The CHEOPS Guest Observers Programme

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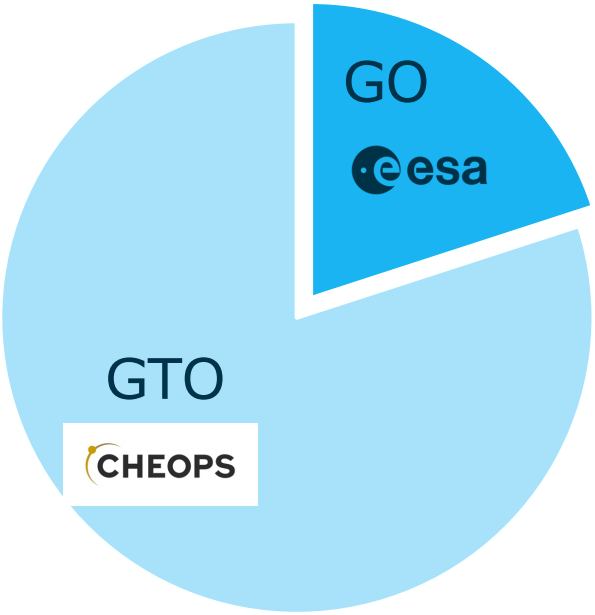
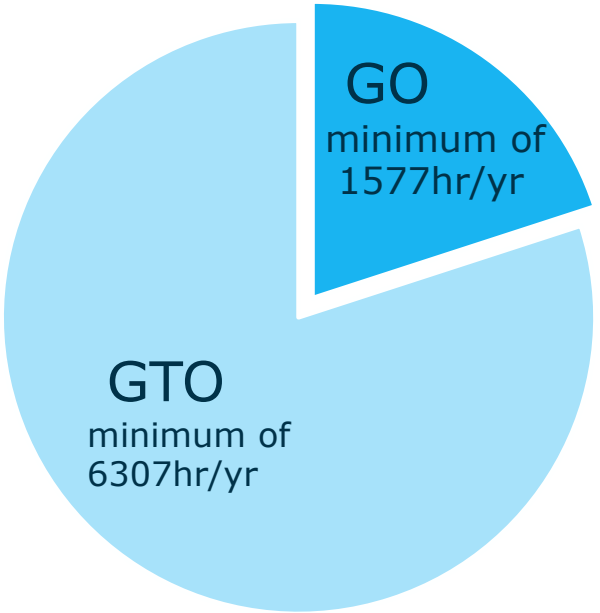
Observing time on CHEOPS

- Up to 10% of CHEOPS time top-sliced for:
  - Spacecraft/instrument-related activities
  - CHEOPS Monitoring & Characterisation Programme, monitoring all aspects of CHEOPS instrument performance
- Remaining 90% - science time (minimum 7884 hr/yr, ~4780 orbits)
- Split 80:20 between the Guaranteed Time Observing (GTO) Programme (CHEOPS Consortium Science Team) and the CHEOPS Guest Observers (GO) Programme



Guest Observers (GO) Programme

- ESA-run Programme to enable Community access to CHEOPS
- Open to the world-wide community, regardless of nationality/affiliation
- Any science possible - (non) time-critical
- Selection of proposals based on scientific merit and the applicability of CHEOPS to the proposed science
- Time split min 75%: up to 25% between Annual Announcements of Opportunity (AOs) and a Discretionary Programme (DP)



Applying for observing time

Two-step process:

- Phase I input via an (PHT1). Includes:
  - Proposer information, abstract and target list
  - Science justification (pdf)
  - Technical justification (pdf)
  - Check of reserved target list and archive (pdf)
  - ETC results (pdf)

- Phase II input (PHT2) – detailed observing plan (observation requests)
  - Completed by PIs of successful proposals only

List of tools/documents/webpages detailed in the appendix

Registration

- Register as a Guest Observer

https://www.cosmos.esa.int/web/cheops-guest-observers-programme/register/

Required:

- for proposal submission
- to download the scheduling feasibility checker tool

AOs - I

- Proposals submitted to ESA via a dedicated proposal handling tool (PHT1)
- Evaluation by an independent, ESA-appointed Time Allocation Committee comprising European scientists
- Proposals ranked on scientific merit and assigned a priority between 1 (highest) -3 (lowest)
    - More time awarded than available to ensure efficient scheduling
- Recommendations for proposals to be awarded observing time put forward to the Director of the Science Directorate

AOs - II

- Two AOs to-date:
  - AO-1: Call March 2019 for Year 1 starting end March 2020

https://www.cosmos.esa.int/web/cheops-guest-observers-programme/ao-1/

  - AO-2: Call November 2020 for Year 2 starting end March 2021

https://www.cosmos.esa.int/web/cheops-guest-observers-programme/ao-2/

- Observing programmes awarded time can be found at:

https://www.cosmos.esa.int/web/cheops-guest-observers-programme/ao-1-programmes and equivalent for ao-2

→ Programme significantly underutilised: time allocated < time available

AO-3

- AO-3, the final AO for the nominal mission, to come out 15 February 2022
- Covers the observing period between very end of June 2022 – end September 2023 (min. 1180 orbits total of GO time, including DP)
- Webpage dedicated to the Call available at:
  https://www.cosmos.esa.int/web/cheops-guest-observers-programme/ao-3/
    - Currently contains material/links to tools to aid in proposal preparation
    - Will include Policies and Procedures (guidelines + instructions for the Call) + links to tools, proposal handling tool and documentation
- All relevant links given at the end of this presentation

Timeline for AO-3

Date/duration of AO step	Comment
15 February 2022	AO-3 opens Webpage for the Call goes “live”, including Policies and Procedures document Phase I Proposal Handling Tool can be used Reserved Target List is available
15 March 022. (midday GMT)	AO-3 closes
Mid-May 2022	Time Allocation Committee meets List of proposals to be awarded time (priority 1/2/3) put forward to Director of Science
No later than 25 May 2022	Results of AO-3 are announced – PIs of all submitted programmes are informed of the status of their proposals
1 June 2022 (start)	Preparation of Phase II inputs. Steps include submission of observation requests (by 14 June), ESA/SOC review (by 21 June) and update (by 24 June)
Very end of June 2022	Start of observations from AO-3 programmes

All details of the Call will be available at:
https://www.cosmos.esa.int/web/cheops-guest-observers-programme/ao-3/

Proposal and target constraints

Parameter	Comments
Duration of a single observation (1 orbit ~ 99 minutes)	Min: 5 orbits to enable efficient detrending of lightcurves Max: 100 orbits/ ~1 week). Longer possible by concatenation
Total time requested in a single proposal	No limit on the maximum number of orbits that can be requested
Solar System objects	CHEOPS does not support nonsidereal tracking. It is possible to use static coordinates (RA, Dec), however observations become highly time-critical/very challenging to schedule
Simultaneous observations with other facilities	Challenging due to planning constraints, however can be considered in exceptional cases.
Targets on the reserved target list	Currently may not be included in proposals.
Targets for which data exists in the mission archive	Contact cheops-support@cosmos.esa.int to request further information on what has been done.

->All constraints will be the Policies and Procedures document for the Call <-

Discretionary Programme

- Proposals can be submitted at any time
- Proposal components largely the same as for AO, except:
  - Single target only, discovered or declared to be of high scientific interest since the time the most recent call closed

  → High interest target requirement waived for PhD student/early career researcher (up to 2 yrs since award of PhD)-led proposals
- Proposal evaluated by ESA project scientist + TAC chair
- Turnaround can be as short as few days
- Potential to be observed within 2-3 weeks of proposal being submitted

See https://www.cosmos.esa.int/web/cheops-guest-observers-programme/discretionary-programme for details of the Call

** AO-3 opens 15 February 2022 **

** Discretionary Programme open year-round**

** See useful links to webpages/documents in next slides **

Questions: email kate.isaak@esa.int and/or cheops-ps@cosmos.esa.int

List of useful webpages

Webpages:

- CHEOPS for scientists – ESA website
  https://cosmos.esa.int/web/cheops/
- CHEOPS Mission Consortium website
  https://cheops.unibe.ch/
- CHEOPS mission archive
  https://cheops.unige.ch/archive_browser/
- CHEOPS in the Literature
  https://www.cosmos.esa.int/web/cheops/cheops-in-the-literature/
- CHEOPS data
  https://www.cosmos.esa.int/web/cheops-guest-observers-programme/cheops-data/
- CHEOPS Guest Observers Programme
  https://www.cosmos.esa.int/web/cheops-guest-observers-programme/
- CHEOPS AO-3
  https://www.cosmos.esa.int/web/cheops-guest-observers-programme/ao-3/
- CHEOPS Discretionary Programme
  https://www.cosmos.esa.int/web/cheops-guest-observers-programme/discretionary-programme/
- CHEOPS Guaranteed Time Programme
  https://www.cosmos.esa.int/web/cheops/the-cheops-guaranteed-time-observing-programme/

List of useful tools/manuals

Tools/manuals:

- CHEOPS Observers Manual

  https://www.cosmos.esa.int/web/cheops-guest-observers-programme/cheops-observers-manual/

- Reserved target list checker

  https://cheops.unige.ch/pht2/search-reserved-targets/

- Exposure Time Calculator (ETC)

  https://cheops.unige.ch/pht2/exposure-time-calculator/

- Scheduling Feasibility Checker

  https://www.cosmos.esa.int/web/cheops-guest-observers-programme/scheduling-feasibility-checker/

User-contributed tools/aids ("as-is"/no support):

- PYCHEOPS - python package for analysis of CHEOPS light curves

  https://pypi.org/project/pycheops/

- CHEOPSim (CHEOPS simulator)
  - Detailed in a paper by Futyan et al. https://doi.org/10.1051/0004-6361/201936616/
  - Source code, installation instructions and documentation: https://github.com/davefutyan/CHEOPSim/

- Linea – linear detrending package (python) for analysing CHEOPS observations

  https://linea.readthedocs.io/en/latest/

Annual Call vs. Discretionary Programme

	Annual Call (AO)	Discretionary Programme
% of GO time	minimum 75%	Up to 25%
When to submit	Once per year	All year round
What to submit	Full proposal	Full proposal
Max. # orbits	No maximum	Guideline
Target constraints	Not on reserved target list	Not on reserved target list. Single target. Discovered/deemed to be of high scientific interest since last AO. Waiver on target type for PhD/early career researcher-led proposals
Eligibility	Open to all	Open to all