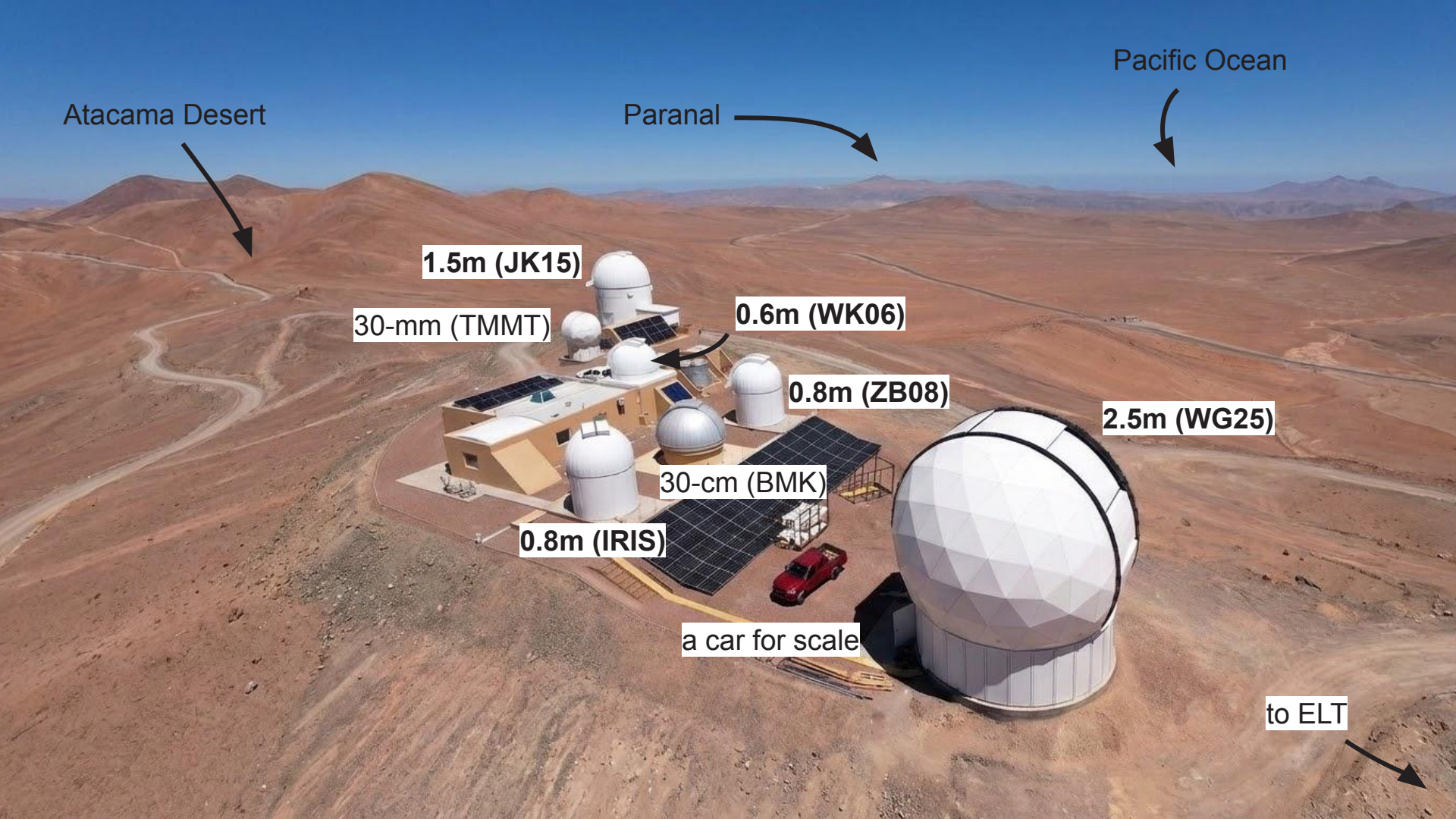
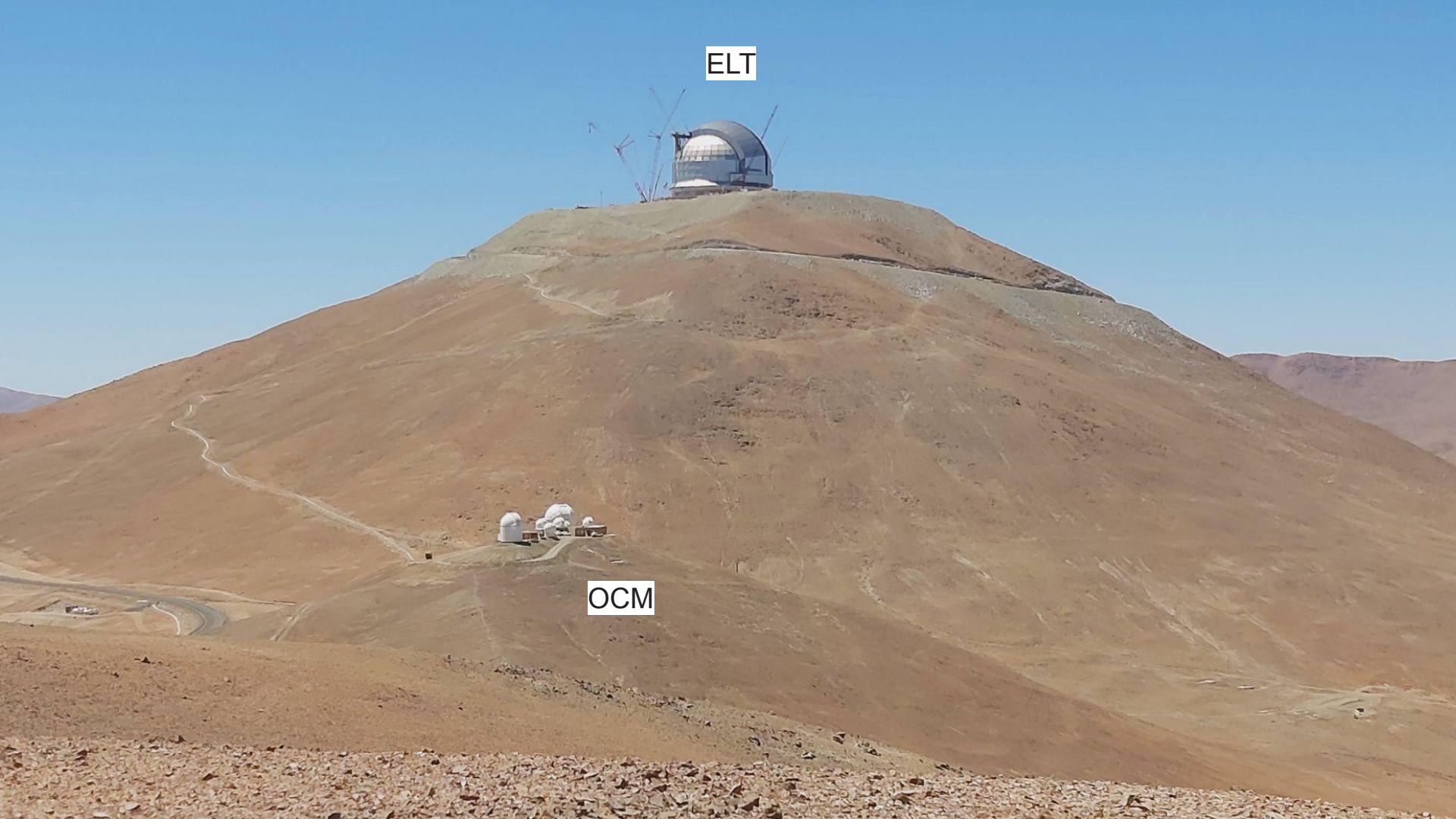
Observatory Cerro Murphy

Paulina Karczmarek

Young Astronomers Meeting
CAMK, 18–20 March 2026


Atacama Desert
Paranal
Pacific Ocean
1.5m (JK15)
30-mm (TMMT)
0.6m (WK06)
0.8m (ZB08)
2.5m (WG25)
30-cm (BMK)
0.8m (IRIS)
a car for scale
to ELT


ELT
OCM

Observatory Cerro Murphy (OCM)

Rolf Chini Cerro Murphy Observatory is an international astrophysical project, hosted in European Southern Observatory in Chile, operated by the Nicolaus Copernicus Astronomical Center of the Polish Academy of Sciences in Warsaw, Poland, and run by the Araucaria Project.

2005: established and operated jointly by the Ruhr University Bochum in Germany and the Catholic University of the North in Chile
2020: transferred to CAMK
2020–2023: renewed and expanded
28 November 2023: inauguration with the new name “OCM”

People

Principal Investigators
Grzegorz Pietrzyński
Rolf Chini

CAMK Directors
Rafał Moderski
Agata Różańska

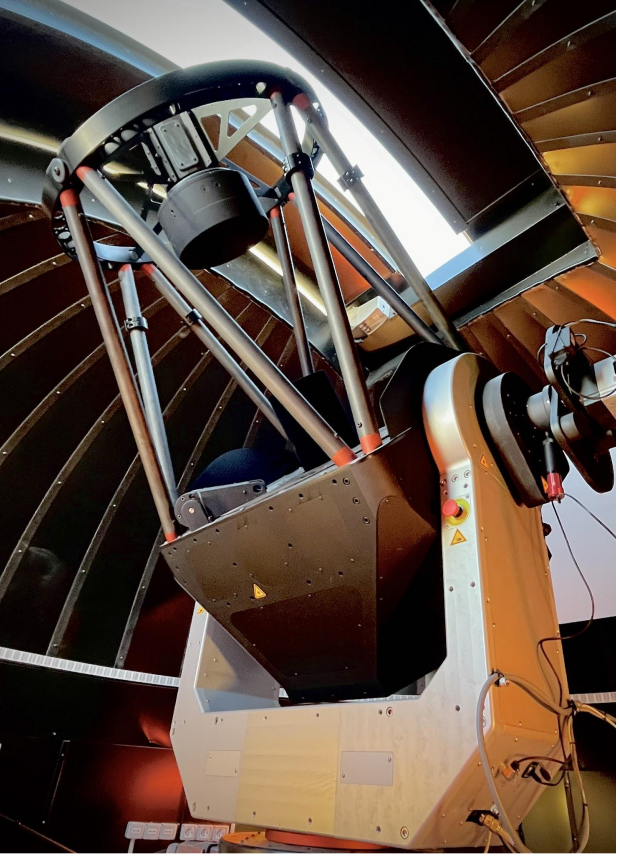
IT
Krzysztof Leszczyński
Artur Gawryszczak
Stanisław Miszczak
Przemysław Romaniuk

Administration
Iwona Kaźmierczak
Sylwia Karkut
Miguel Murphy
Monika Zuchniak
Małgorzata Penkala

Observers
Weronika Narloch
Piotr Wielgórski
Mirosław Kicia
Paulina Karczmarek
Gergely Hajdu
Mikołaj Kałuszyński
Marek Górski
Wojciech Pych
Cezary Gałan
Ricardo Salinas
…

Radosław Smolec
Henryka Netzel-Iłkiewicz
Piotr Żuk
Michał Radziwonowicz
Bartłomiej Zgirski
Karolina Bąkowska
Stefan Kimeswenger
Dawid Moździerski
Krzysztof Kotysz
Wilma Kiviaho
…

Technological partners
KiwiStar Optics (New Zealand)
Electro Optic Systems (Australia)
AstroSysteme Austria ASA (Austria)
Polish Investment and Trade Agency (Poland)
Innovametall GmbH (Austria)
Oxford Instruments (Great Britain)



Zbigniew “Zibi” Kołaczkowski **0.8m**
ZB08
Camera: 2k x 2k Andor iKon-L 936

Janusz Kałużny **1.5m** telescope
JK15
Camera: 4k x 4k Andor iKon-XL 230

Wojciech Krzemiński **0.6m**
WK06
Camera: 2k x 2k Andor iKon-L 936


Przemek Romaniuk

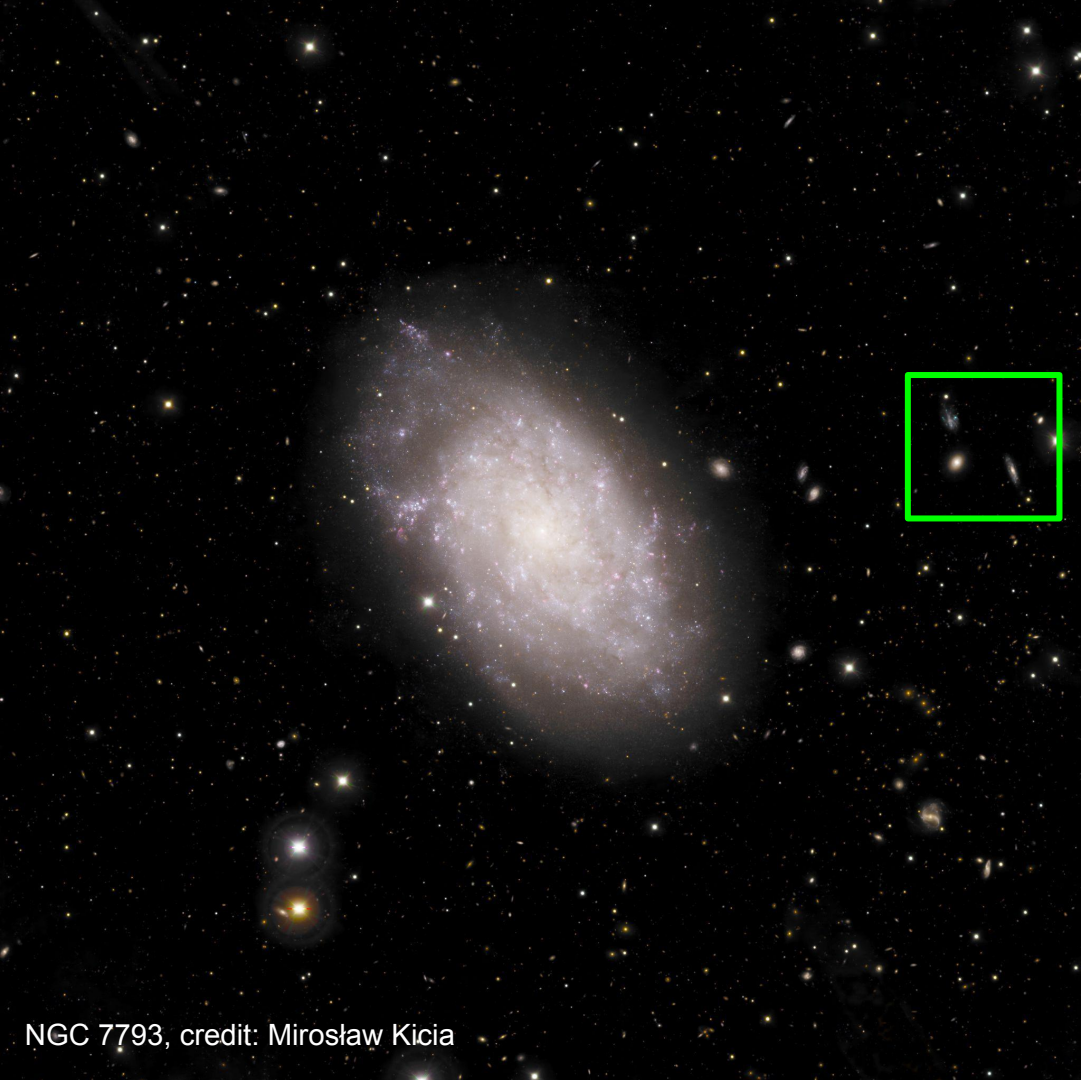

Wolfgang Promper


Bartek Zgirski


Wolfgang Promper


Wolfgang Promper


Wolfgang Promper

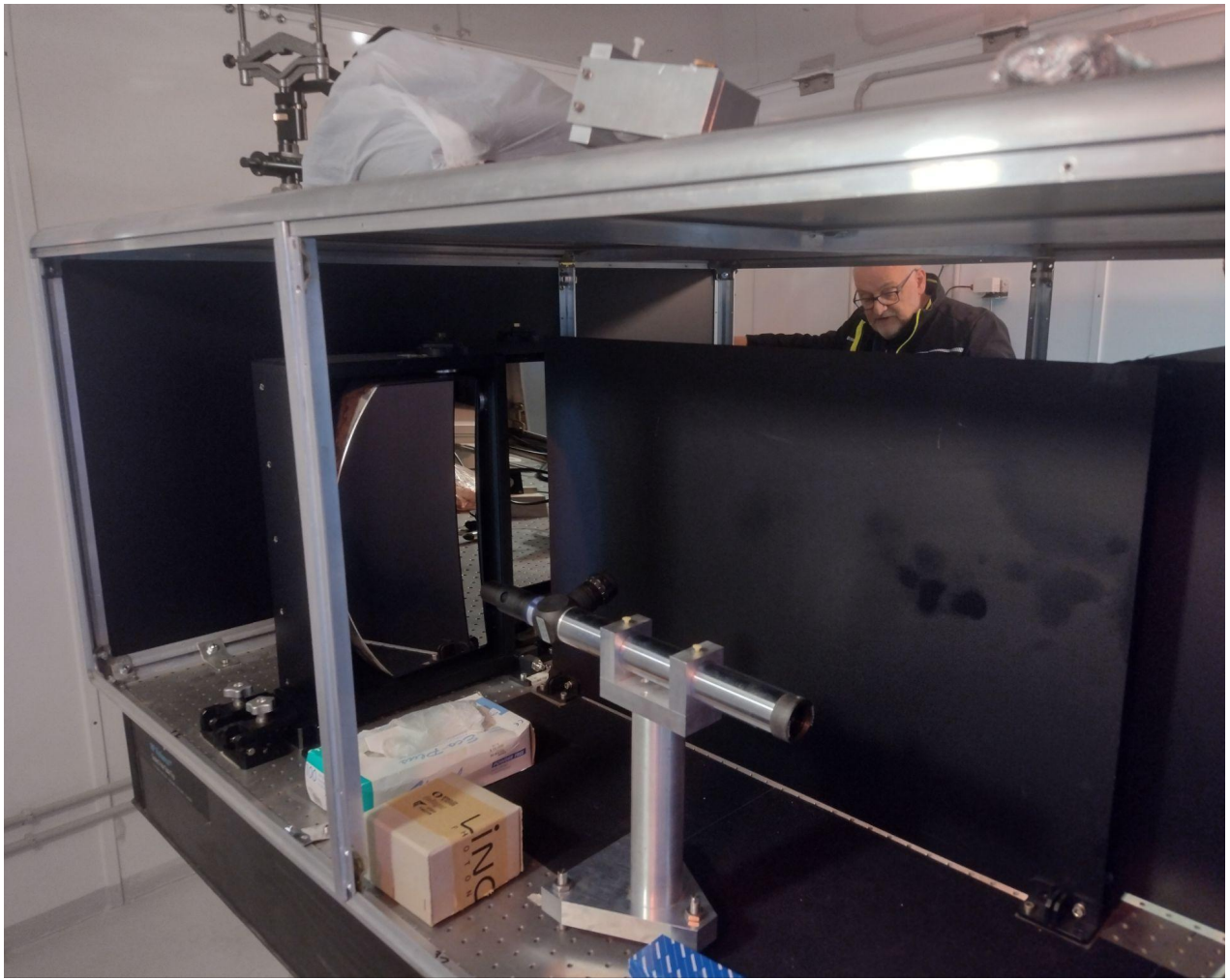


NGC 7793, credit: Mirosław Kicia

BESO

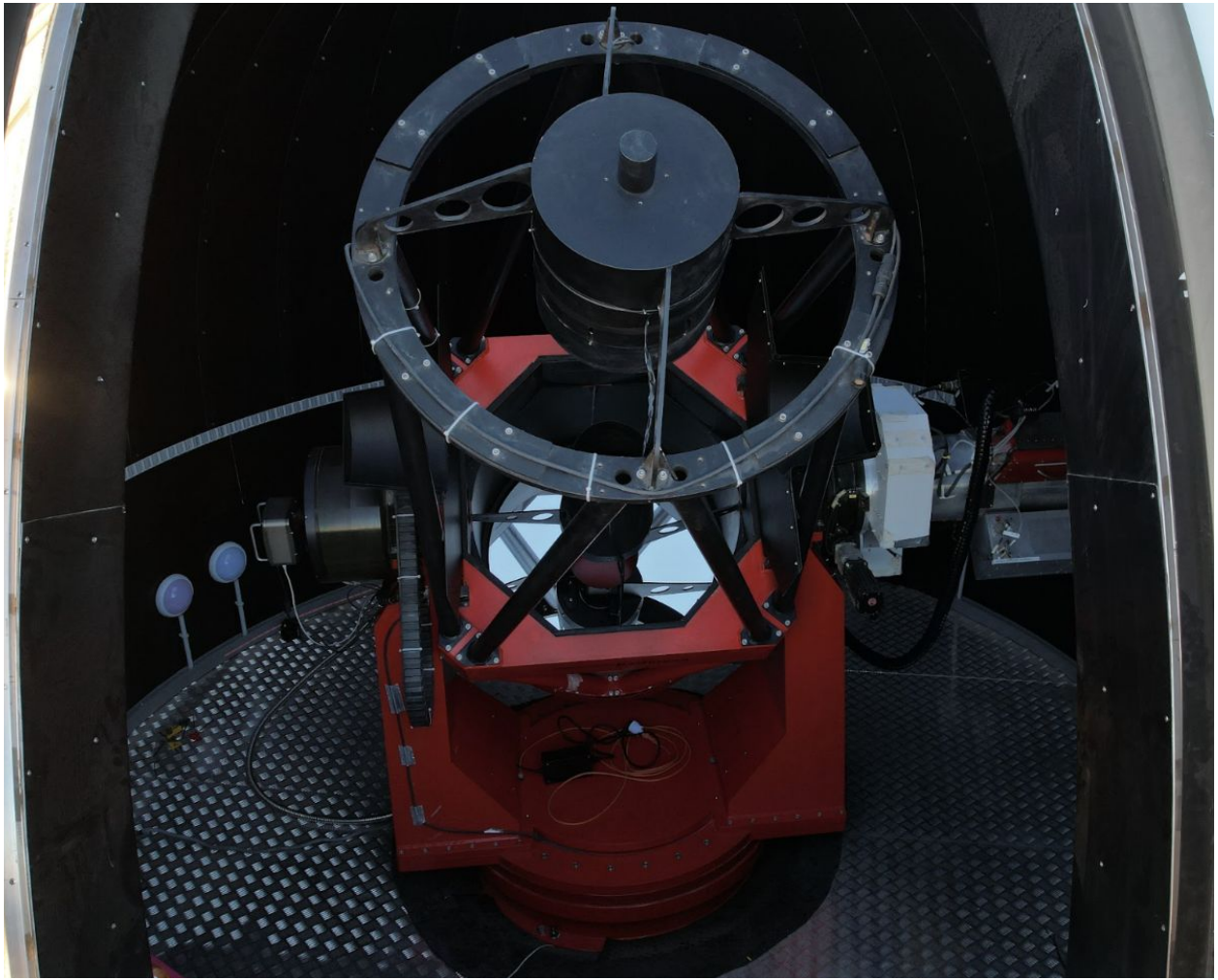
Bochum Echelle Spectrograph for OCA

resolution: **45000**
expected precision: **20 m/s**



IRIS (0.8m)
InfraRed Imaging System

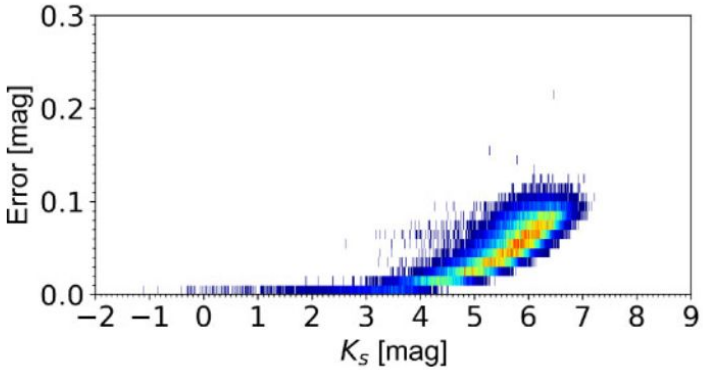
camera: 1k x 1k NIR
filters: J, H, K



TMMT = **T**hirty **M**illi**m**eter **T**elescope

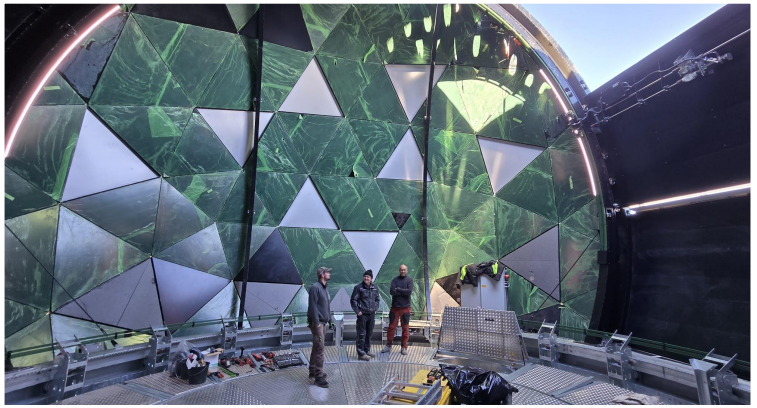
NIR/optical photometry
of bright stars (0–7 mag)

for comparison: 2MASS
saturation limit ~ 2 mag



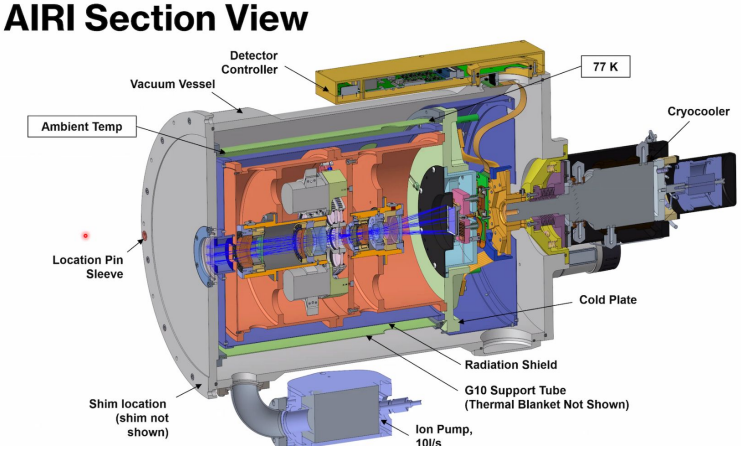
WG25 = **W**olfgang **G**ieren **2.5**-m telescope

- the largest Polish telescope
- dome construction completed
- telescope to be shipped in November 2026
- Hi-res spectrograph made by KiwiStar Optics
- AIRI (Araucaria Infrared Imager)



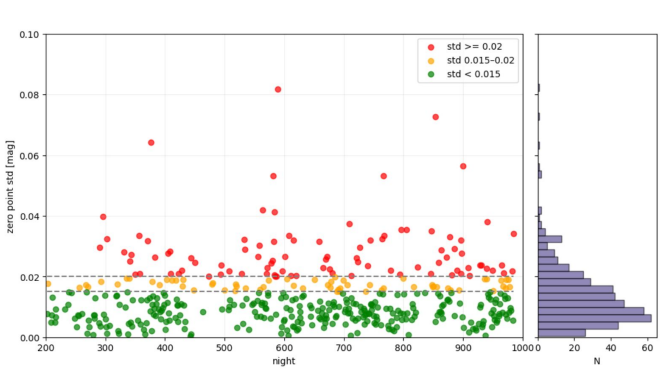
WG25 = **W**olfgang **G**ieren **2.5**-m telescope

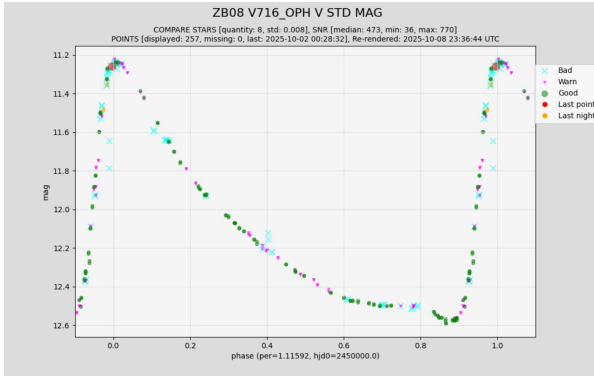
- the largest Polish telescope
- dome construction completed
- telescope to be shipped in November 2026
- Hi-res spectrograph made by KiwiStar Optics
- AIRI (Araucaria Infrared Imager)



Observations

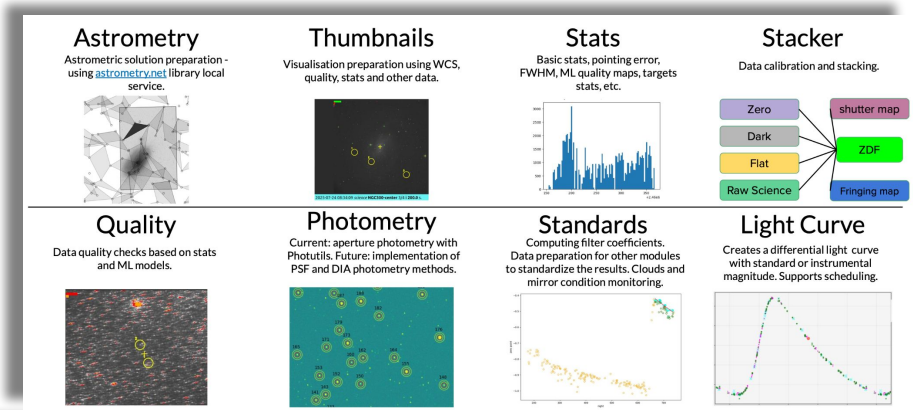
- 2 observers
- 3 weeks each
- 36 observing runs per year
- 21 scientific programs + CNTAC
- almost 10TB of data
- 46% of photometric nights

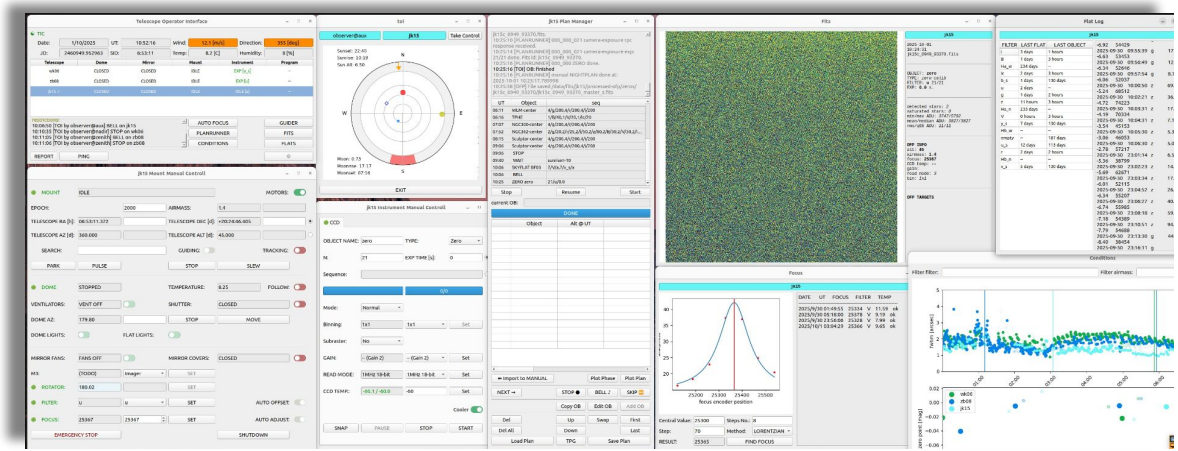


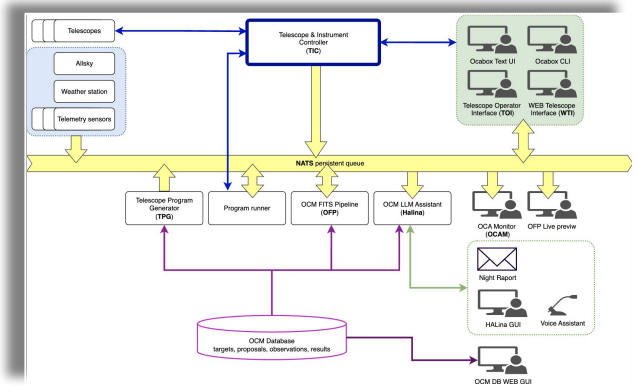


Dedicated software – telescope control, data quality

Awarded ERC Proof of Concept Grant (POC) 2025: “Toward Autonomous Observatories”







Scientific projects and publications

- Calibration of the Surface Brightness-Color Relation (SBCR) with eclipsing binaries for geometrical distance determination
- Pulsating stars in the solar neighbourhood for period-luminosity relations, light curve templates, Baade-Wesselink method, metallicity estimations
- Monitoring of globular clusters and nearby galaxies for variable stars
- Observing AGNs to establish their size for the determination of the Hubble constant
- and many more!

Outreach and education

- collaborations with artists: (e.g. K. Tretyn in 2025, a composer P. Scheller in 2027)
- competition for primary and secondary schools in Poland (planned for 2027)
- participation in Polish outreach events, e.g. Piknik Naukowy
- frequent occurrences in media (interviews, articles, social media)

“The silent Observatory” exhibition at SACO in Antofagasta, Chile, 2025

Join us!

- 2 Postdoc
- 1 PhD student
- 1 master student

- Summer practice for bachelor and master students
- Observational practice at OCM for CAMK’s PhD students

Join us!

- 2 Postdoc
- 1 PhD student
- 1 master student

- Summer practice for bachelor and master students
- Observational practice at OCM for CAMK's PhD students

Thank you! Questions?