



CTAO

Cherenkov Telescope Array Observatory

Cherenkov Telescope Array Observatory - status and prospects

Jacek Niemiec for the CTAO-PL

Institute of Nuclear Physics Polish Academy of Sciences, Kraków

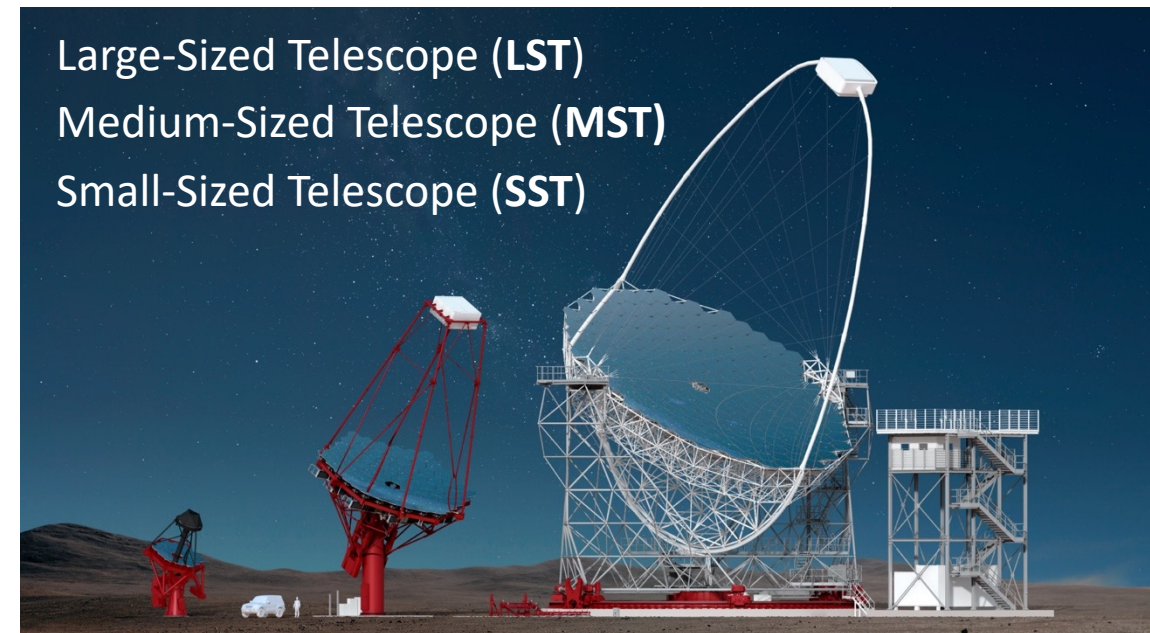
jacek.niemiec@ifj.edu.pl

CTAO-PL: UJ, IFJ PAN, CAMK PAN, UŁ, UW, UwB, ACK Cyfronet AGH, UMK, NCBJ,
UZ, CBK PAN, AGH, PW

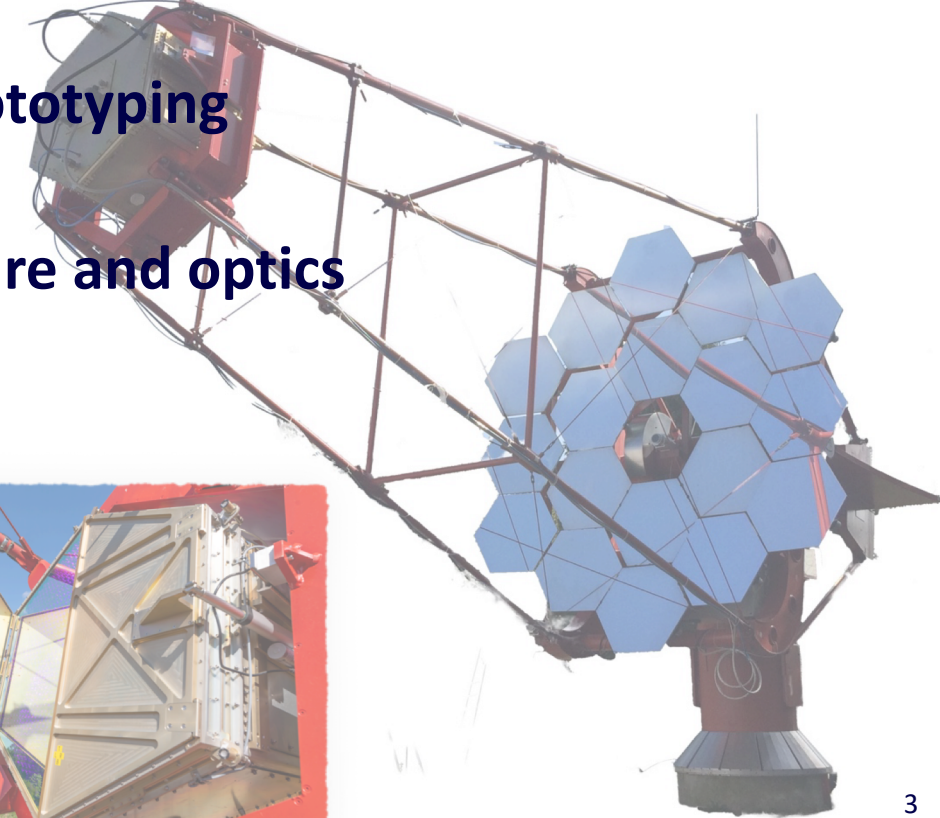
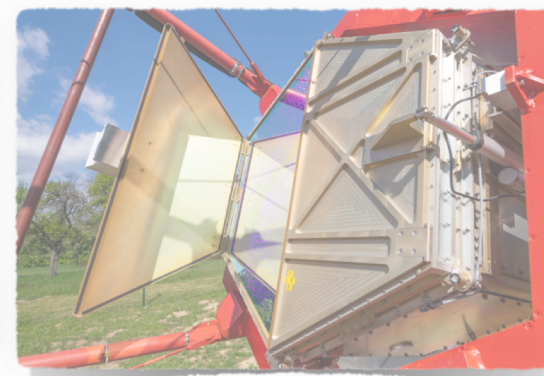
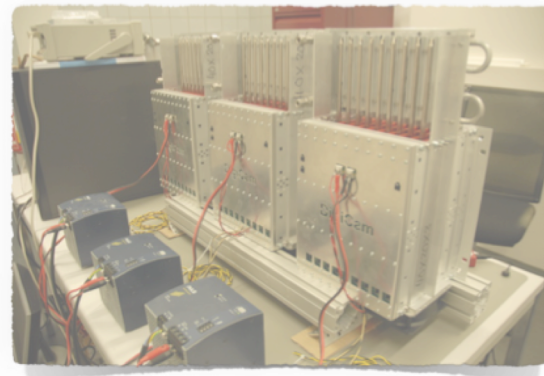
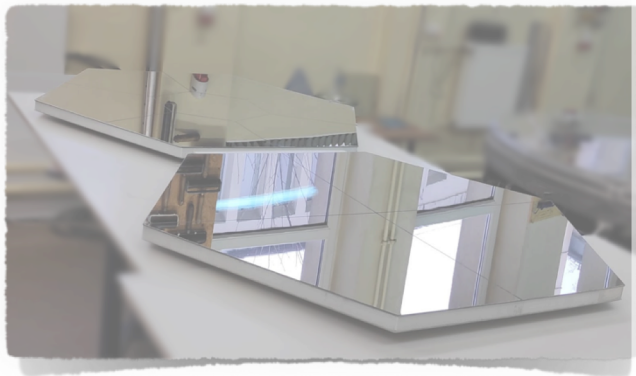
- **Largest** ground-based **very-high energy gamma-ray** observatory in the world; over **60 telescopes** in **two telescope array sites (La Palma and Chile)**.
- Unparalleled **accuracy and sensitivity** in **broad energy range** (20 GeV – 300 TeV).
- Main science themes:
 - Understanding the origin of cosmic particles.
 - Probing extreme environments: cosmic explosions, black holes, neutron stars...
 - Exploring frontiers of physics – searching for dark matter and deviations from the theory of relativity.



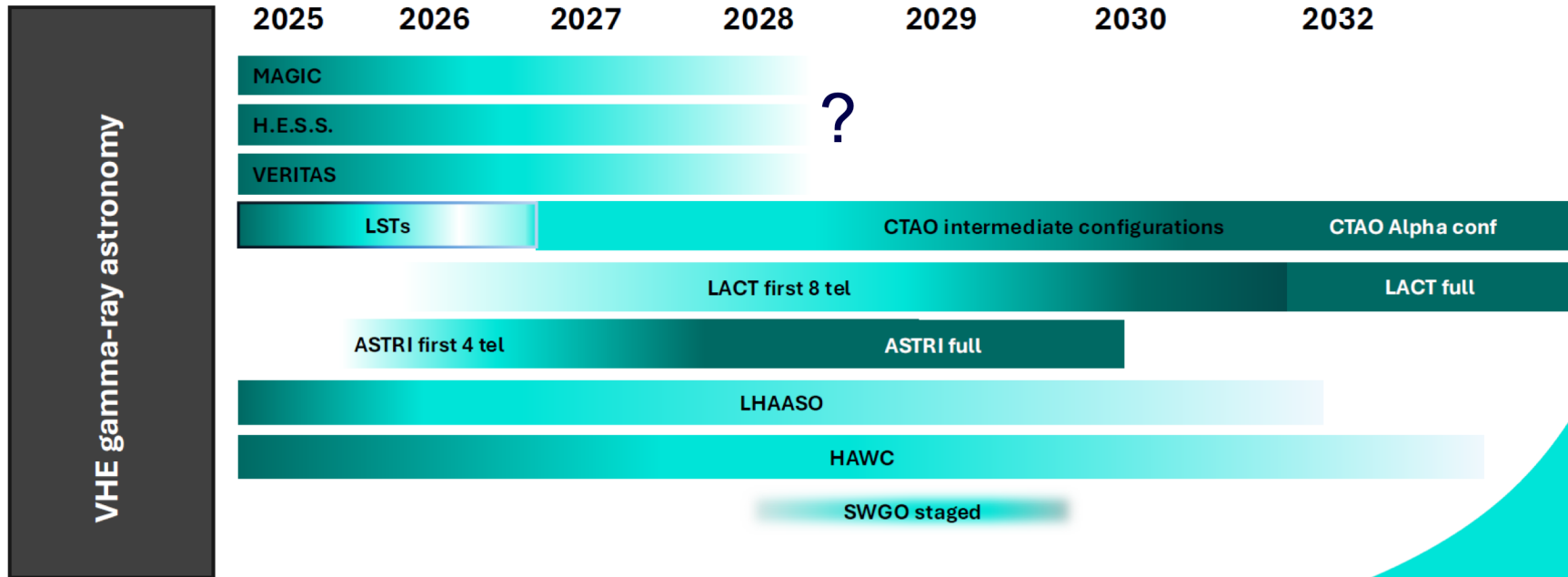
www.ctao.org



- **CTAO Consortium** established in 2008 – about **1500** members from **25** countries.
- On the **ESFRI** roadmap since 2008; promoted to a “**Landmark**” in 2018. **ASTRONET** Roadmap 2022-2035. **Polish** Roadmap since 2011.
- **CTAO** becomes an **ERIC** on **January 7, 2025**.
- **Poland** is one of the **nine** founding members of the **CTAO ERIC**.
- **Significant Polish contributions** to **instrumentation prototyping** and **software development**.
- Planned in-kind contributions to **MST telescope structure and optics** and **array control and data acquisition software**.



- **CTAO North – La Palma, Spain**
 - LSTN 1-4 construction and commissioning: 2023-2026
 - MSTN 1 construction and commissioning: 2025-2027
- **CTAO South – ESO, Paranal, Chile**
 - Infrastructure construction: 2025-2026 to host first telescopes
 - MSTs 1-2 construction and commissioning: 2025-2026
 - SST 1-5 construction and commissioning: 2026-..
 - LSTS 1-2 construction and commissioning: 2024-2027



CTAO Alpha Configuration

- **CTAO N – 4 LST + 9 MST**
- **CTAO S – 14 MST + 37 SST (+2 LST + 5 SST)**