

# SCALING UP THE NORTHERN ASTRONOMICAL STATION IN OSTROWIK



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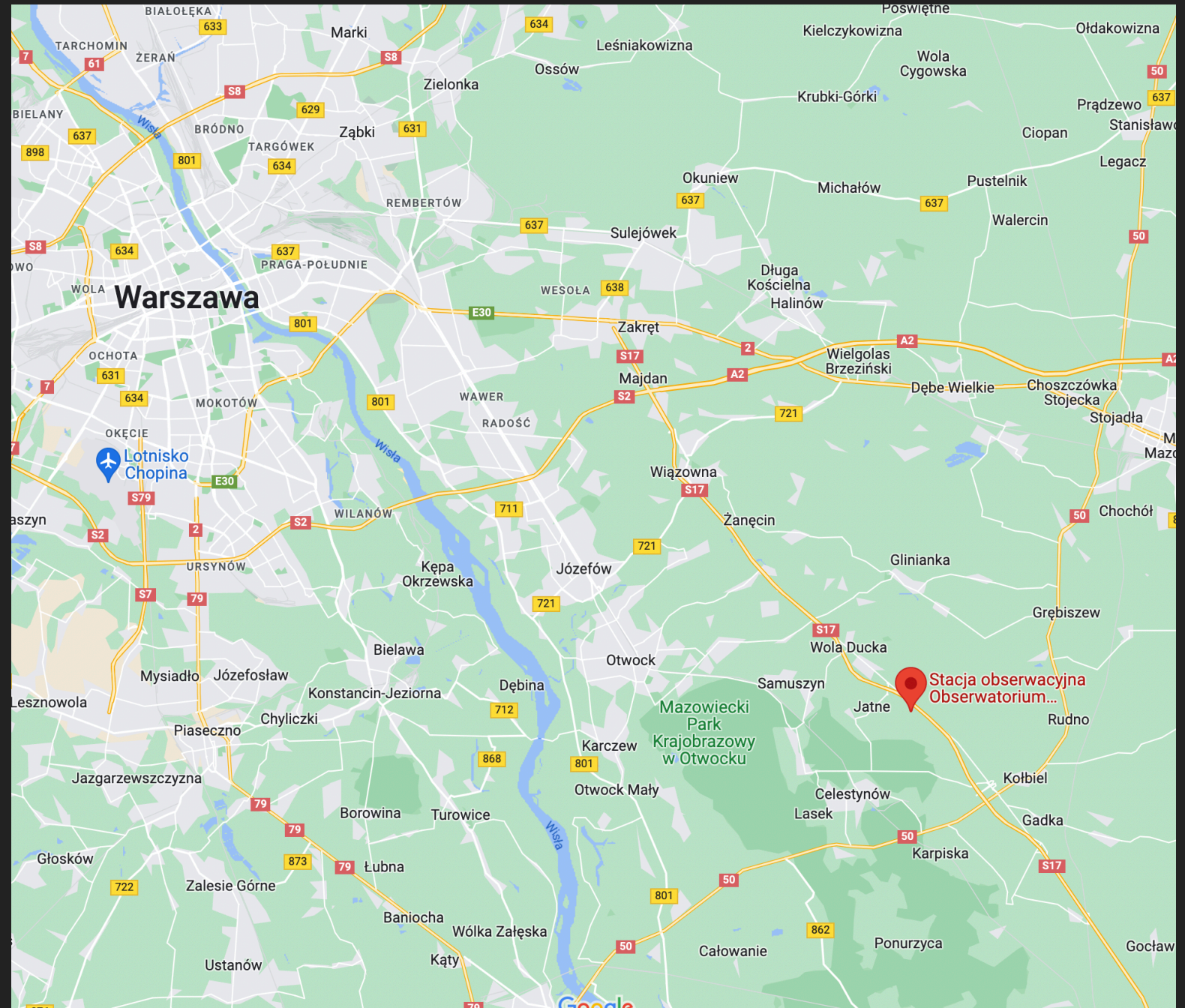
with Monika Sitek, Jakub Suchecki, Przemysław Mikołajczyk, Ewa Zegler-Poleska, Michał Szymański



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# WARSAW UNIVERSITY ASTRONOMICAL OBSERVATORY IN OSTROWIK

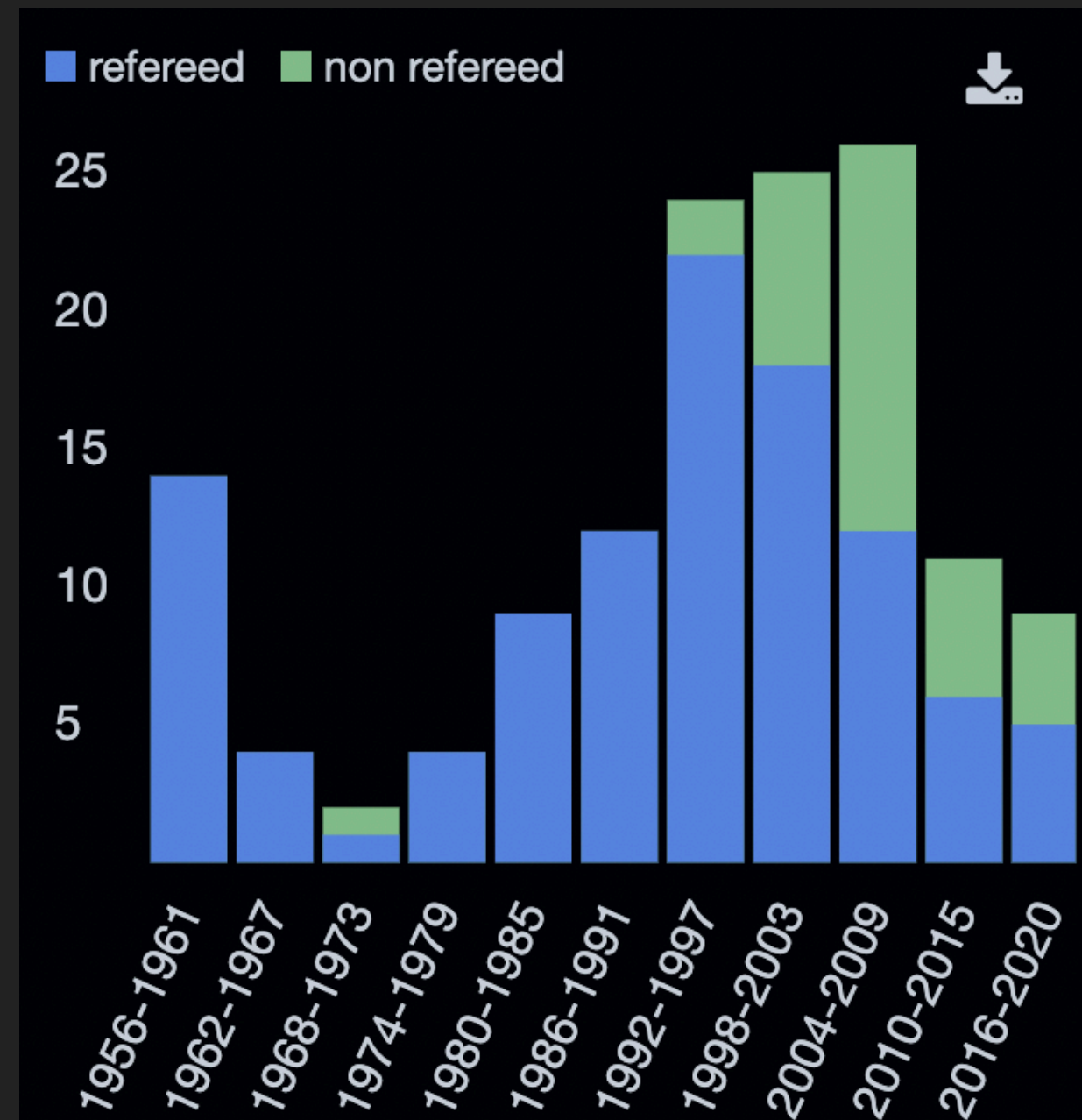
- ▶ Established in 1952
- ▶ Located 50km from Warsaw, 30min drive (new S17 road)
- ▶ Surrounded by forests to minimize the light pollution
- ▶ Research and training facility for generations of Polish astronomers (Semeniuk, Kruszewski, Paczyński, Krzemiński)





## SCIENCE SINCE 1950S

- ▶ 1960s: foundations of the gravitational wave research with binary stars by Bohdan Paczyński
- ▶ 1973: 60cm telescope from Carl Zeiss Jena (copies in Wrocław, Toruń, Kraków, still in operation)
- ▶ 1991: CCD camera installed (30 years)
- ▶ couple of paper every year over last 70 years



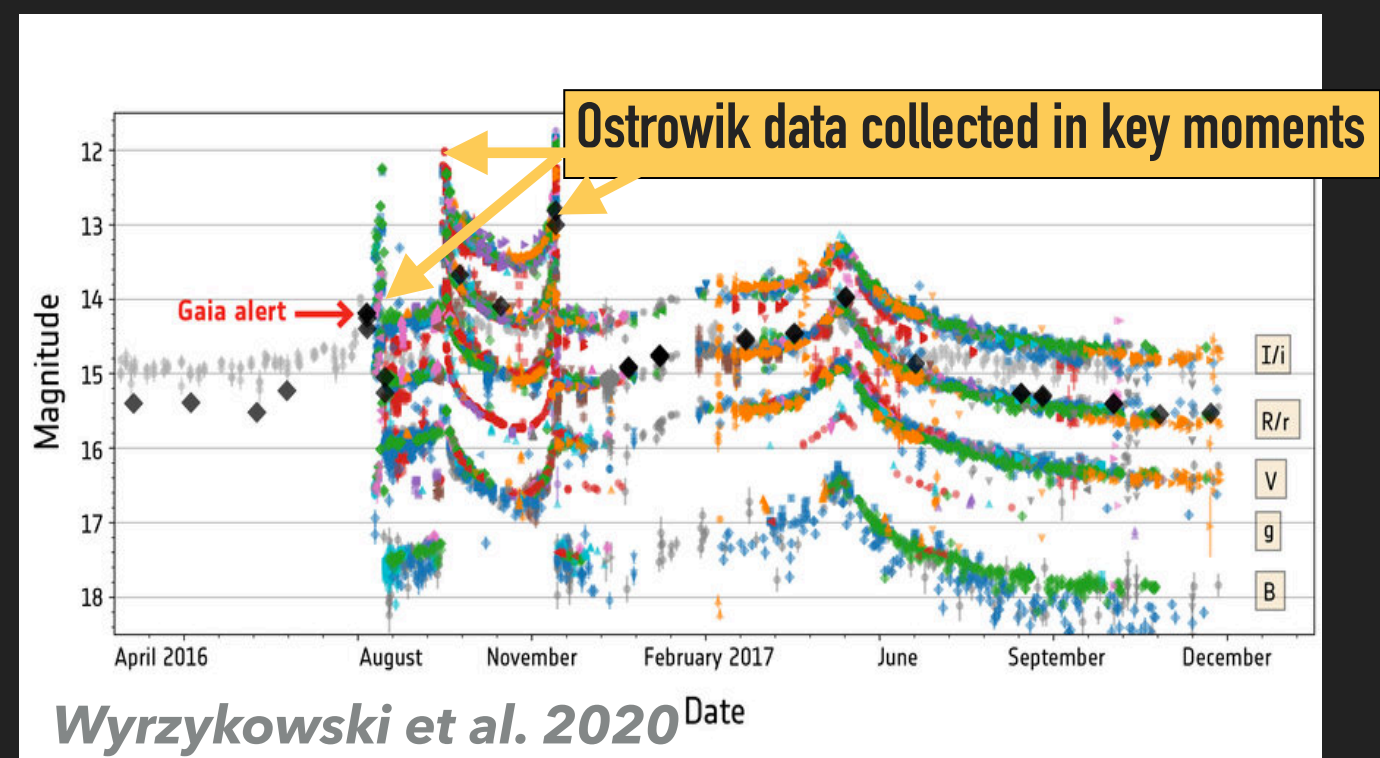
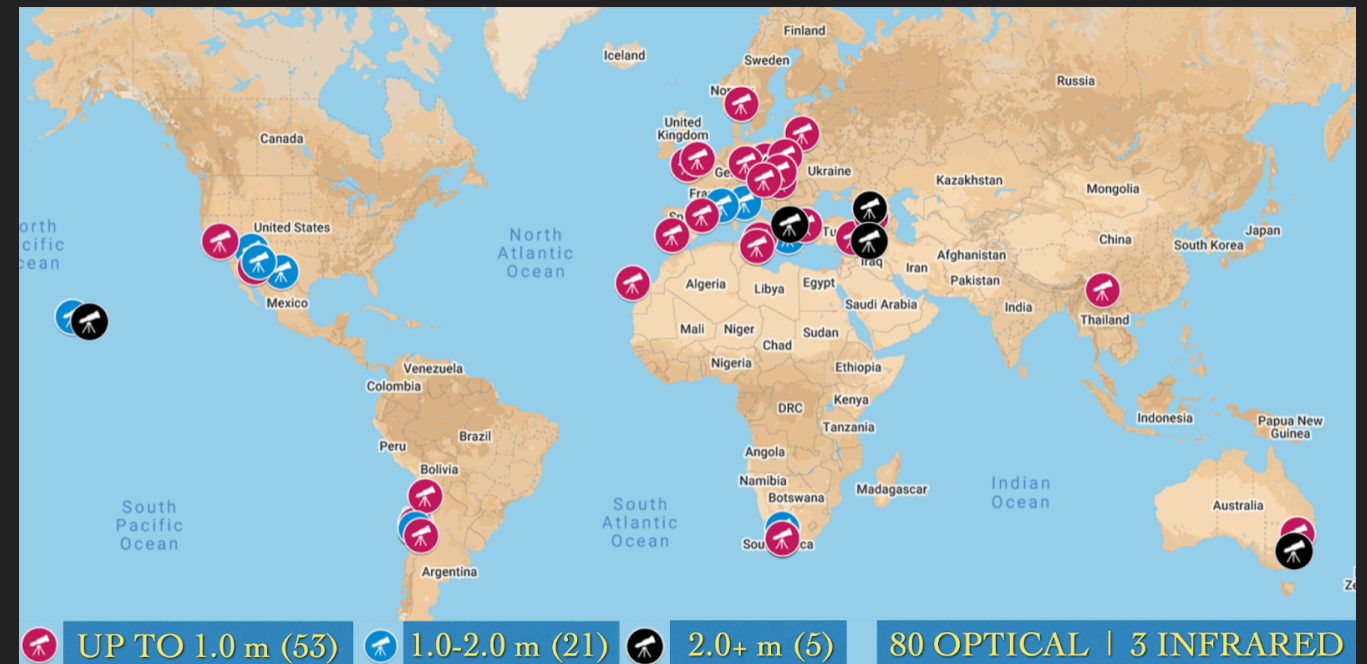


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## SCIENCE SINCE 1950S

- ▶ Ostrowik is part of a global telescope network since 2013
- ▶ Participation in long-term monitoring programs
- ▶ E.g. global campaign collected 20000 points for a crazy binary microlensing event found by the Gaia space mission

<https://bhtom.space>





## PROJECT DESCRIPTION

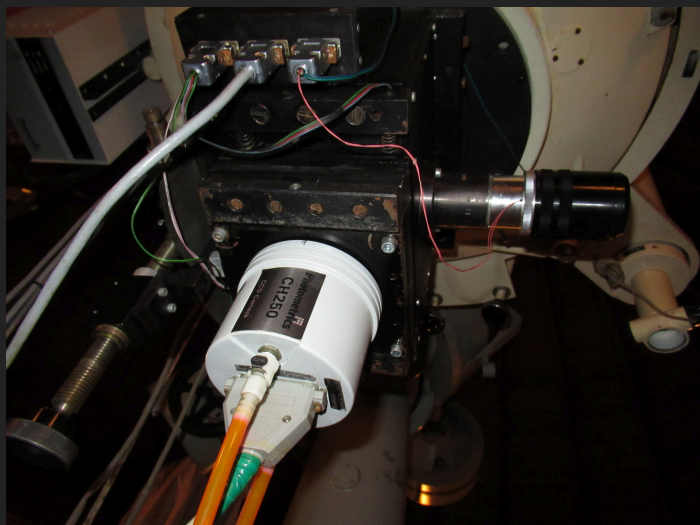
- ▶ long-awaited necessary hardware upgrade (camera, dome, computers)
- ▶ revitalize and upgrade the observatory to the world-class level
- ▶ modern astronomy is about time-domain long-term observations – Ostrowik can play an important role in a global network of small telescopes
- ▶ improved data quality = better scientific output of the facility
- ▶ improved operation of the telescope = more optimal use of the observing time



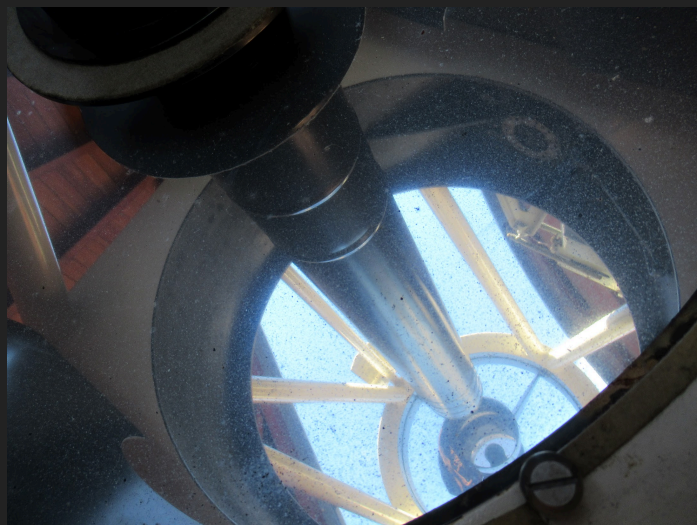


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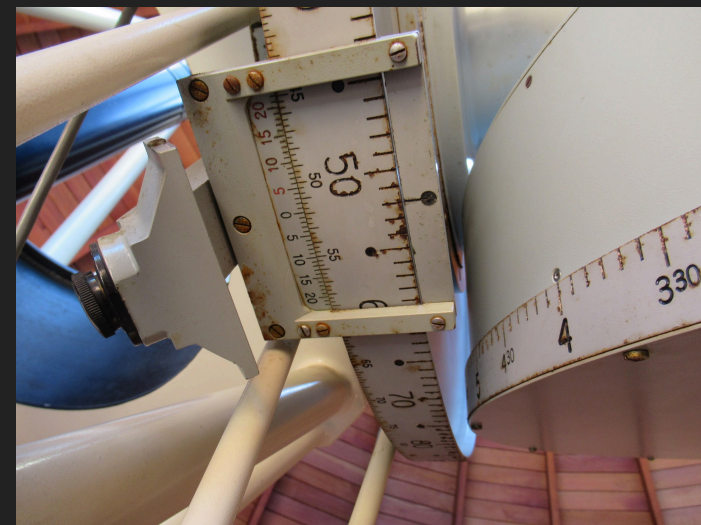
## MAIN BUDGET ITEMS



**new professional CCD camera**



**60cm mirror cleaning**



**autoguiding**



**new computers**



**robotic aux telescope in small dome**

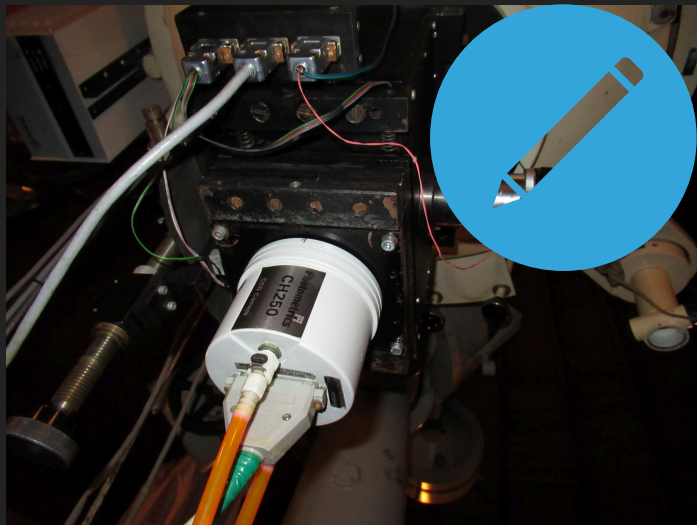


**automatic dome control**

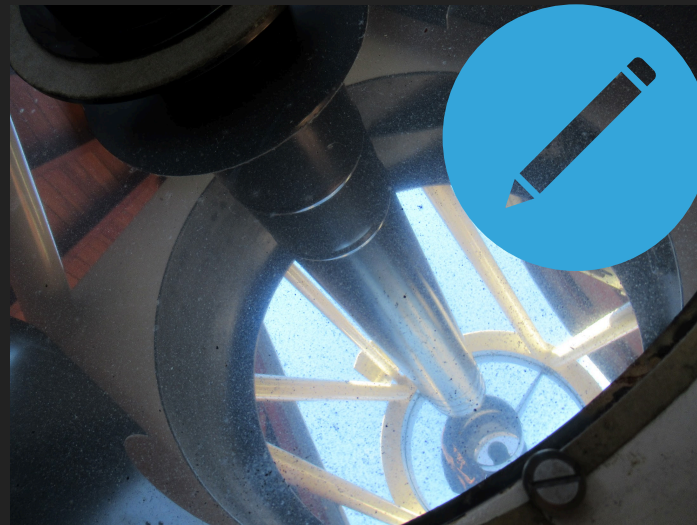


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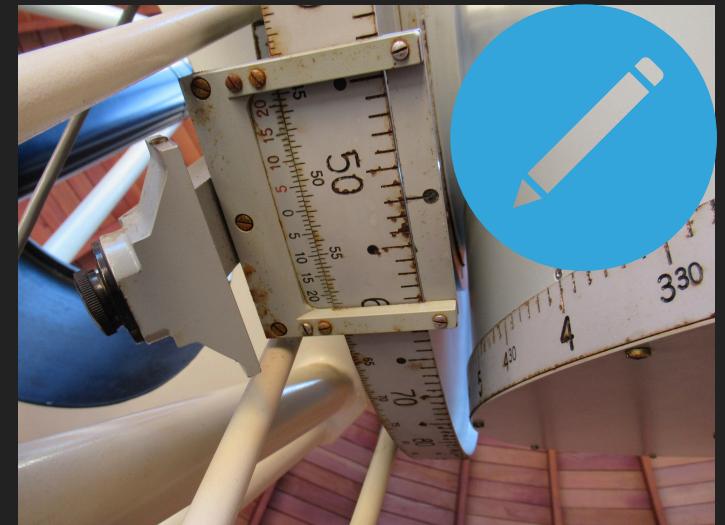
## CURRENT STATUS (FEB 2023)



new professional CCD camera



60cm mirror cleaning



autoguiding



new computers



robotic aux telescope in small dome

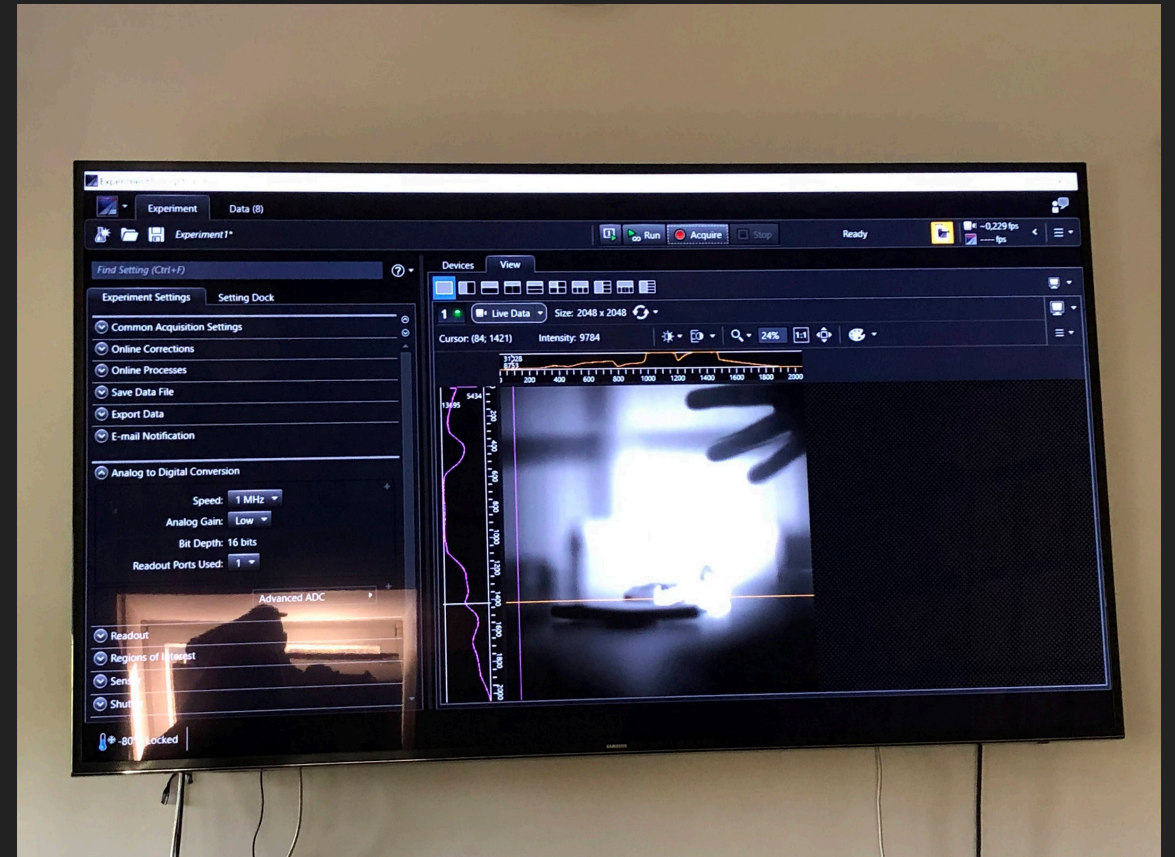


automatic dome control

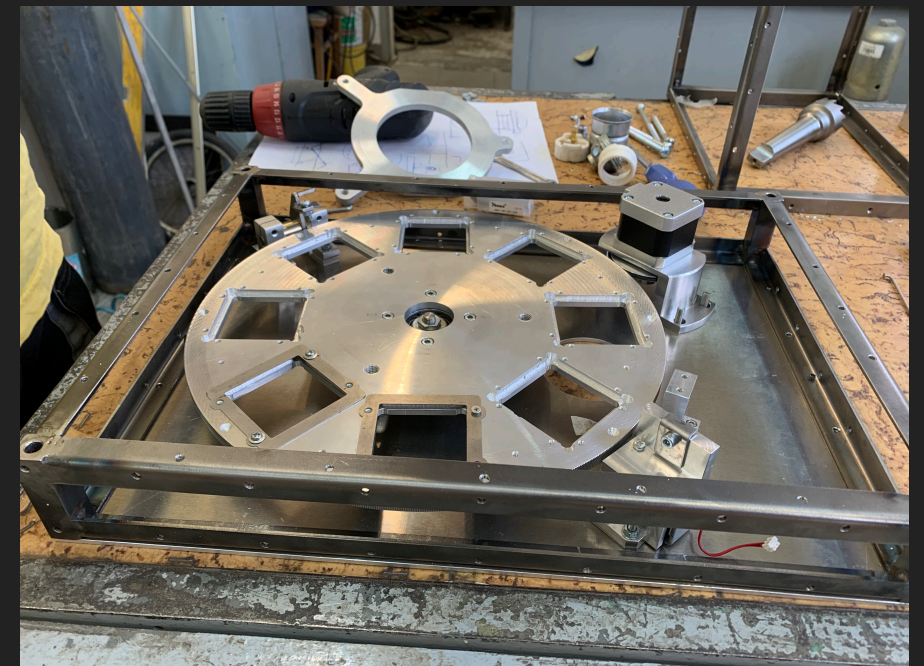


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## NEW CAMERA



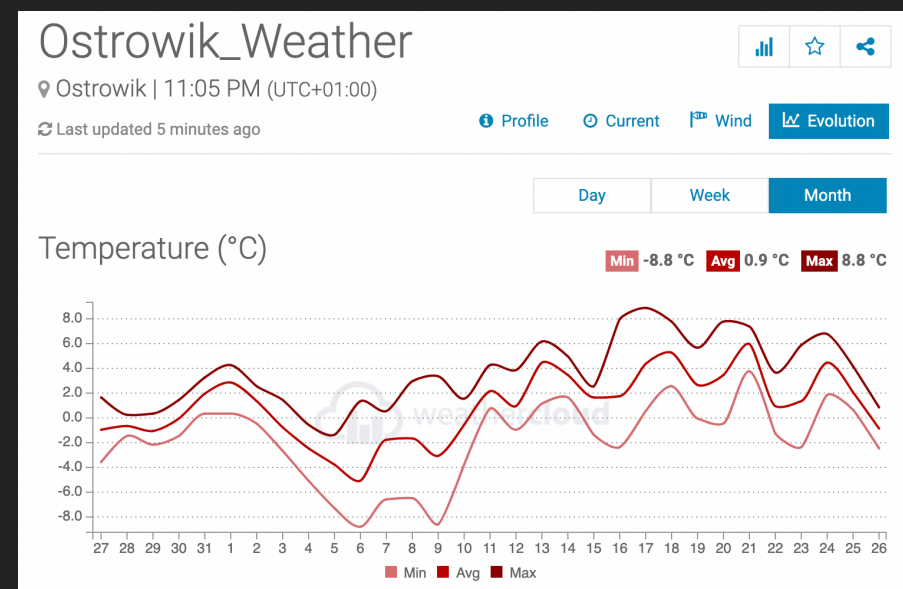
- ▶ Tender announced in Jun 2022
- ▶ New camera arrived Oct 2022
- ▶ Returned to the producer after failing tests
- ▶ Camera and filter box ready





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## SKY MONITORING STATION



[http://alps.astro.uni.wroc.pl/alps\\_ost/](http://alps.astro.uni.wroc.pl/alps_ost/)

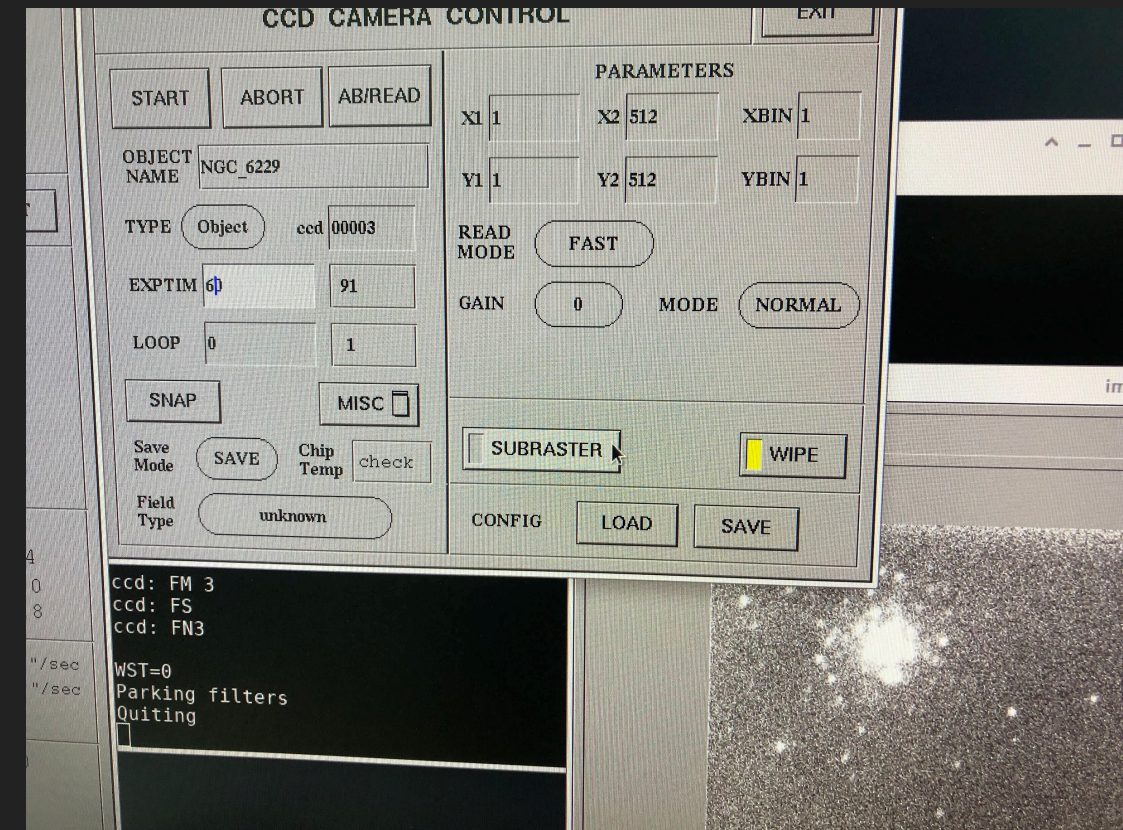


- ▶ ALPS (All-Sky Light Pollution Survey) unit in the network run by the University of Wrocław
- ▶ Installed in Dec 2021 (Przemysław Mikołajczyk)



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## NEW COMPUTERS



- ▶ Purchased and installed in 2022
- ▶ Old observing software is being rewritten (Jakub Suchacki)



## EDUCATIONAL ACTIVITIES



- ▶ Regular school visits
- ▶ Lectures and outreach (Monika Sitek)
- ▶ Tours to the telescope
- ▶ Internships for astronomy students
- ▶ Polish Children's Fund workshops (KF nRD)





## PERSPECTIVES

- ▶ maintaining the heritage of the University – the upgrade will allow for next 20 years of operation
- ▶ international collaboration in cutting-edge science – active player in the global network of small telescopes led by the University of Warsaw
- ▶ possibilities for small research projects led by students at Internships or Workshops and for Bachelor, Master, PhD theses
- ▶ a step in the direction of a modern research and outreach centre







# THANK YOU!

<http://ostrowik.astro.uw.edu.pl>

[http://alps.astro.uni.wroc.pl/alps\\_ost/](http://alps.astro.uni.wroc.pl/alps_ost/)



<https://www.facebook.com/OAUWOstrowik>