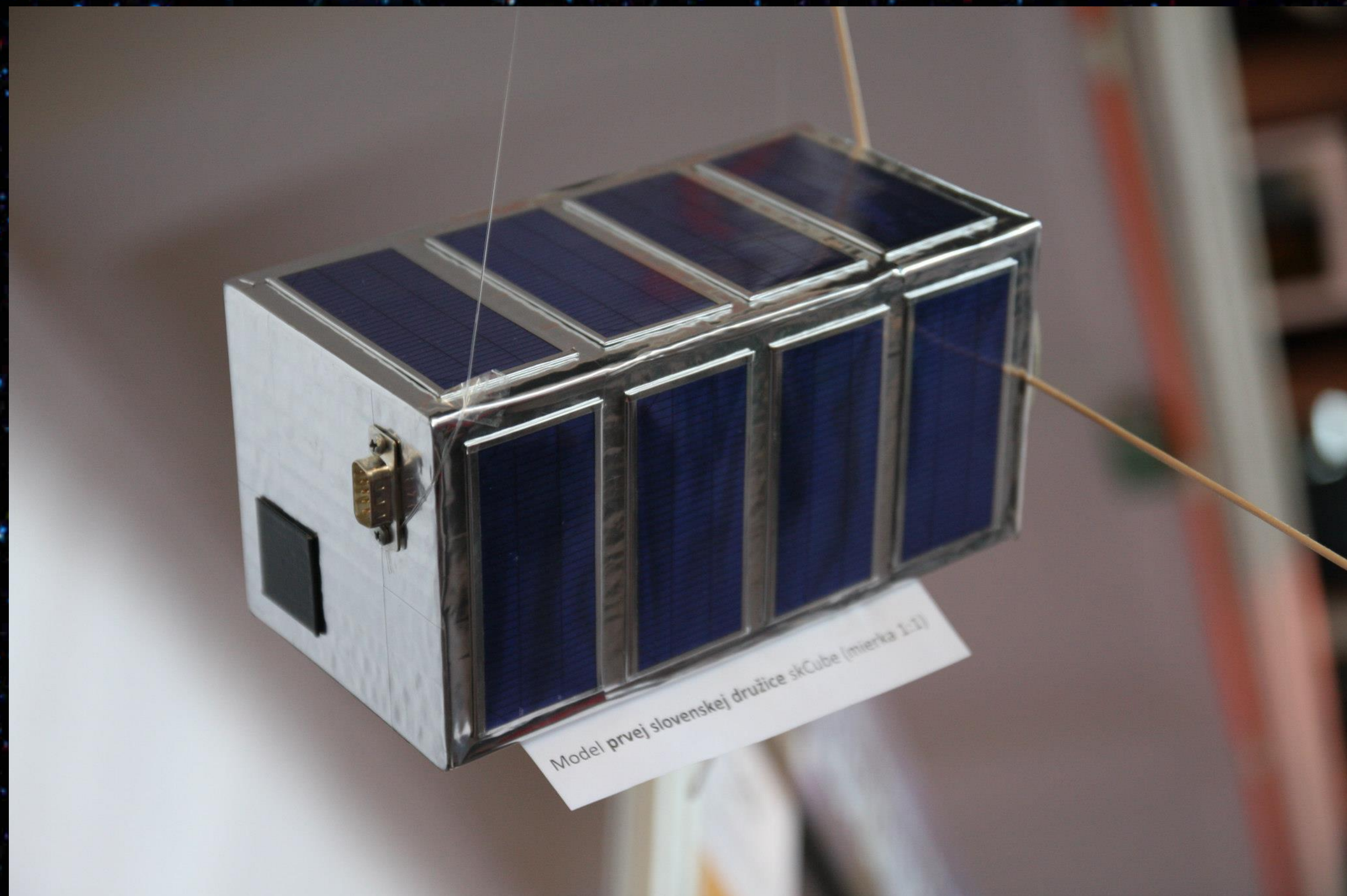




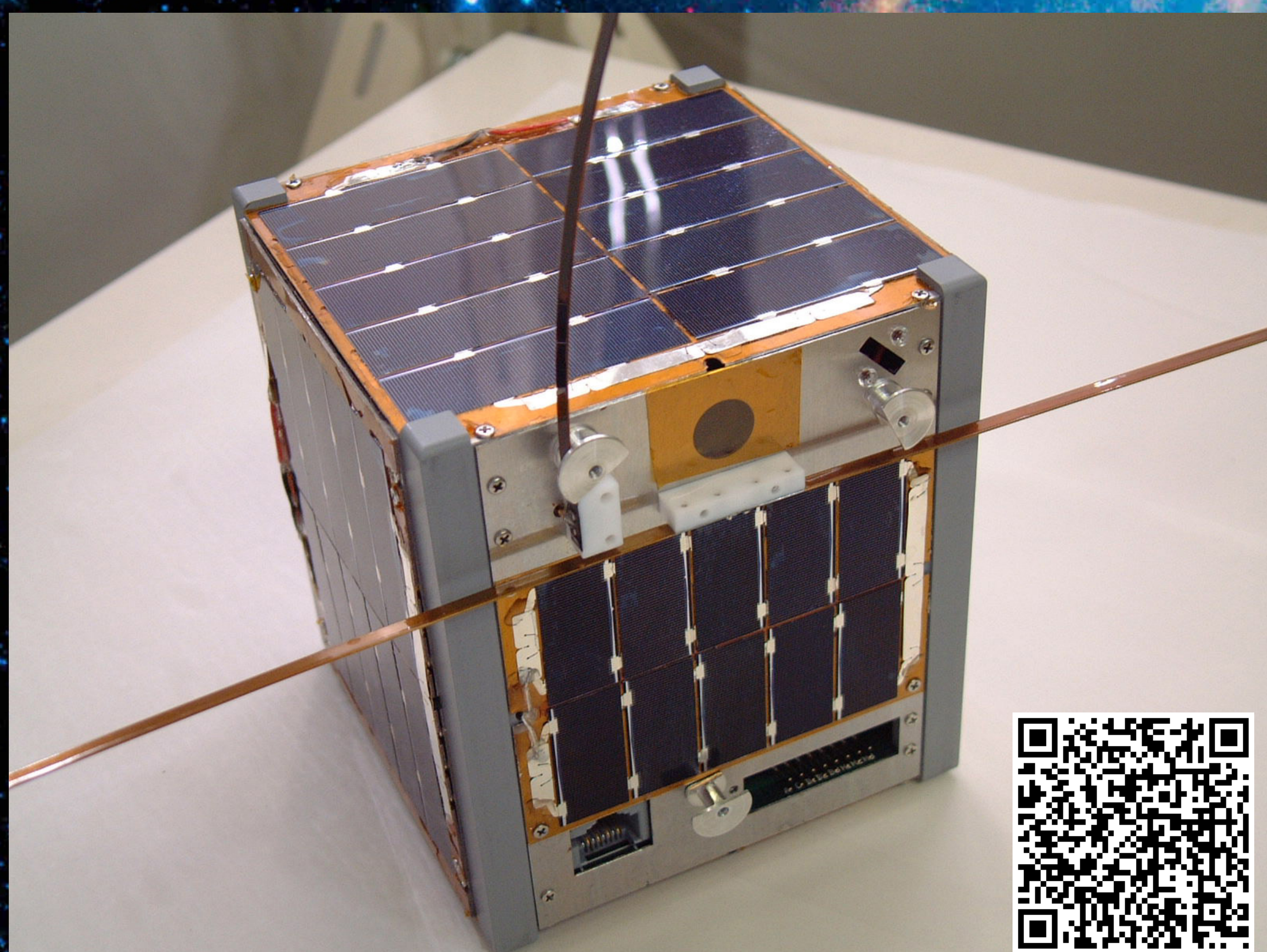
skCube

the first Slovak satellite



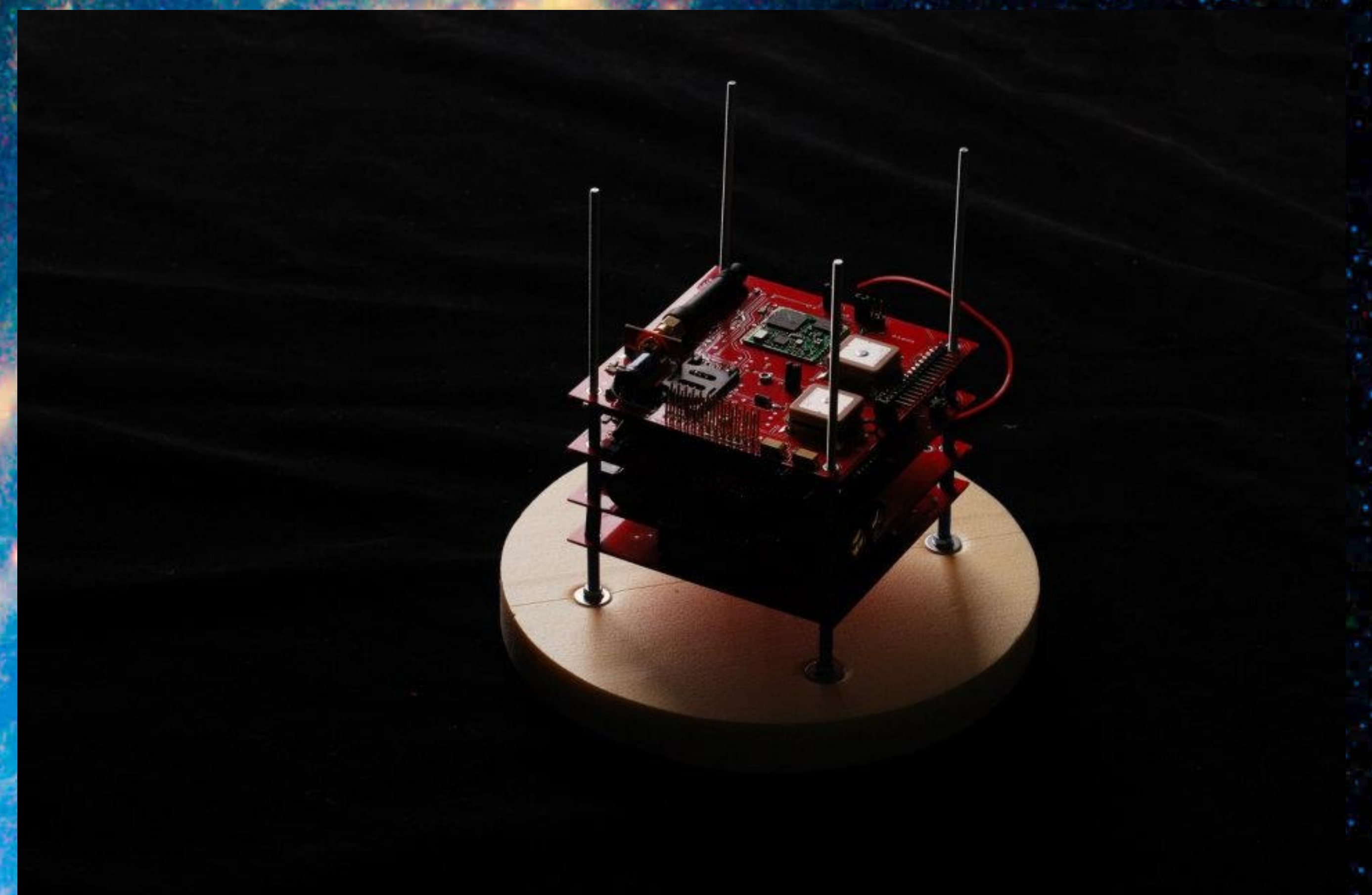
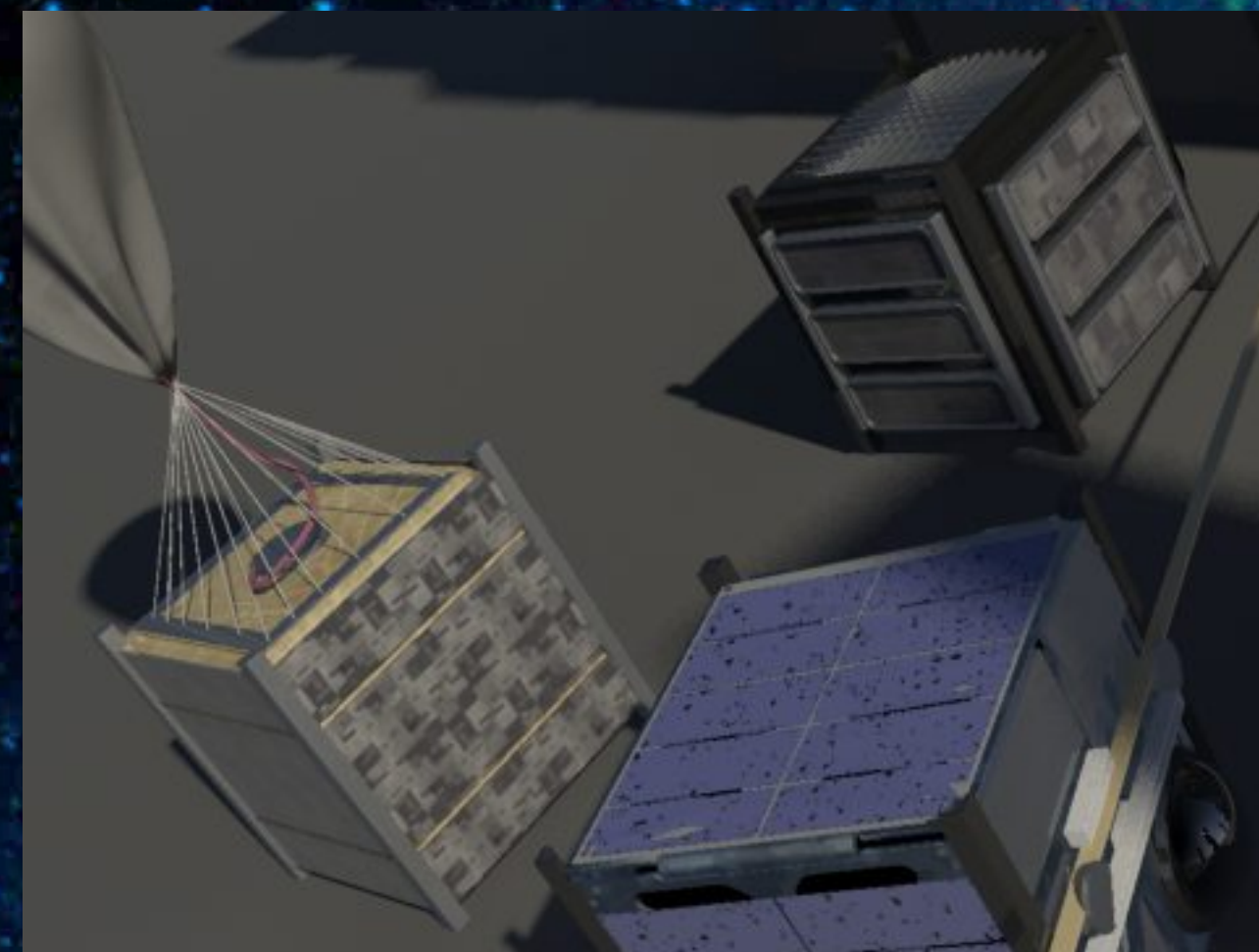
Top: Model of skCube, which will be 2U CubeSat. This means that it will have two CubeSat "U" units. Right: Several visualizations of SOSA's ideas for CubeSats experiments: FullHD camera for taking pictures of Earth or small X-ray and particle detector. One of the top ideas is to inflate a balloon like structure at orbit to rapidly increase the cross section of the satellite and to test this as a possible deorbiting mechanism.

CubeSat is a type of a super small satellite for space research or technology tests. The name is derived from a typical cubical shape. The CubeSats have volume of exactly one liter, which creates a 10cm cube. During 1999, California Polytechnic State University (Cal Poly) and Stanford University developed the CubeSat specifications to help universities worldwide to perform space science and exploration. In comparison with extremely expensive "normal" space missions, CubeSats give opportunities even to small universities or amateurs to realize their experiments in space. This is also a great opportunity for Slovakia to build our first space satellite. The another big issue in "normal" space missions is the launch and delivery to space. This could be handled in several cheap CubeSats ways. Firstly, to launch a CubeSat, a launcher in a testing phase can be used for delivering normal, expensive cargo. Another way is to split the expenses to many parts, as the normal launchers can easily carries over 50 CubeSats.

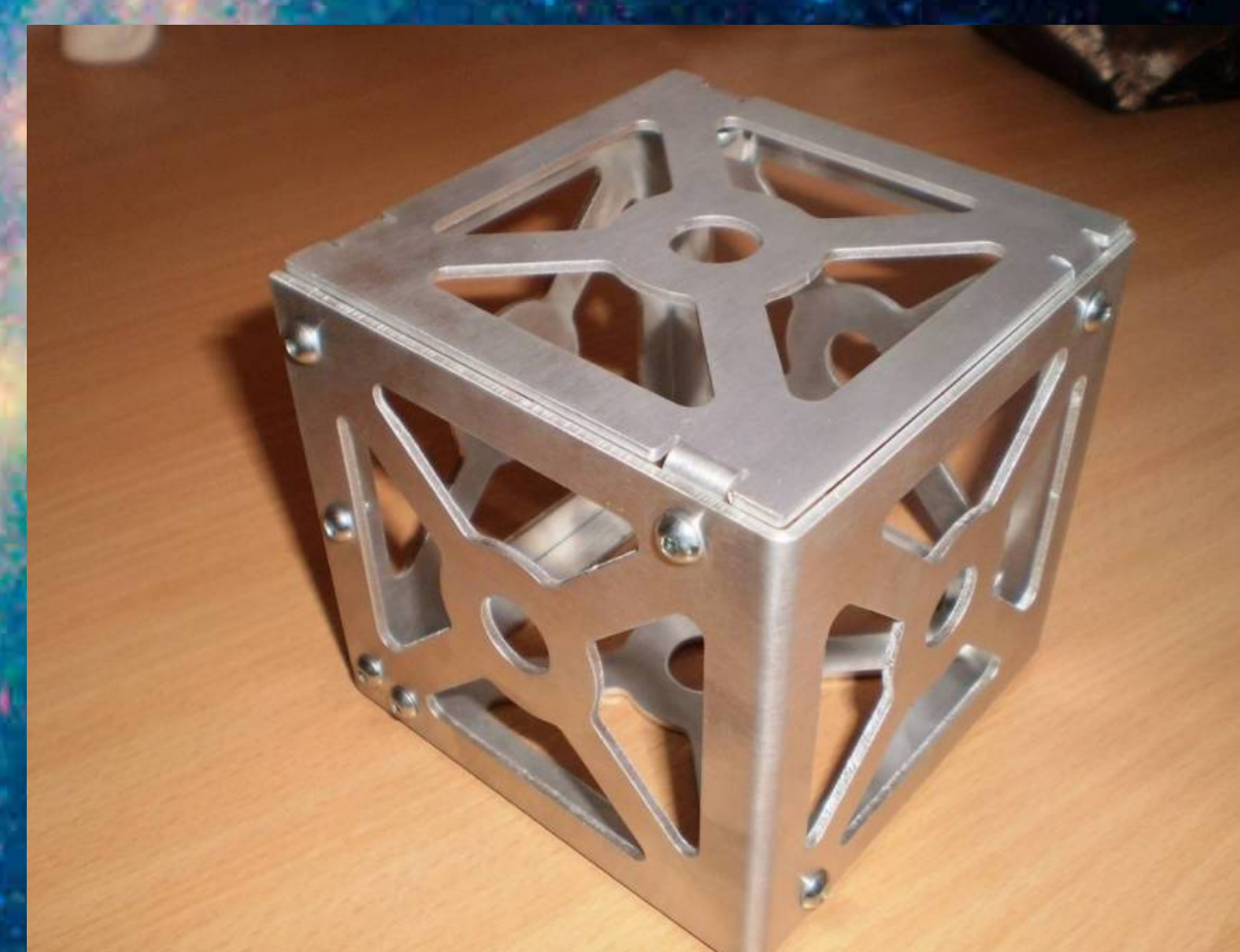


Many successful CubeSats were launched up to date. Bottom picture shows the University of Tokyo CubeSat Sai-four which was launched on 30th of June 2003 by Dnepr from the Baikonur Cosmodrome. For more info scan the QR code.

The University of Zilina (UNIZA), in cooperation with the Slovak University of Technology (STU) in Bratislava and the Slovak Organization for Space Activities (SOSA), intends to take part in an international space project called QB50, which aims to explore the upper atmosphere of our planet in order to improve the prediction ability concerning re-entering space debris and to mitigate the threat of impacts of the debris into urbanized areas.



Top: Internal design of JULO2 near-space experiment launched on 14th of April 2012. JULO2 reached 33 394m above the sea level. Position and shape of printed circuit boards was similar to that in CubeSats.



Top: Volume model of skCube on the right and part of the SOSA skCube team posing at the PartyRobot workshop.

We expect beginning of the construction phase in the end of year 2012 with first launch opportunity in 2016. One of the possible skCube launch program is QB50 where skCube was been one from the selected proposals in competition with 71 another missions from 38 countries. The build and successful launch of skCube, the first Slovak satellite, will demonstrate the ability of our industry and universities to successfully obtain experiences in space research. The other, very important goal is to motivate young people for choosing their careers in such fields as the engineering or the space-research related fields.

