

WP18 - Time-Domain Astronomy Central Coordination System

Łukasz Wyrzykowski
(University of Warsaw, Poland)



LW@ASTROUW.EDU.PL



Objectives

- **Coordinate** the European-based activities in multi-wavelength time-domain astronomy which deliver Virtual Access to a suite of small- and medium-sized optical and infrared telescopes.
- **Maintain** the central operations management system for coordination of the network of telescopes to facilitate rapid response to transient events and to provide an opportunity for long-term monitoring of interesting astrophysical phenomena with a wide range of multi-wavelength instruments.
- **Process, calibrate** and **archive** the observations obtained. Provide rapid-response virtual access to the science-ready data.
- **Expand** the virtual access delivered with additional facilities in the time-domain network, primarily robotic and autonomous telescopes from around the globe, and integrate them into the central operational system, utilising and maintaining developments from JA2.2.
- **Provide** and facilitate access to the time-domain data gathered by the multi-wavelength network, **maintain** the database and implement its functionalities for easy access for the community.

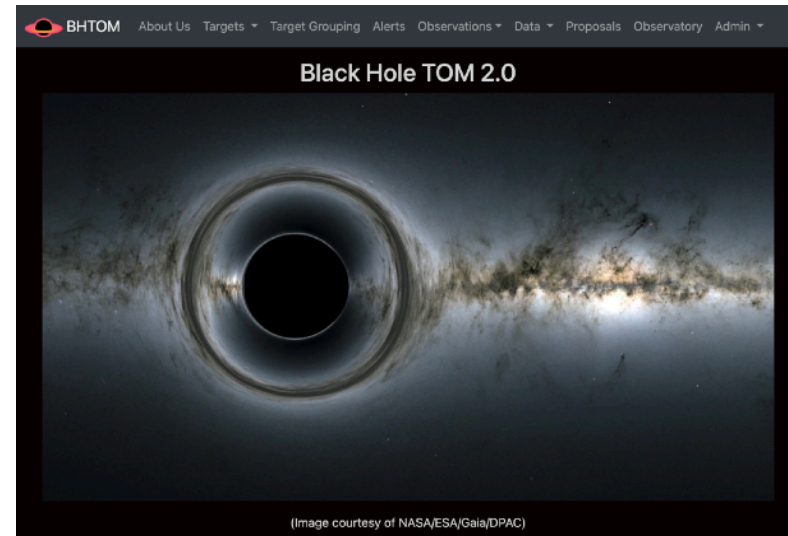
Outcome

BLACK HOLE TARGET AND OBSERVATION MANAGER (BHTOM)



<https://bhtom.space>

- ▶ web tool for coordination of time-domain observations
- ▶ automated observation requests
- ▶ processing of raw images from heterogenous units
- ▶ automated standardisation
- ▶ archival multi-wavelength time-domain photometry
- ▶ 450 users registered
- ▶ ~10,000 observations processed every week
- ▶ 20+ papers published



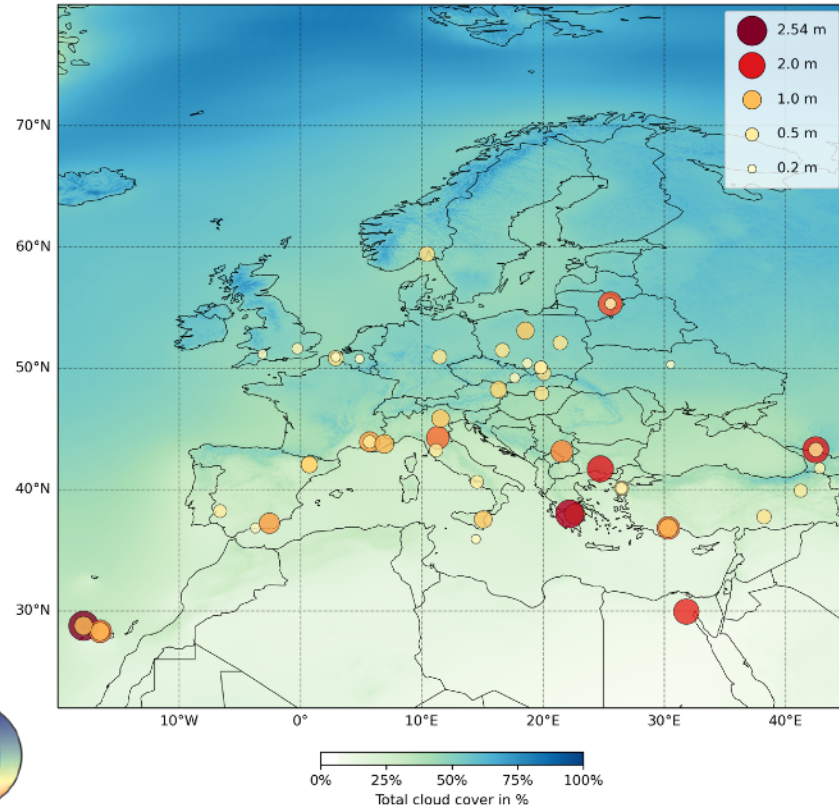
Outcome

TELESCOPE NETWORK



<https://bhtom.space>

- ▶ ~130 telescopes and growing
- ▶ sizes 0.25 - 2.5 m
- ▶ manual
- ▶ robotic
- ▶ with good weather
- ▶ with poor weather
- ▶ professional
- ▶ amateur, outreach, schools
- ▶ Network now in the OPTICON Alliance



Workshops for the network



ARCHIVAL RECORDINGS: [HTTPS://GSAWG.WIKI.AST.CAM.AC.UK](https://gsawg.wiki.ast.cam.ac.uk)



Outcome

EUROPEAN ASTRONOMICAL SOCIETY OF SMALL TELESCOPES (EASST)

<https://easst.eu>

- ▶ Advancing Citizen Science with the use of small telescopes (with BHTOM as the core tool)
- ▶ Outreach activities, local and global
- ▶ Connecting astronomers, professionals and amateur, through regional Ambassadors
- ▶ Expanding the telescope network beyond science, to outreach and space industry
- ▶ Enhancing telescope technology
- ▶ Protecting dark skies



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6

Extra slides

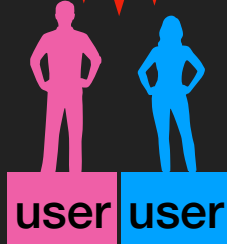
Surveys

Gaia
ZTF
LSST
IceCube
GW



Alerts

Brokers



Observing
requests



bhtom.space

