global to demonstrate
blockchain technology
computation
possibilities in space.

April 2021

SpaceChain introduced the Callisto — a programmable hardware board for developing blockchain applications that can be deployed in space.

- The SpaceChain Callisto development kit enables developer communities worldwide to participate in advancing next-generation decentralized infrastructures for blockchain and fintech applications using space technologies.
- It is pre-installed with and runs on Linux and SpaceChain Operating System (SPC OS), to help accelerate space technology development, and serves as the backbone for SpaceChain's payload launches and missions.





“SpaceChain’s open-source demo hardware board is proof of our efforts to bring our disruptive technology to the masses as we continue to discover more commercial use cases for blockchain-based satellite

networks in space. We are one step closer to making the SpaceChain OS available to anyone, anywhere in the world.”

Jeff Garzik, SpaceChain Chief Technology Officer

- It is also configured in a way similar to the 2019 on-orbit payload installed in the International Space Station.
- Developers can create game-changing applications that can potentially leverage blockchain-related functions, including running smart contracts and performing multisignature transactions, and running tests through their computers to determine whether the applications they created would work in space ultimately.



What is the SpaceChain Callisto?



Get more info about the Callisto at our [GitHub](#).



EURASIAN SPACE VENTURES

May 2021

SpaceChain and Eurasian Space Ventures signed a Memorandum of Understanding to jointly develop projects in the field of space and blockchain technologies.

- Eurasian Space Ventures (ESV) is a limited company registered in Kazakhstan which aims to serve as an international hub for space projects and related organizations looking to capitalize on the well-established space infrastructure and ecosystem in the country.
- Partnering with ESV will complement SpaceChain's continuous efforts in building out an open-source blockchain-based satellite network that is secure and immutable for fintech and decentralized applications.

- Both companies will exchange information and expertise, and cross pollinate ideas and develop joint projects in the field of space technologies over a period of two years.
- SpaceChain will explore collaborative opportunities with its partners in the global space industry in leveraging the existing space facilities and infrastructure in Kazakhstan.
- ESV will facilitate communication with the National Space Agency of the Republic of Kazakhstan, also known as Gharysh Sapary, on behalf of both companies.

“By combining and integrating expertise and knowhow in blockchain and space from both companies, we are very excited to have taken the historical step with SpaceChain in driving innovation and further development in the democratized space sector.”

Shukhrat Ibragimov, ESV Founder



June 2021

SpaceChain launched two blockchain-enabled payloads that were incorporated with space nodes of its customers. One of the nodes comprised the first Ethereum blockchain-enabled payload installed on the International Space Station (ISS).



3 JUNE 2021

- For this mission, the payload was launched into space aboard a SpaceX Falcon 9 rocket and subsequently installed at the ISS.
- This was SpaceChain's first demonstration of Ethereum technology integration into its hardware on the ISS, so as to empower customers with highly secure on-orbit Ethereum multisignature transaction services in space in future.

"We launched a payload for bitcoin in 2019, and in 2021 we launched our second-generation payload with Ethereum. Bitcoin and Ethereum represent the two biggest ecosystems in the blockchain industry. With



Ethereum's smart contract platform running in outer space, it enables us to fortify blockchain applications and transactions with enhanced security and immutability, and allows more users and developers to get involved with our technology."

Zee Zheng

SpaceChain Chief Executive Officer

Ethereum Blockchain in SPACE?



- The security and remoteness of space infrastructures ensures the independence of Ethereum contract operation from centralized terrestrial servers, hence providing more efficient smart contract operation and greater application scenarios.
- Digital asset management firm Nexus Inc. (Nexus) will be the first SpaceChain customer to have direct access to this service.
- In August 2021, the payload was successfully installed on the ISS by a crew member.
- Once tested and activated, the space node will enable SpaceChain customers to further enhance their blockchain capabilities for enterprise business and fintech applications.



30 JUNE 2021

- The mission, which was operated by Loft Orbital under the rideshare program, marked the dawn of space-based businesses and the burgeoning adoption of space-as-a-service among enterprises and communities worldwide.
- Launched into space onboard a SpaceX Falcon 9 rocket carrying a YAM-2 satellite, the payload was incorporated with space nodes customised for 3 customers — Biteeu, Divine, and Nexus Inc.
- The milestone is another step forward in advancing SpaceChain's decentralized satellite infrastructure for business and fintech applications.



Video Credit: CNET

- Crypto currency exchange Biteeu is leveraging the high security of space-grade infrastructure deployed by SpaceChain for ultra-secure Bitcoin transactions, fortifying Biteeu as one of the most secure crypto currency exchanges in the world that places user privacy and security first.
- Divine is a not-for-profit community project under the I AM PART OF global charity foundation. It utilizes space technologies to broadcast the teachings of the Quran to people all over the world.
- Digital asset management firm Nexus Inc. is integrating SpaceChain's Bitcoin hardware wallet with its existing system to enable ultra-secure multisignature transactions for customers.



“The establishment of Biteeu’s multisignature transaction in space encapsulates our continuous effort in upholding the highest levels of data protection for our users and raising the benchmark of security standards in the cryptocurrency market.”

Talgat Dossanov, Biteeu Co-founder and Chief Executive Officer

September 2021



Spire Global and SpaceChain collaborate to demonstrate blockchain technology computation possibilities in space and resolve land-based centralized infrastructure issues.

- Spire Global, Inc. is a leading global provider of space-based data, analytics, and space services, offering access to unique datasets and powerful insights about Earth from the ultimate vantage point so that organizations can make decisions with confidence, accuracy, and speed.
- Many in the blockchain industry have been working to reduce points of risk whereby a centralized administrator or authority can tamper with, or steal funds and data.
- One potential solution is to decentralize access by distributing data across multiple centers, countries, and continents.



“We’re delighted to work alongside SpaceChain and demonstrate innovative ways to leverage outer space.

Space-based computation is already proving its value across countless industries and use cases, and we’re excited to help realize its potential for emerging and decentralized blockchains.”

Theresa Condor
Spire Chief Operating Officer

- By deploying a solution in space, Spire and SpaceChain aim to maximize data security and increase the resiliency of computing operations.
- SpaceChain’s integration of blockchain and space technologies helps create a Decentralized Satellite Infrastructure (DSI) on which Decentralized Satellite Applications (DSA) can be built and run without the need for any land-based infrastructure.
- Spire will utilize its “SABERTOOTH” supercomputing module, the company’s fastest and most power-efficient embedded AI computing device, to fulfil a two-part mission with SpaceChain.

MEDIA

We're proud to say that we've been featured in several news media and events in 2021. Here are the highlights. Click to read more.

 cheddar news coindesk COINTELEGRAPH
The future of money forkast news IRISH TECH NEWS SATELLITEPROME.COM SPACENEWS startup.info TECHINASIA THE EDGE
SINGAPORE Via Satellite



The Next Disruptor in Space

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