e-ASTROGAM Schedule

- Apr 2016: Release of ESA Call for M5 mission
- Jun 2016: Letter of Intend submitted
- **Oct 2016: Proposal submitted**
- Feb 2017: Endorsement from national agencies
- **Jun 2017: Selection on technical and programmatic feasibility criteria** (13 missions downselected)
- Oct 20th: 11 written questions from ESA's M5 Science Assessment Review Panel (SARP-M5)
- Oct 30th: Answer to the questions from SARP-M5
- Nov 3rd: Publication of the 1st draft of the White Book: Science with e-ASTROGAM (arXiv:1711.01265)
- Nov 7th: Interview at ESTEC (ADA, LH, VT) by SARP-M5 and SSC-M5
- Dec 22th: Submission of the final draft of the White Book
- **Dec 2017: Selection of maximum 3 missions for study**
- May 2018(?): Phase 0 completed
- Jun 2018(?): Phase A kick-off
- May 2020(?): Mission selection (launch in 2029-2030)

Science with e-ASTROGAM

A space mission for MeV-GeV gamma-ray astrophysics

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224 authors
194 pages

e-ASTROGAM Collaboration

> 400 collaborators from institutions in 24 countries

e-ASTROGAM SARP-M5 Questions (1)

Q1. ... Provide detailed comparisons of e-ASTROGAM's performance against other missions for **three or four science use cases**. ...

=> (1) High-redshift MeV blazars, (2) Most energetic pulsars, (3) Cosmic rays in the Galactic center, (4) First source of multi-messenger astronomy: GW170817

Q2. ... Provide more details on the **background**. How would a slight loss in efficiency of the anti-coincidence detector at the beginning of the mission affect the science return? ...

=> **Further discussed during the interview at ESTEC**

Q3. ... Provide estimates of the initial **calibration** accuracy and the likely end-of-life calibration accuracy, and how **instrument ageing** will affect science cases over the mission. ...

Q4. ... **Complex detectors**, calorimeter in particular. Since calibration and assembly may be tricky, please provide some commentary about the impact on the mission of the **loss of (say) 50% of the calorimeter**. ...

=> Instrument development

Q5. ... **Management** processes to ensure timely instrument development (35+ institutes in 9+ nations). ...

e-ASTROGAM SARP-M5 Questions (2)

Q6. ... Provide an assessment of the number of targets of different kinds for which good **polarization** data are expected. ...

=> More than 360 sources including ~ 300 GRBs

=> **Further discussed during the interview at ESTEC**

Q7. ... How will **neutrino and gravitational wave triggers** be dealt with by e-ASTROGAM? Are specific programme interrupts planned or are γ-ray counter-parts only to be sought via serendipitous detections?...

Q8. ... Please provide more details on how e-ASTROGAM detected **GRB (and other transient) follow-up** would be done. ...

=> **Further discussed during the interview at ESTEC**

Q9. ... What plans have the e-ASTROGAM team made to **coordinate their observations with other observatories** likely to be operating after 2029?...

Q10 ... What are the team's plans **on how data will be served to the community**, ... Guest Observers ... providing access to fully-calibrated data? ...

Q11 ... Provide some commentary on how the e-ASTROGAM team intend to **reach the widest possible astrophysics community**. ...

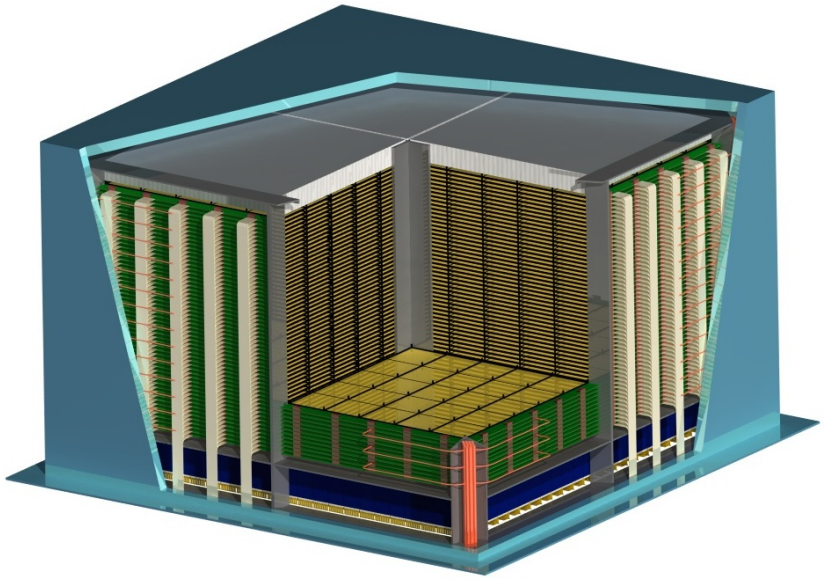
Next...

- Discussions with ESA's Science Assessment Review Panel were very positive
- Probability to go to phase A of about 50% – We should be ready!
- Tasks for **AHEAD W9 SWG** during phase A:

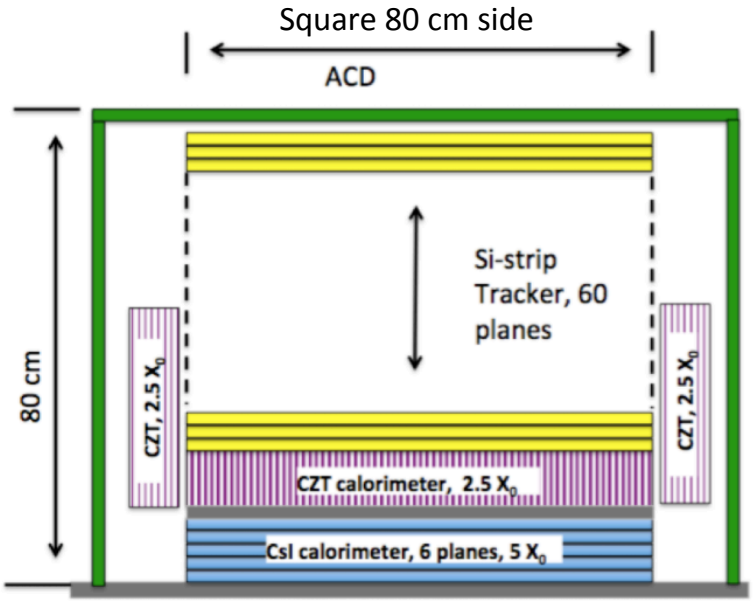
  - Specify the **instrument design**: DSSD strip pitch, Calorimeter (CZT, CsI...), Anticoincidence Detector segmentation etc.

  - Improve the **background model**, e.g. influence of SAA (see Paolo's talk)

  - Add **science simulations** (synthetic maps and spectra)



e-ASTROGAM (ESA M5)



AMEGO (NASA Probe)