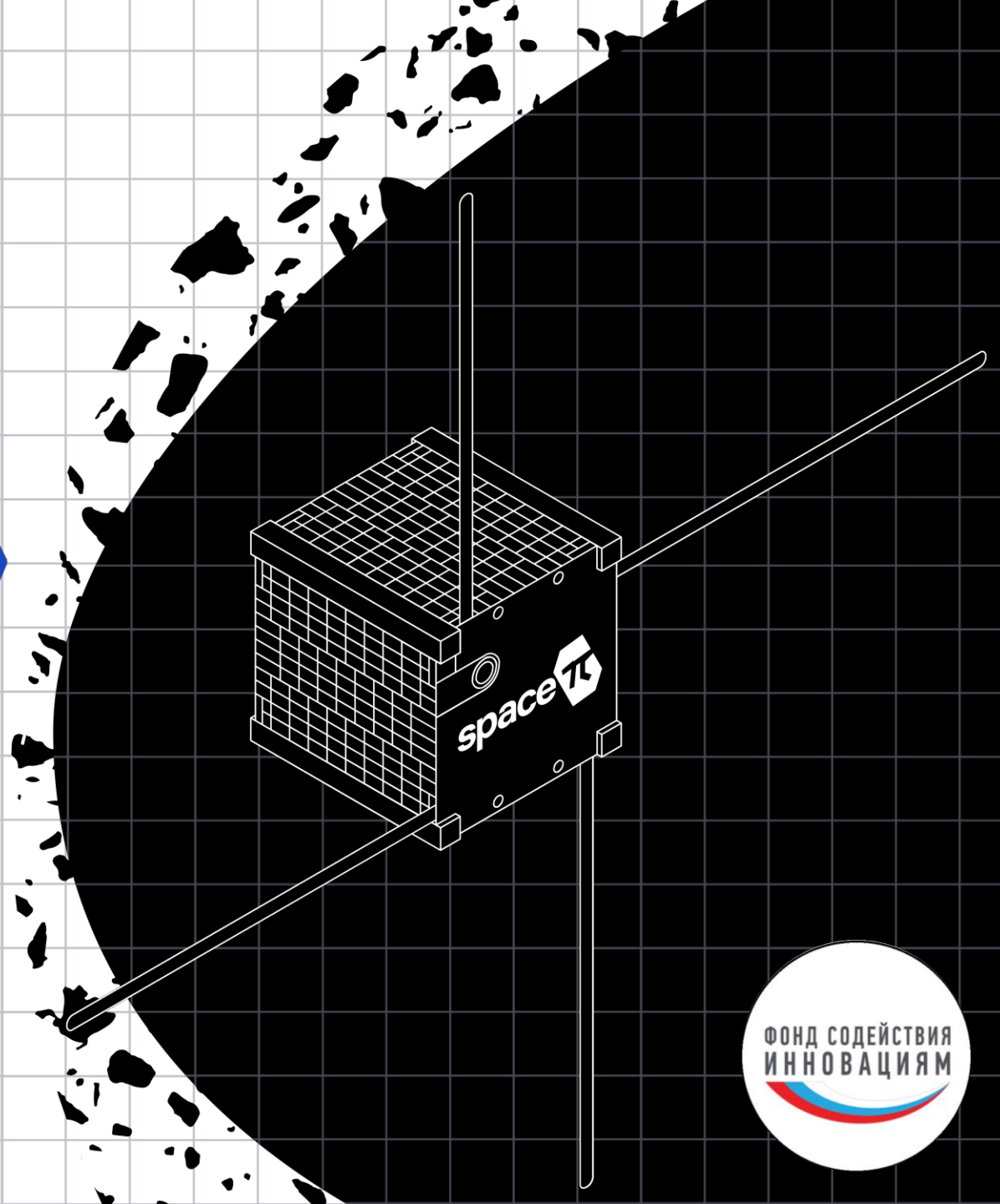
spaceπ

scientific and educational project aiming to develop and form constellation of the CubeSats in orbit



ФОНД СОДЕЙСТВИЯ ИННОВАЦИЯМ

Scientific and educational project

space π

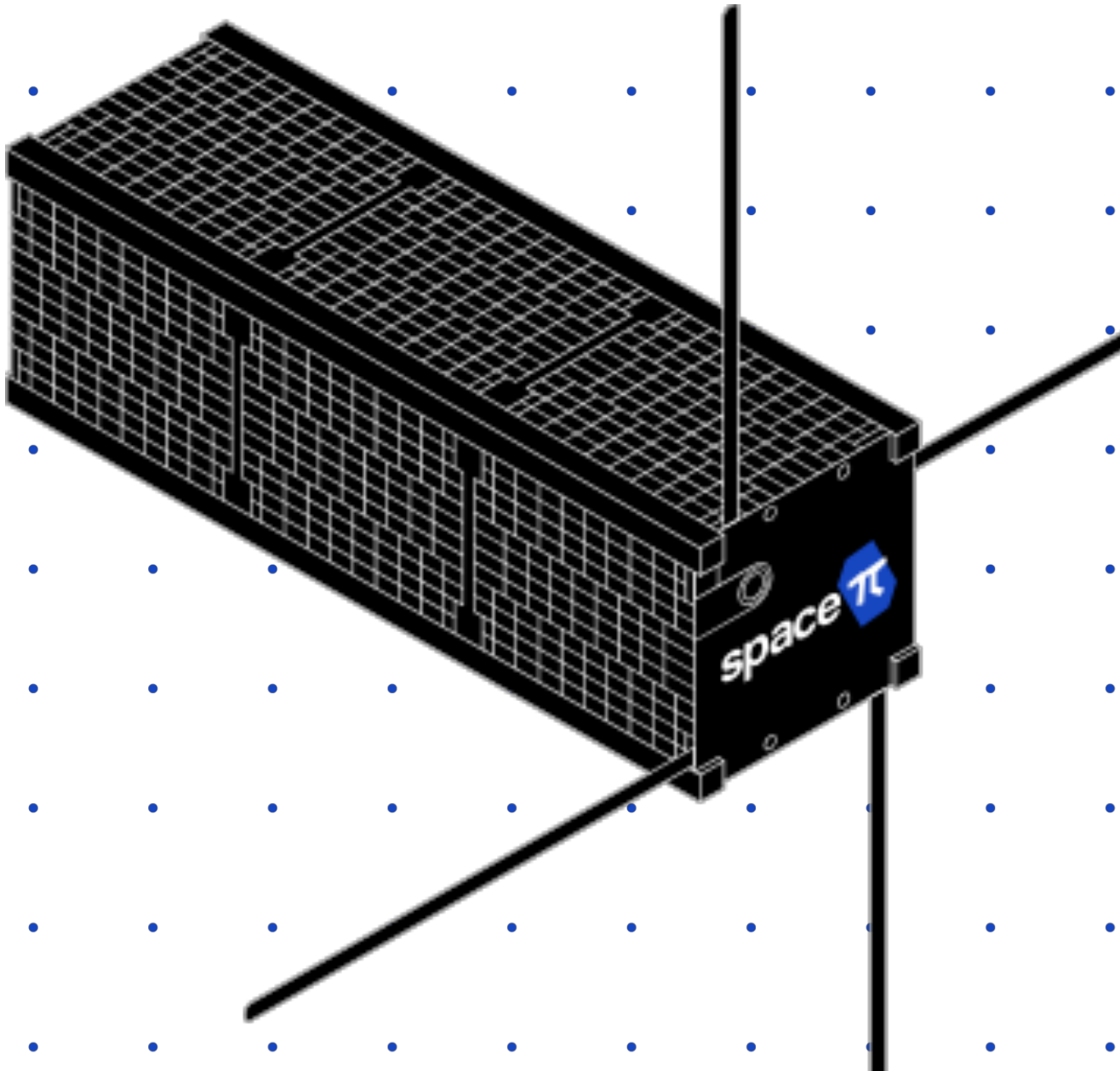
is a project of the "On Duty on the Planet" program, organized with the support of the Innovation Promotion Fund.

Space-π brings together scholars, students, universities and Russian private companies to provide the former with opportunity to learn how small spacecraft are designed, how payloads are created and how to launch a real space experiment.

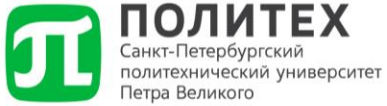
- receiving space data
- satellite construction
- programming
- engineering
- controlling smallsats in orbit

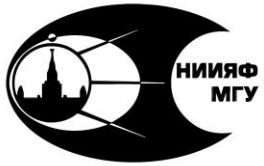
Our mission

To form a constellation of 100 CubeSats to involve scholars in space technologies.



ORGANISERS & PARTNERS





PARTNERS

ХЕВЕЛ
ГРУППА КОМПАНИЙ

КОМИТЕТ ПО ПРОМЫШЛЕННОЙ ПОЛИТИКЕ, ИННОВАЦИЯМ И ТОРГОВЛЕ САНКТ-ПЕТЕРБУРГА

ИНЖЕНЕРНАЯ КОМПАНИЯ
LORETT

ЮЗГУ

СИРИУС
ОБРАЗОВАТЕЛЬНЫЙ ЦЕНТР

Министерство экономики Республики Татарстан

ГРУППА АЛЬЯНС

КАЗАНСКИЙ ФЕДЕРАЛЬНЫЙ УНИВЕРСИТЕТ
1804

СКАНЭКС

30
НАУЧНЫЙ ПАРК МГУ

1755

ФЕДЕРАЦИЯ КОСМОНАВТИКИ РОССИИ
РОССИЯ

ИАН

100 000 +
scholars & students

100 +
schools & universities

20 +
companies

WHAT'S IN SPACE?

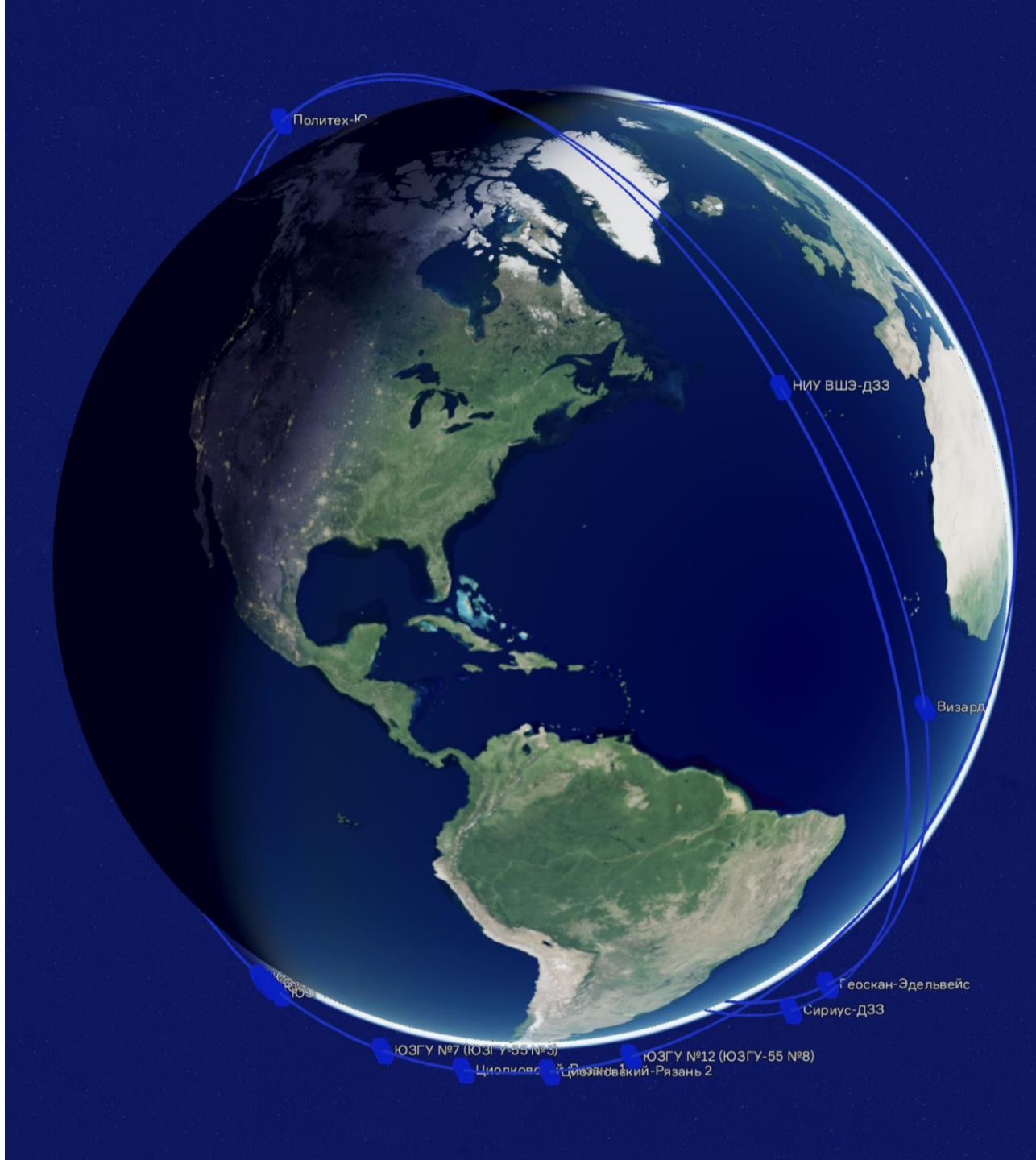
61
LAUNCHED SATS

32
SATS ON ORBIT

+4
READY TO LAUNCH

+6
PICOSATS

INFO about Space-π CubeSats



Why CubeSats?

Radio communication and radio telemetry system

The transceiver antenna

Orientation and stabilization system

Induction coils, flywheels

Thermal management system

Shielding coatings that prevent overheating of the equipment by solar energy

On-board control system

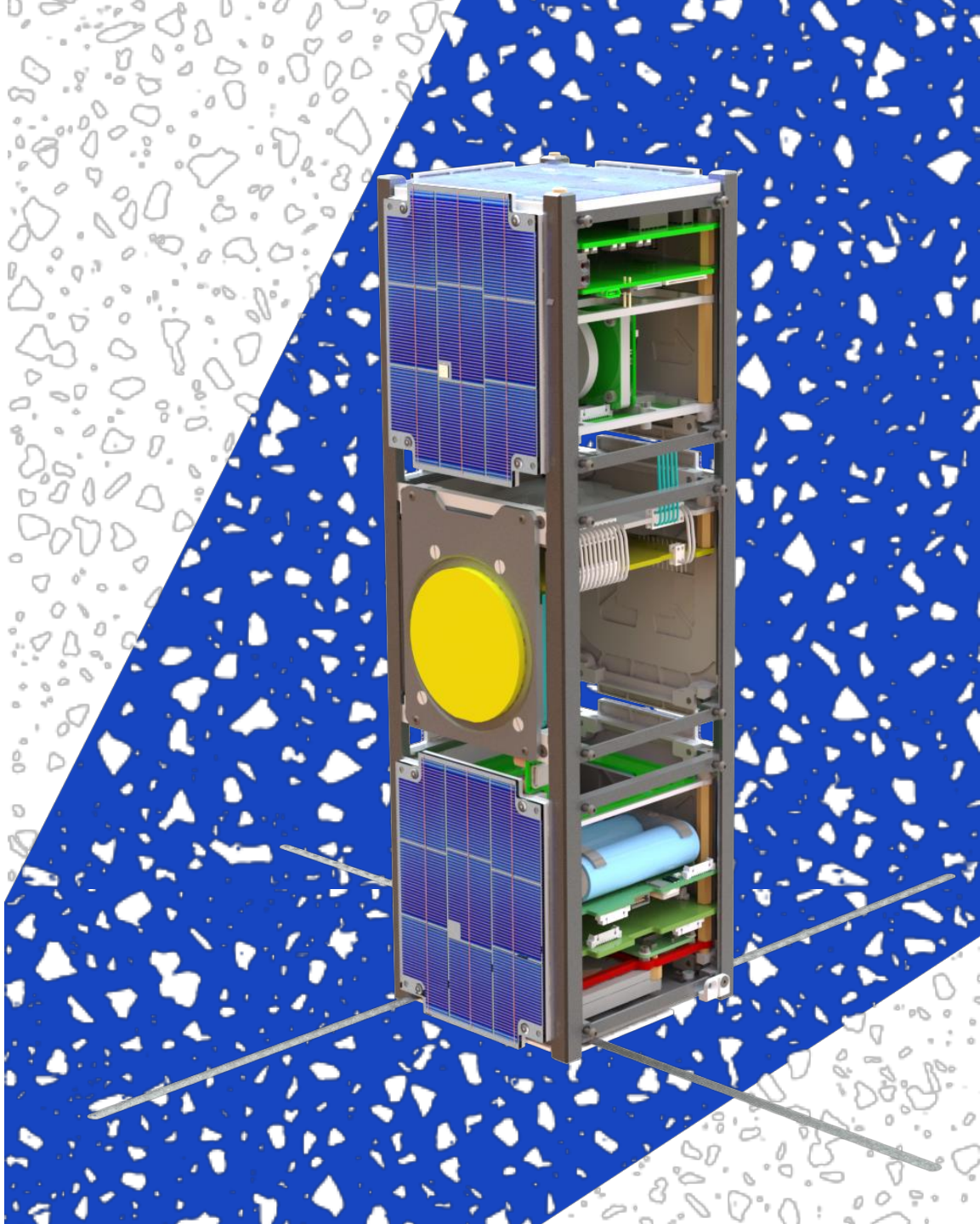
On-board computer, sensors measuring pressure, temperature, angular acceleration, etc.

Body

The main supporting structure (frame) to which all the boards and solar panels are attached.

Power supply system

Photovoltaic converters



Payloads available

Space-π makes it possible to carry out various space experiments in Earth orbit due to the variety of payloads offered by the project's partner companies.

 Remote sensing	 AIS	 Spectrometers	 Probe microscope
 ADS-B	 Telescope	 IoT	 Ray detector
 Radio transmitter	 Engines	 On-board laboratories	

16
CubeSats

11
Universities

1
Company

1
School

On November 5, 2024, the launch of the Soyuz-2.1b launch vehicle with 16 small spacecraft created as part of the Space-π project took place from the Vostochny cosmodrome. We went all together to see the power of launch!

OUR EVENTS

Space-π regularly conducts scientific and educational lectures, webinars, seminars and workshops on space topics for students. You can find out about upcoming educational programs on the website and on social networks of Space-π.

20 +
LECTURES

10 +
WEBINARS

10 +
WORKSHOPS

200 000 +
ONLINE VIEWS

NETWORK OF GROUND-BASED RESEARCH COMPLEXES

School network of SONIX (СОНИКС рус.) ground stations for the creation of the ground infrastructure of the Space-π project. Anyone can work with the received data and learn the basics of satellite communications on the official website of Sonic.space.

The partner of the Space-π project, Geoscan company, together with the ANO Development of Space Education, have manufactured 50 ground-based reception stations, and with the support of the Innovation Assistance Fund, they are distributed free of charge to schools and institutions of additional education throughout Russia from Kaliningrad to Chukotka.

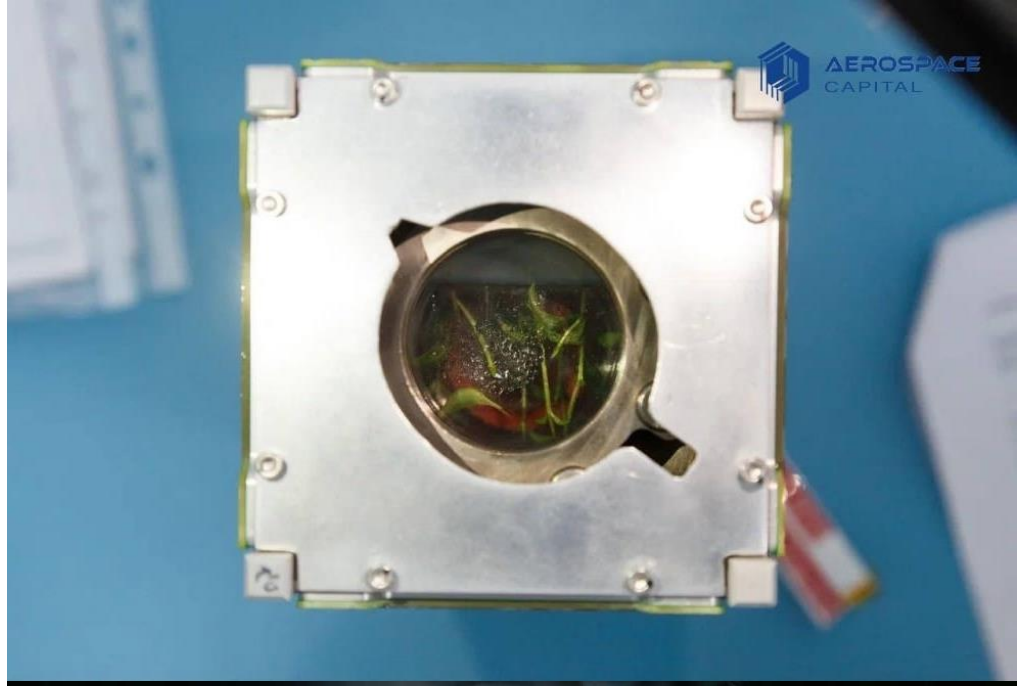
The stations receive a radio signal in the range of 130 MHz – 1.5 GHz (VHF and UHF) with a central frequency of 436 MHz. They are easily assembled and have a modular construction.

"LILAC" IN SPACE

On August 9, 2022, the Lilac satellite of the Belgorod National Research University team was delivered to the target orbit.

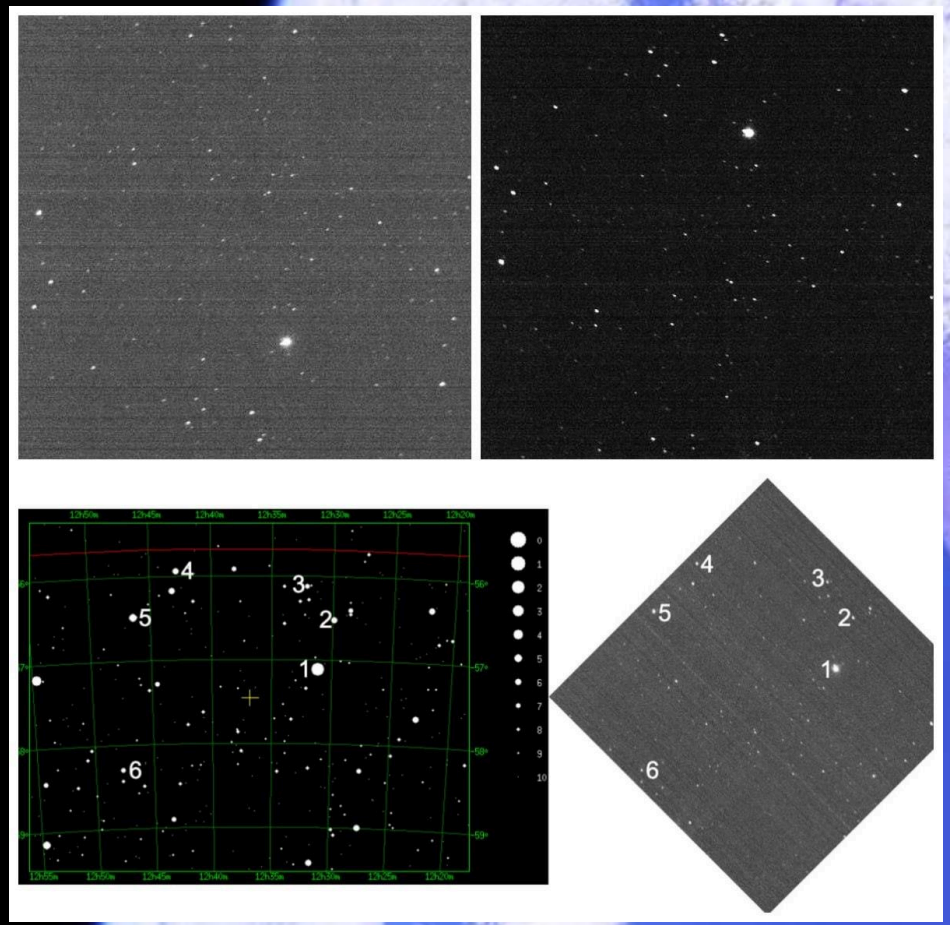
4 lilac sprouts of the Great Victory variety in a special nutrient medium for studying their growth in space conditions. The plant is monitored using cameras and humidity and temperature sensors.

Lilac from Belgorod has become the most remote plant from the Earth and entered the Russian Book of Records. The maximum distance at the apogee of the orbit was 530 km above sea level.



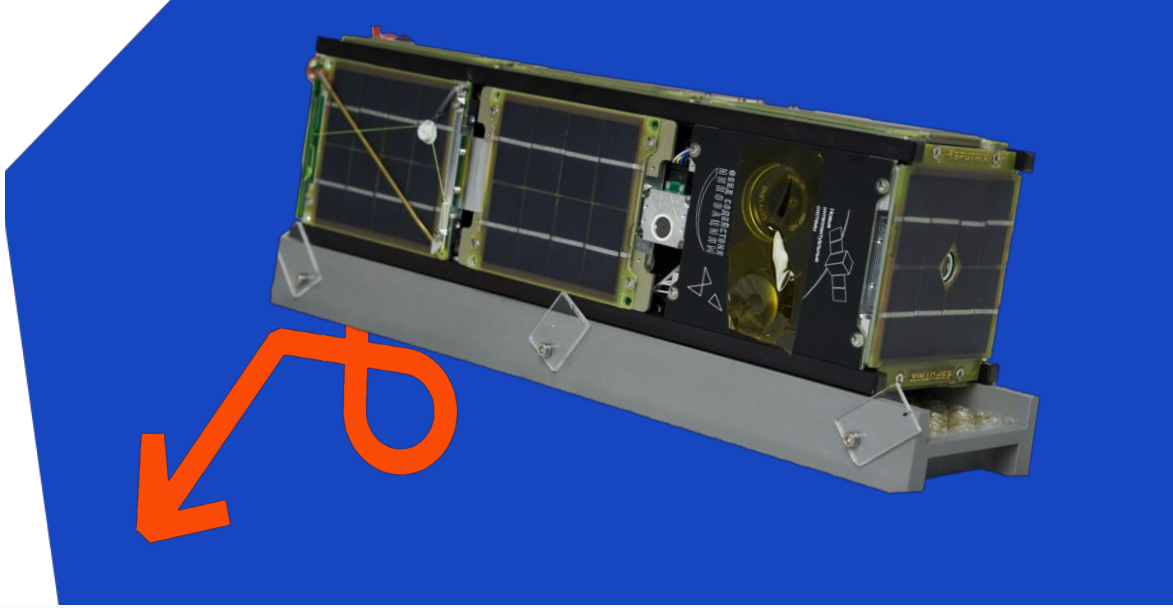
«UmKA-1»

The UmKA-1 satellite is equipped with a high-power telescope Leptonar-20955K and an astronomical digital camera playerOne Saturn-C SQR. The device is designed for shooting planets, stars and nebulae.

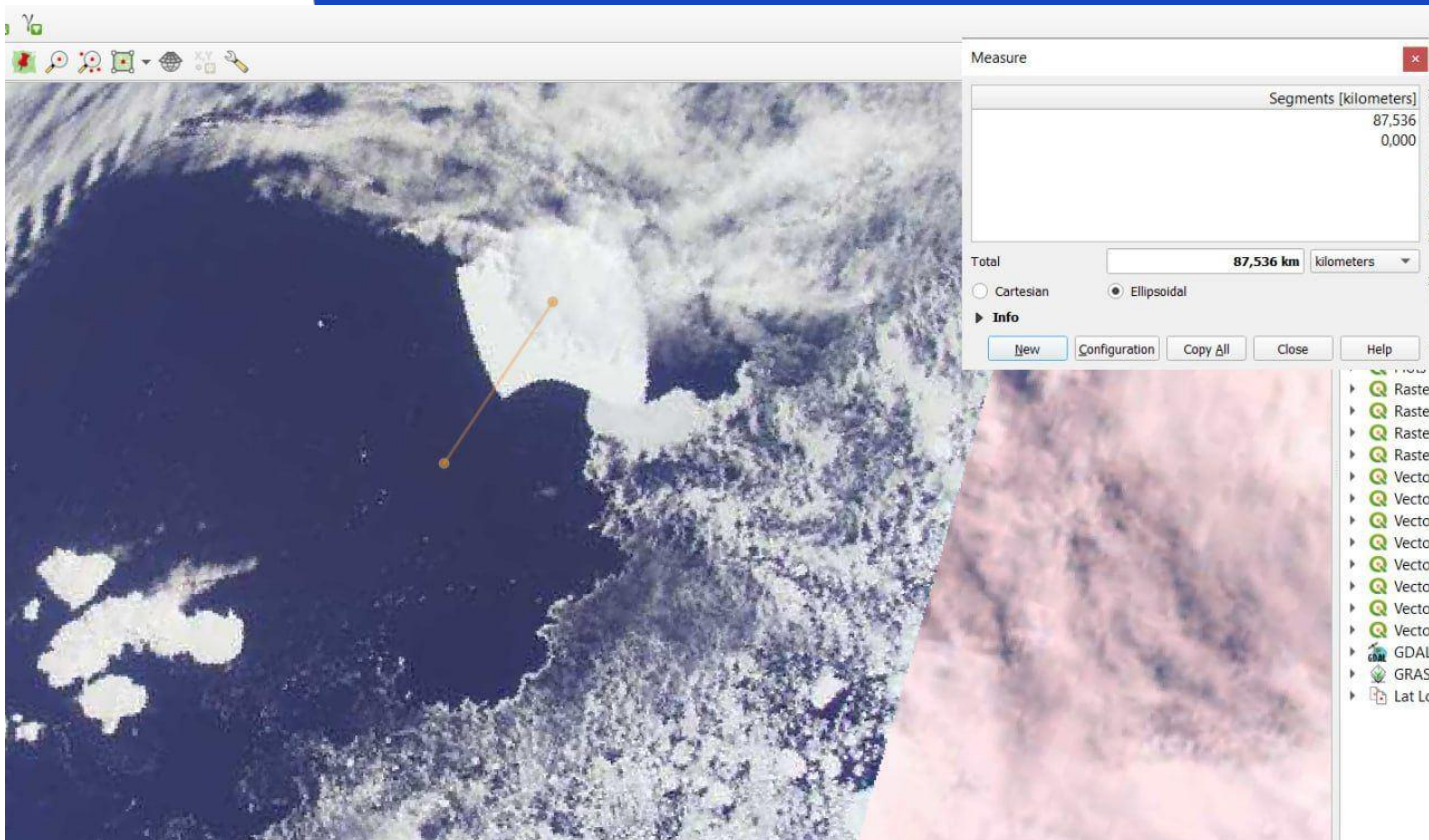


VIZARD-METEO

The nanosatellite of NIS LLC and VIZARD LLC was created on the basis of the OrbiCraft-Pro platform of SPUTNIX. Students of the V. I. Churkin School No. 1522 in Moscow take part in the project.



Two Earth remote sensing cameras are placed on the device. With their help, students receive images of the Arctic regions of the Earth to monitor the drift of iceberg a23. Based on the photos, children learn to predict the development of the situation on the Northern Sea Route and identify the formation of dangerous meteorological phenomena.



NANOZONDE-1

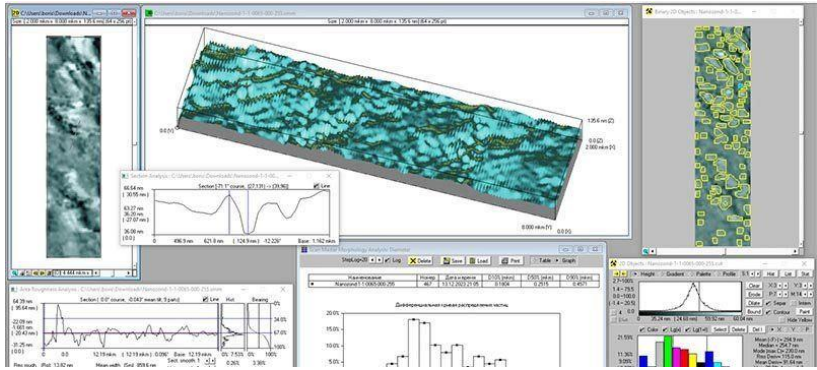
CubeSat of the Oryol State University with the world's first space scanning probe microscope on board, created by specialists from NIU MIET and the PROTON plant.

"So far, not a single speck of dust has fallen on the mirror of our microscope!

That is, at altitudes of about 550 km above sea level, space is clean"

During the six months of the satellite's flight, scientists had the opportunity to study the impact of the space environment on the surface of spacecraft structures directly in orbit and obtain information about the amount of dust in orbits. The results of the study served as the basis for a scientific article in the journal Nanoindustry devoted to the study of a thermionic sputtering method for creating thin-film coatings of metals for the operation of a scanning tunneling microscope in outer space.

The first space scanning probe microscope was created in order to study the impact of the space environment directly on the satellite on samples that were previously brought to Earth for research, as well as to "catch" dust and analyze its content in Earth orbits.



HOW DO I PARTICIPATE?

Annual Space-π competition "Open Space"

Work with Space-π partners at universities and schools

Participate in event and lectures

Thank you!

Subscribe following the QR-code ->

1.07, 16:20-16:40

«Space-π – launch you CubeSat»

Телеграм

ВКонтакте