



Students' Space Association at the Warsaw University of Technology

Inna Uwarowa

Warsaw University of Technology, Warsaw, Poland

The 2nd UNISON-Global Meeting
Kitakyushu, Japan, 18-20 November 2014

Poland

- Space Research Centre Polish Academy of Science from 1976
- 50 space missions
- ESA member state from 2012
- 3 satellites on orbit from 2012 (PW-Sat, BRITE-Lem and Heweliusz)
- PW-Sat2
- Polish Space Agency 2015



Students' Space Association



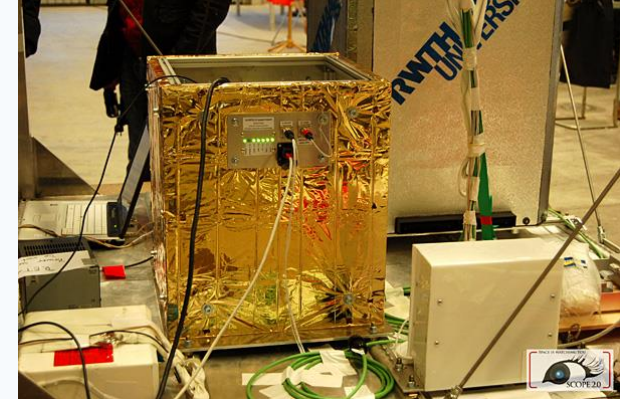
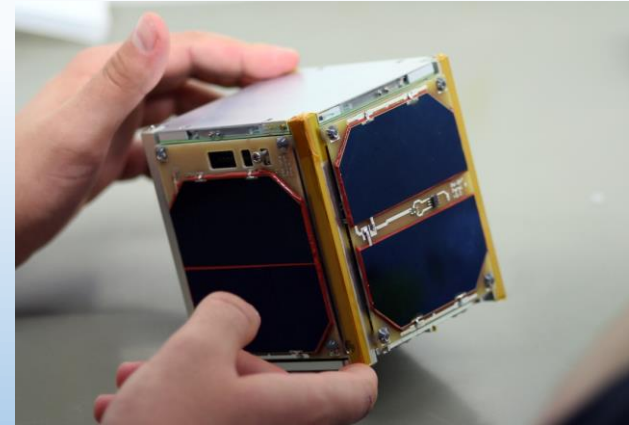
- Established in 1996
- Supervised by prof. Piotr Wolanski
- Number of members: more than 130
- Sections:
 - Rocket Section,
 - PW-Sat2,
 - Balloon Section,
 - Mars Rovers.



Students' Space Association Past Activities

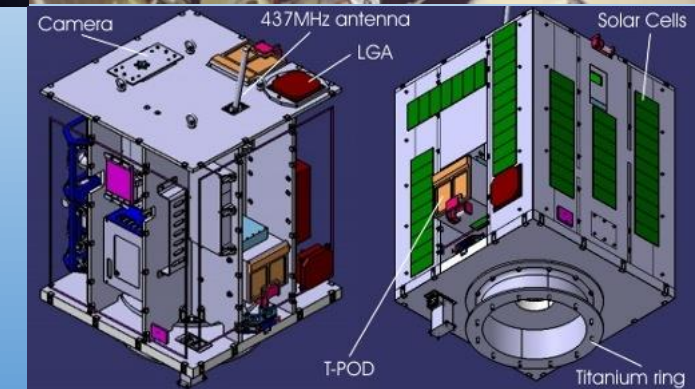
ESA hands-on projects:

- Parabolic Flight Campaign
- SSETI Express (27 October 2005)
- YES2 (14 September 2007)
- ESEO
- ESMO
- Rexus/Bexus (23 November 2010)
- PW-Sat (13 February 2012)



Other activities:

- Air Shows: ILA, Le Bourget, Farnborough, MAKS
- Conferences, Congresses and Forums,
- Space activities popularization



Students' Space Association Present Activities

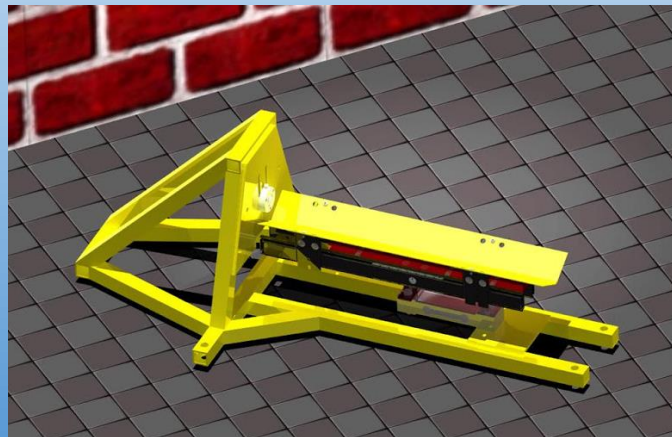
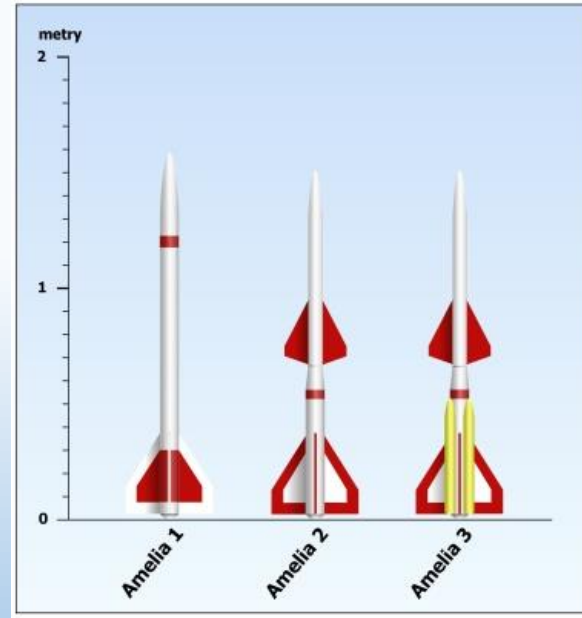


Rocket Section

Amelia rocket family A1 A2 A3

H rocket family H1 H2

Test bench
Simulations



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Mars rovers

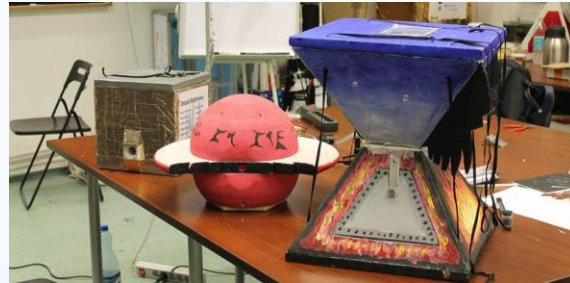
- Skarabeusz
- Ares
- MIGOT



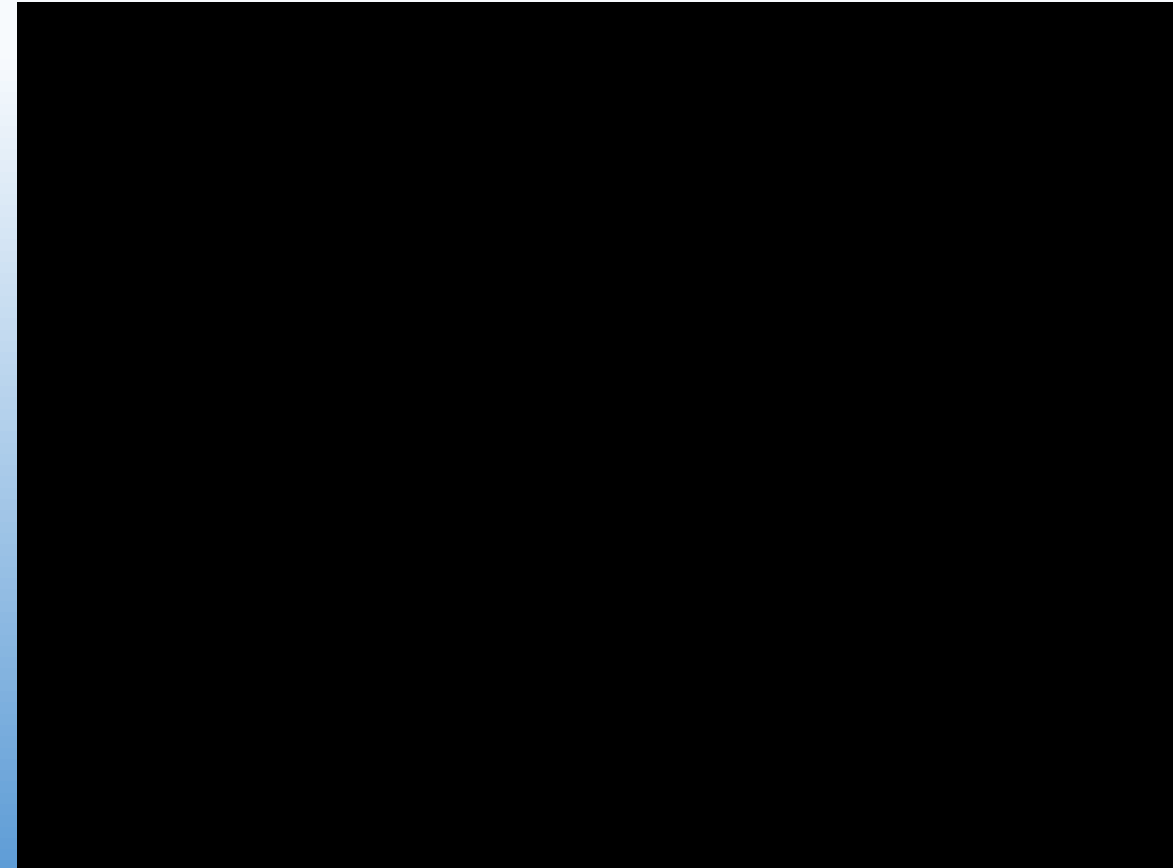
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Balloon Section



- Światowid 1 (30.06.2013, start: Urle)
 - Main gondola: [Jarowit-Jaryło](#)
 - Experiments: KULLA 1, PARTICULA 1
- Światowid 2 (15.09.2013, start: Urle)
 - Main gondola : [Świtezianka](#)
 - Experiments: PARTICULA 2
- Światowid 3 (2.07.2014, start: Goczałkowice-Zdrój)
 - Main gondola : [Strzybóg](#)
 - Experiments: PARTICULA 3, CURSUS 1, Inertial Navigation System



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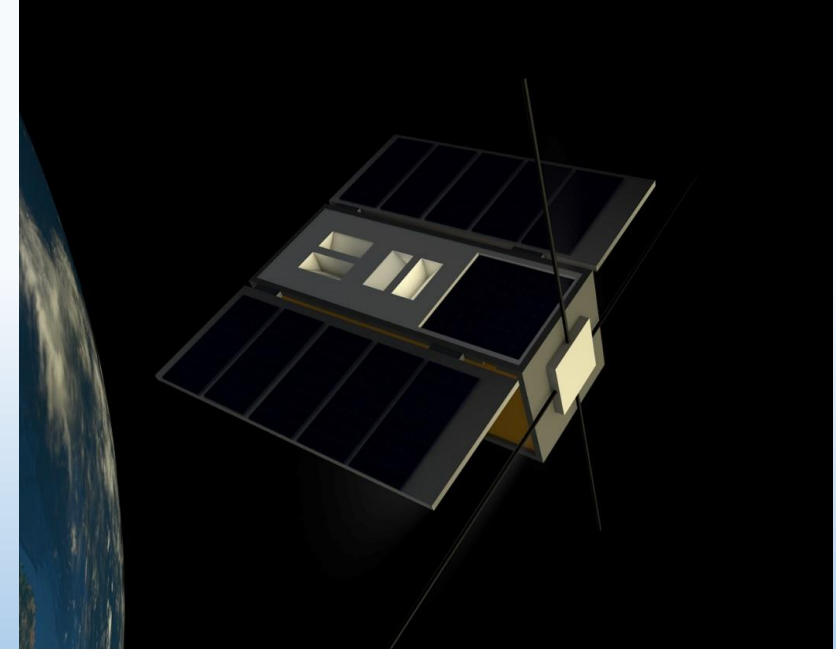


Student Satellite Project

Cubesat 2U

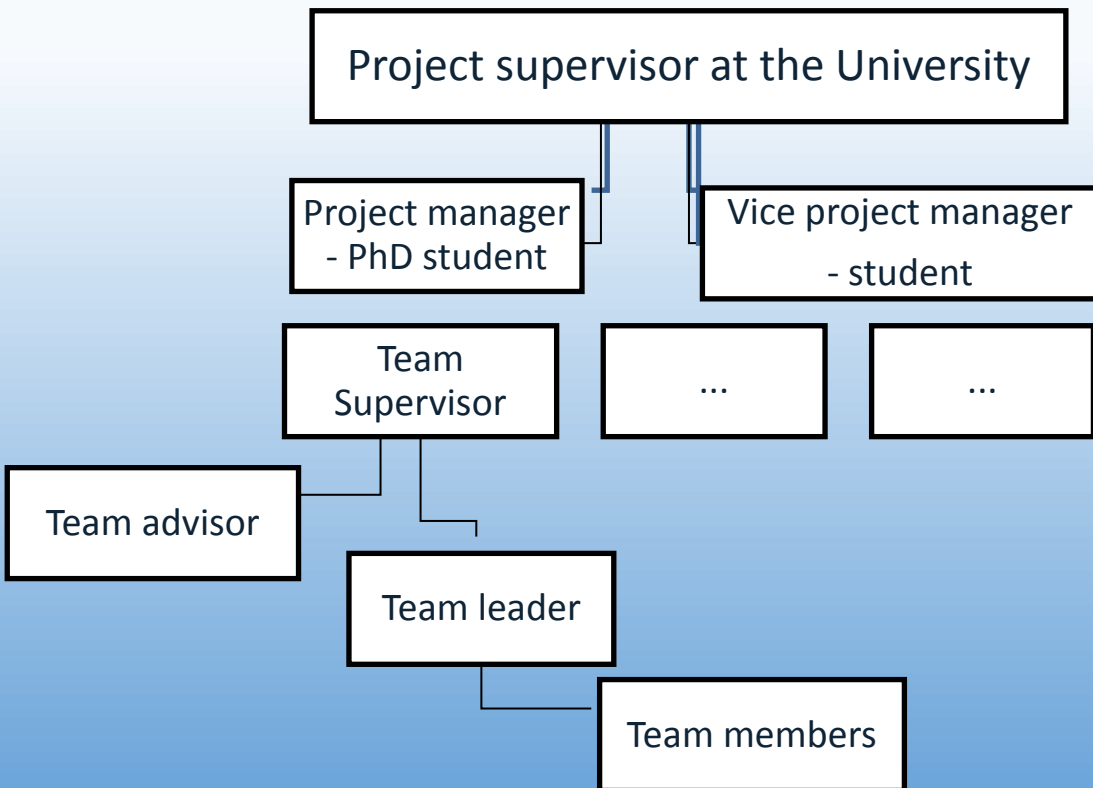
27 students team from 7 different faculties

Cooperation with:



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PW-Sat2 Student Satellite Project



ADCS	Team responsible for the ADCS module
CAM	Team responsible for the Cam1 and Cam2
COMM	Team responsible for the communication module
CONF	Team responsible for configuration of the satellite
DT	Team responsible for the deployment structures
EPS	Team responsible for the EPS module
GS	Team responsible for the Ground Station
MA	Team responsible for Mission Analysis
OBC	Team responsible for the on-board computer/OBC
PR	Team responsible for project promotion
SunS	Team responsible for the Sun sensor experiment
TCS	Team responsible for the thermal control system

PW-Sat2 Student Satellite Project

Deorbitation Sail

- Main payload
- New concept
- Technology development
 - Test stand
 - Roll up stand
- BSc. thesis
- Size up to 2x2 m²



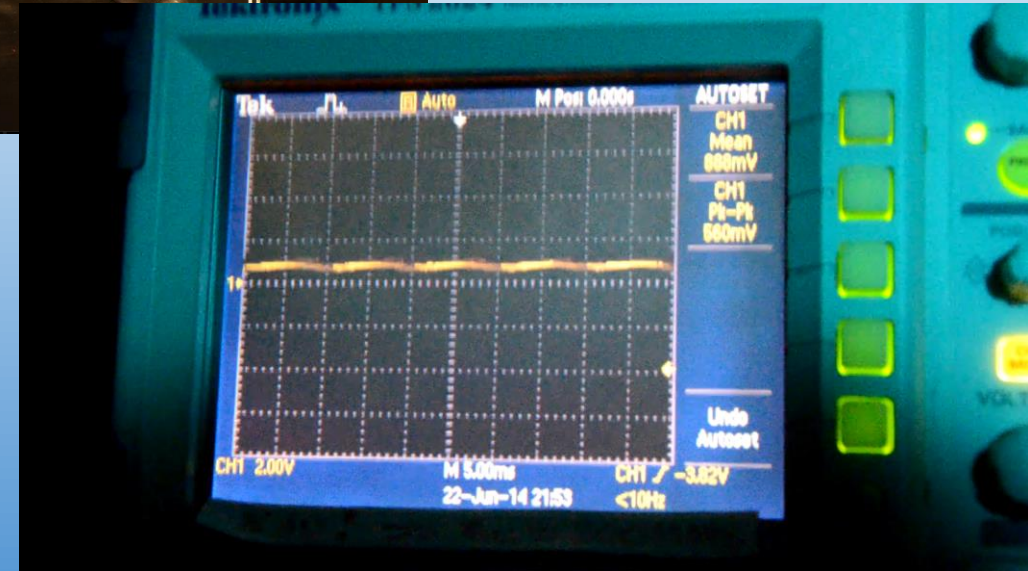
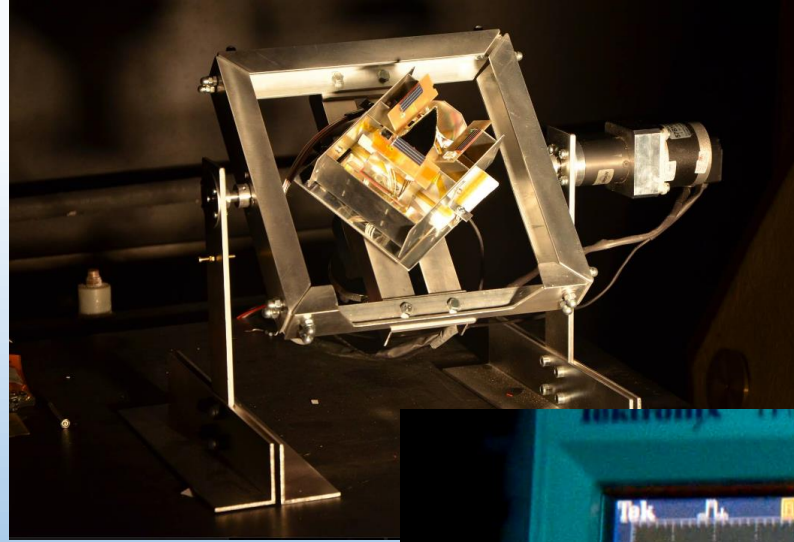
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PW-Sat2 Student Satellite Project

Sun Sensor

- Secondary payload
- New Concept
- 2 BSc. thesis
- Test stand
- Sun simulator
- FOV up to 160° , accuracy $\geq 1^\circ$



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PW-Sat2 Student Satellite Project

Solar Arrays Deployable System

EPS

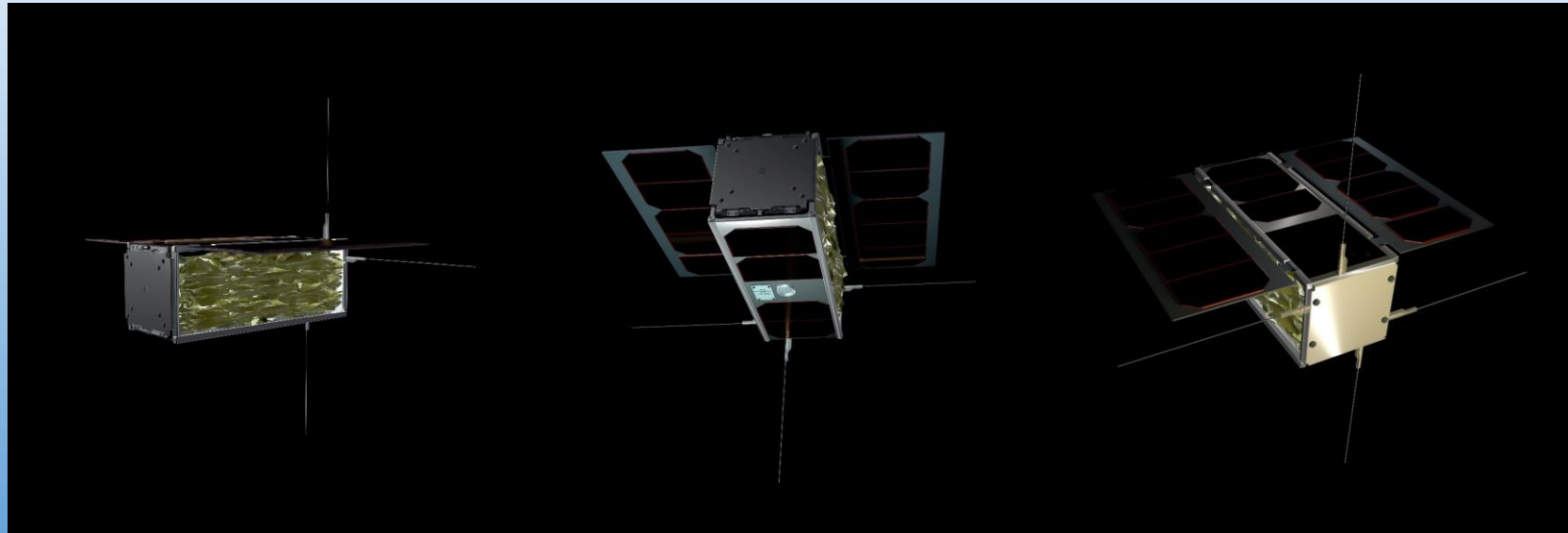
Structure

OBC

Star Tracker (payload)

COMM

ADCS



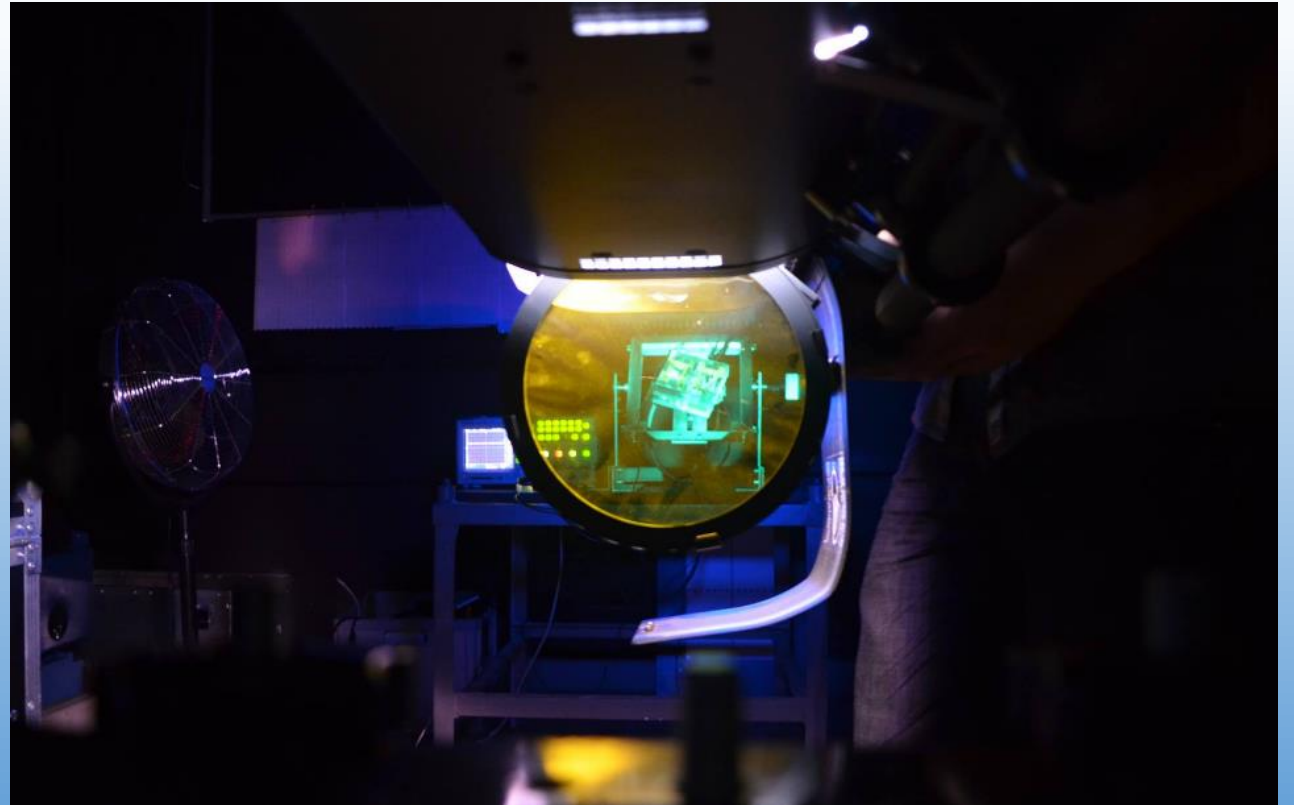
Students' Space Association Present Activities



PW-Sat2 Student Satellite Project

Partnership

- Education
- Development
- Support
- International
experience



Thank you for your attention!

Inna Uwarowa
PW-Sat2 Project Manager
iouvarova@gmail.com
www.pw-sat.pl
www.ska.pw.edu.pl