6TH MEETING OF YOUNG ASTRONOMERS

6-8 March 2024

Organized by the Nicolaus Copernicus Astronomical Center of the Polish Academy of Sciences

Topics include:

- Stellar astrophysics
- High-energy astrophysics
- Compact objects
- Accretion processes
- Active Galaxies
- Cosmology
- Stellar mergers
- Dark matter
- Q+A sessions

REGISTRATION:

Moreover, we will tell you what it is like to be a PhD student!

PAN

Centrum Astronomiczne im. Mikołaja Kopernika Polskiej Akademii Nauk

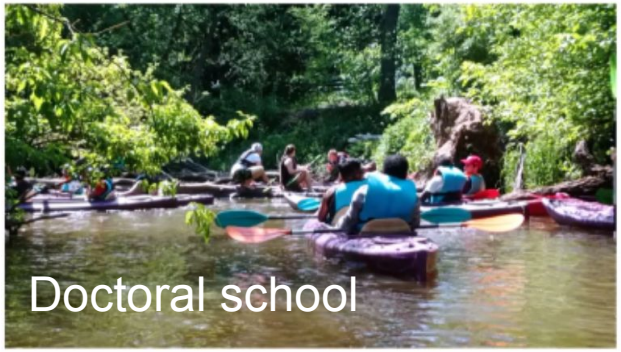
SCHOOL

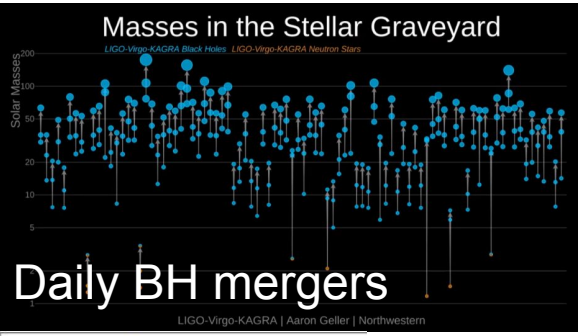
Conclusion

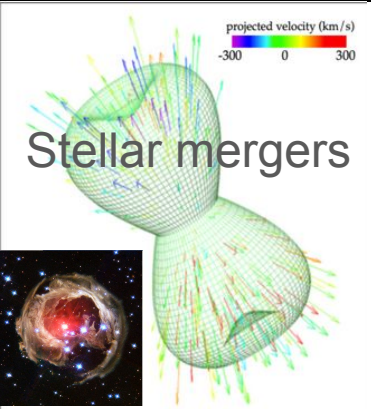
Oliwia Ziółkowska

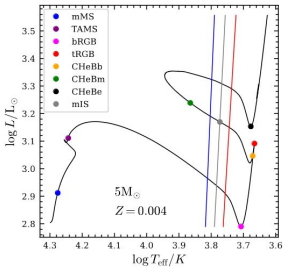
curiosity,
creativity,
persistence,
resilience

Integration, leisure activities, social life

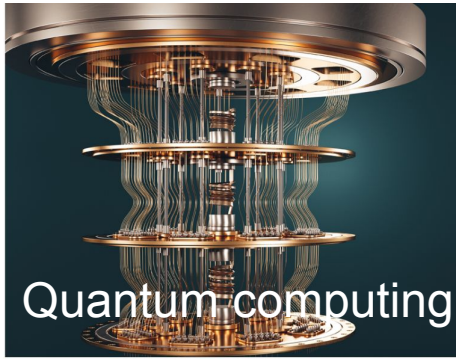


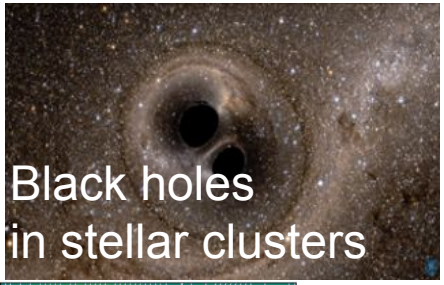


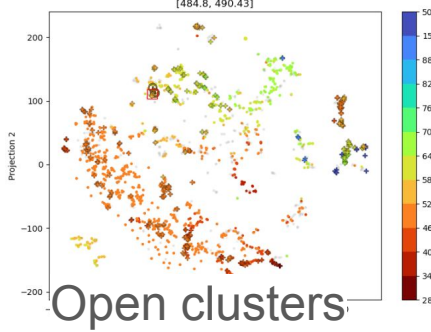


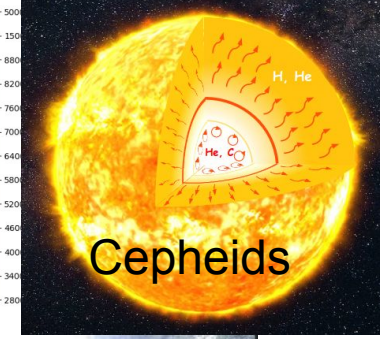


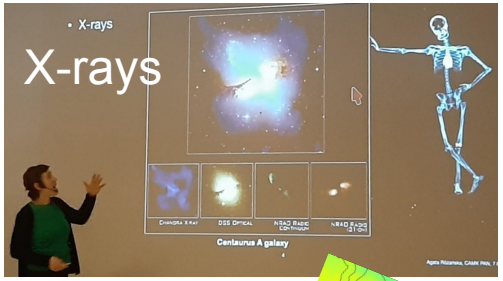
Stellar evolution

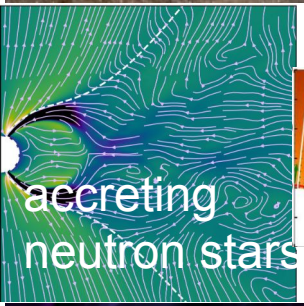


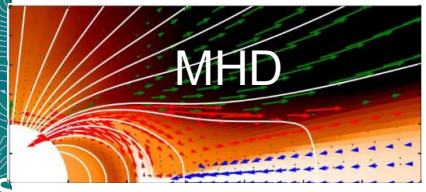


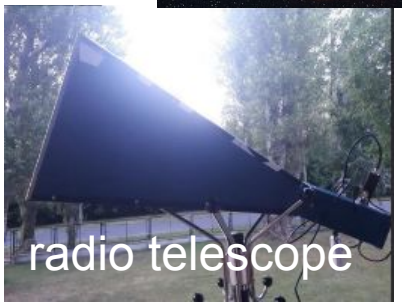


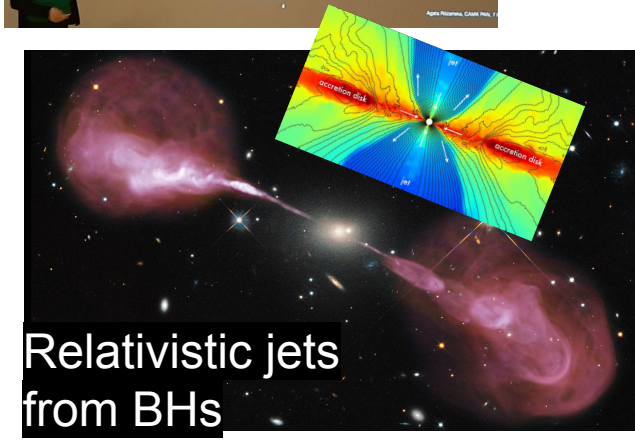


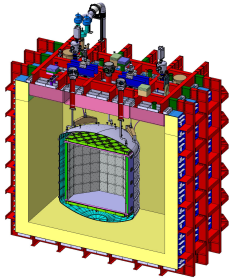


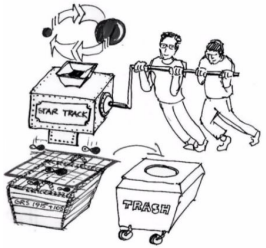




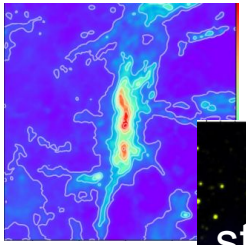


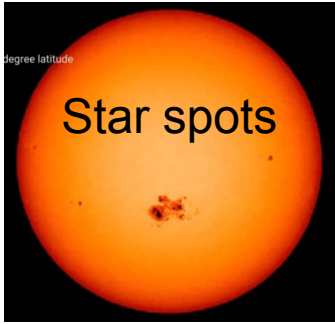


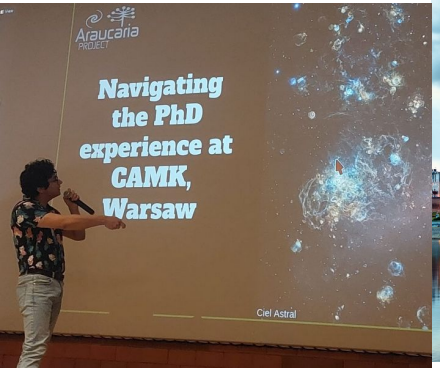

Dark matter
detectors



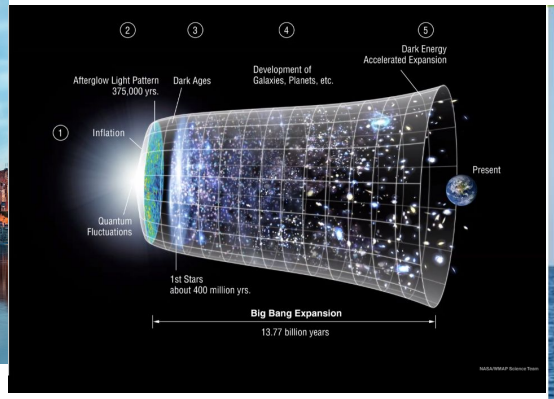
Prof. Belczyński &
STAR TRACK






Araucaria
PROJECT
Navigating the PhD experience at CAMK, Warsaw
Ciel Astral


Toruń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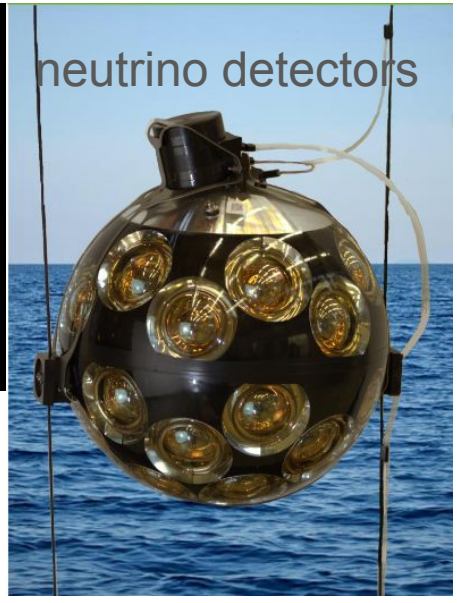
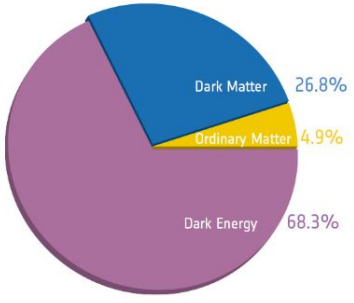
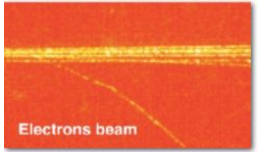
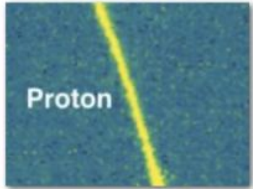
3
4
5
Dark Energy Accelerated Expansion
Afterglow Light Pattern 375,000 yrs.
Dark Ages
Development of Galaxies, Planets, etc.
1
Inflation
Present
Quantum Fluctuations
1st Stars about 400 million yrs.
Big Bang Expansion
13.77 billion years


neutrino detectors


Dark Matter
26.8%
Ordinary Matter
4.9%
Dark Energy
68.3%


Official IAAC Ambassador
Biswaraj Palit


Electrons beam


Proton


Prizes and Awards
1st Prize, Youth - $ 150
2nd Prize, Youth - $ 100
3rd Prize, Youth - $ 50
Prize, Junior - $ 150
Prize, Junior - $ 100
Prize, Junior - $ 50


AGN transient events

Apply for a PhD at CAMK until April 7th, 2024

5 PhD positions on our website

- Science with gravitational waves in the era of LIGO-Virgo-KAGRA Discoveries
  dr hab. Michał Bejger (**bejger@camk.edu.pl**) and dr hab. Brynmor Haskell (**bhaskell@camk.edu.pl**)
- Novel detector concepts for future Dark Matter experiments
  dr André Cortez (**acortez@camk.edu.pl**) and dr hab. Marcin Kuźniak (**mkuzniak@camk.edu.pl**)
- Astroparticle physics with neutrinos (and/or muons)
  dr Piotr Kalaczyński (**pkalaczynski@camk.edu.pl**), dr hab. Piotr Gawron (**gawron@camk.edu.pl**) or dr hab. Artur Ukleja (**artur.ukleja@ncbj.gov.pl**)
- High energy astrophysics
  Prof. dr hab. Włodzimierz Kluźniak (contact: **wlodek@camk.edu.pl**)
- Numerical simulations of relativistic jets from black holes
  dr hab. Krzysztof Nalewajko (contact: **knalew@camk.edu.pl**)

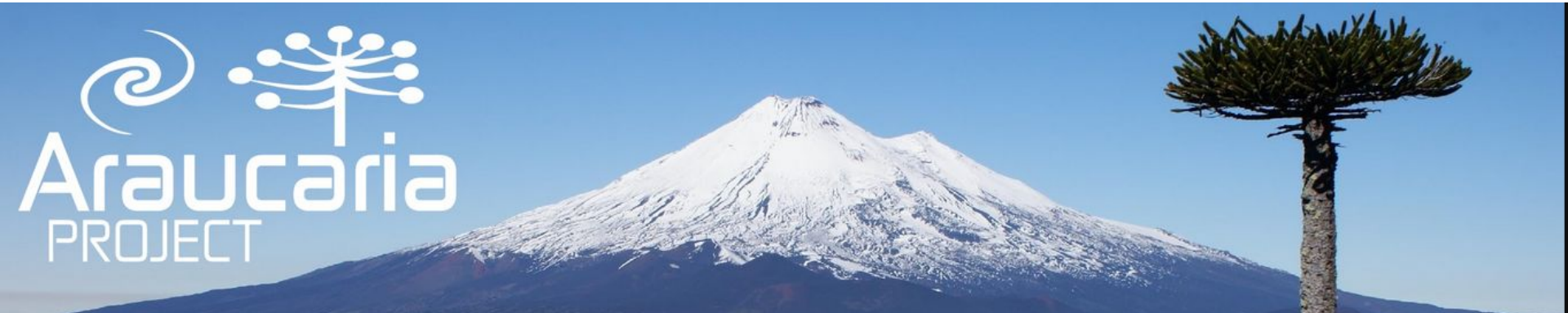
camk.edu.pl

Soon to be announced…

- 1 PhD position in tRGB and JAGB stars
- 2 positions for data managers

prof. Grzegorz Pietrzyński (**pietrzyn@camk.edu.pl**)

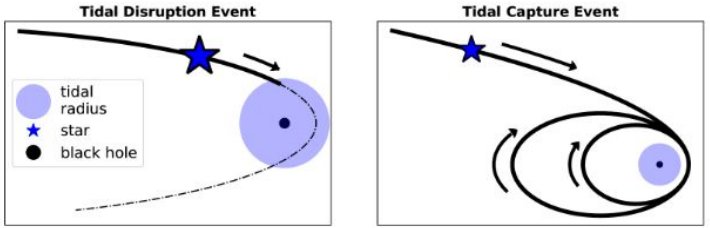
araucaria.camk.edu.pl



Summer Student Projects (3 months)

- **Project 1:** ***Tidal disruption events from massive stellar BHs and IMBHs in dense star clusters*** (July to September 2024, flexible)
  - Analyze the next generation of simulated MOCCA star cluster models to identify tidal disruption events/capture events
  - Estimate the rate and properties of such events
  - Relevant for transient sky surveys
- **Project 2:** ***Identifying observable properties of star clusters that could potentially be hosting IMBHs*** (Summer 2025)
  - Use simulated MOCCA star cluster models to identify observational signatures for the presence of an IMBH:
    - Mass segregation of stars
    - Distribution of binary systems and pulsars

BH GROWTH
Growing Black Holes in Star Clusters



Rizzuto et al. (2023)

If interested in these or other projects connected to star clusters, black holes, gravitational waves then please contact me: askar@camk.edu.pl

Summer practice with Miljenko Čemeljić

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Summer students in our group

- I worked with more than 20 Summer students during the last almost two descades in Taipei and Warsaw.
- Projects were mostly based on a work with PLUTO code, to give the starting experience in MHD numerical simulations. Some former projects with PLUTO:
  – magnetospheric star-disk interaction with non-dipolar stellar magnetic fields
  – thin accretion disk around a black hole
  – star-planet magnetospheric interaction, auroras on exoplanets
- I made a point in publishing the research with Summer students, as their first publication. When possible, we send them to a conference to present results and publish in Proceedings publications-as first authors.

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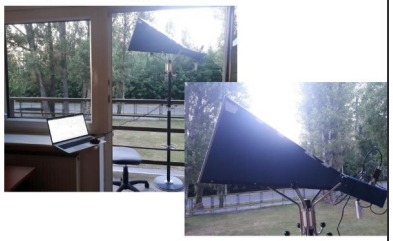
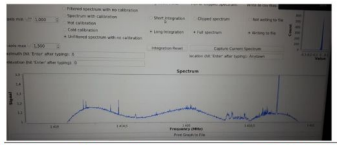
CAMK small radio telescope

Software defined radio (SDR) revived amateur radio astronomy.

- A good learning device, perfect public engagement tool, good for student projects.
- In CAMK, I started the initiative to build and operate a small radio telescope.
- The first result is here, from CAMK workshop. Learning potential is infinite.

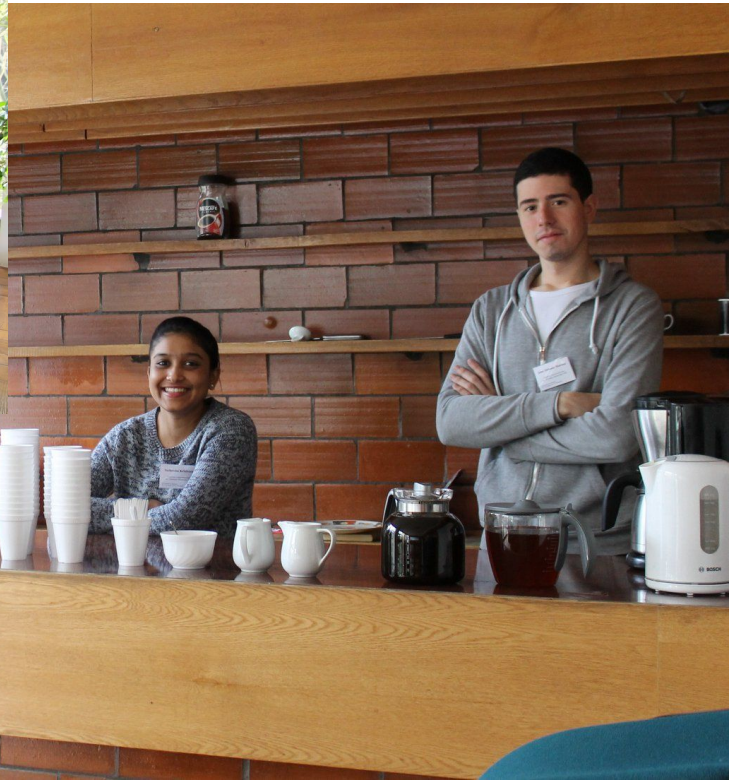
Students are welcome!





miki@camk.edu.pl

III Spotkanie Młodych



3rd Meeting in 2018

See you at the 7th Young Astronomers Meeting in CAMK!
2026

Special thanks to:

Sergen Ozdemir

Angelika Sobolewska
Katarzyna Malinowska
Katarzyna Trwoga
Dorota Śliwa

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Sergen Ozdemir

Angelika Sobolewska
Katarzyna Malinowska
Katarzyna Trwoga
Dorota Śliwa

… and **Oleh Ryzhov** the most active participant!