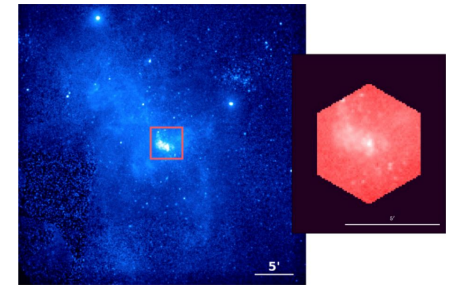
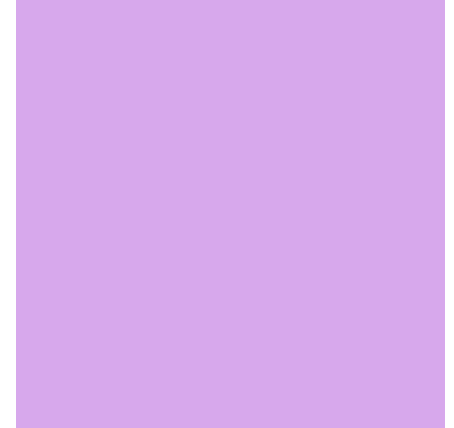
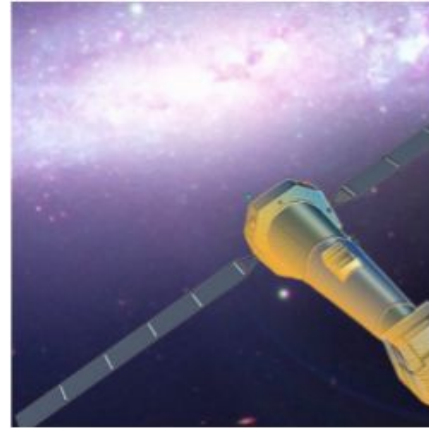


# ATHENA



The Athena Community  
Office (ACO)

Silvia Martínez-Núñez on  
behalf of the Athena  
Community Office team

Instituto de Física de Cantabria  
(IFCA)

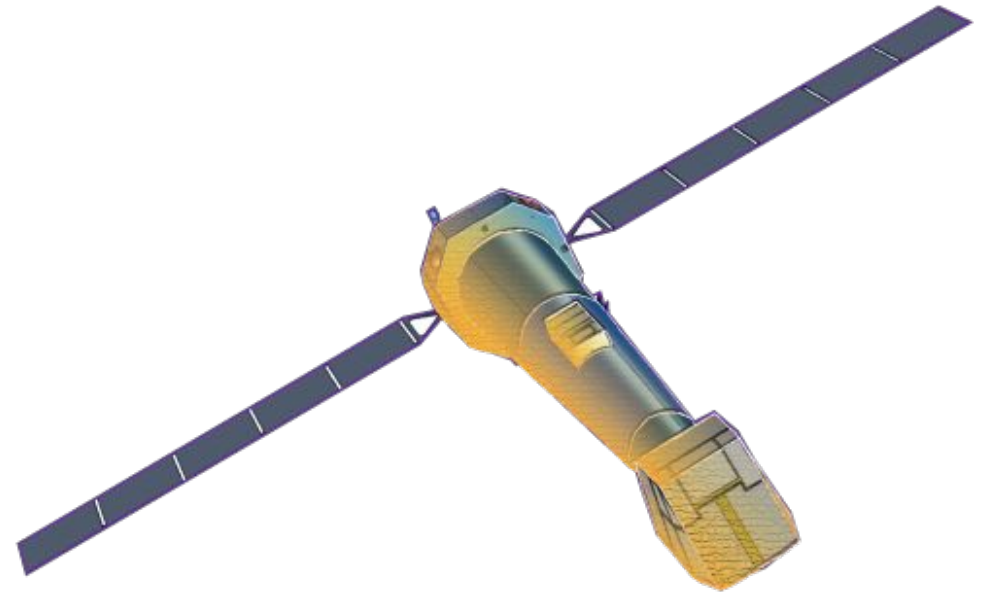
Granada, 24 October 2017



# Advanced Telescope for High-Energy Astrophysics

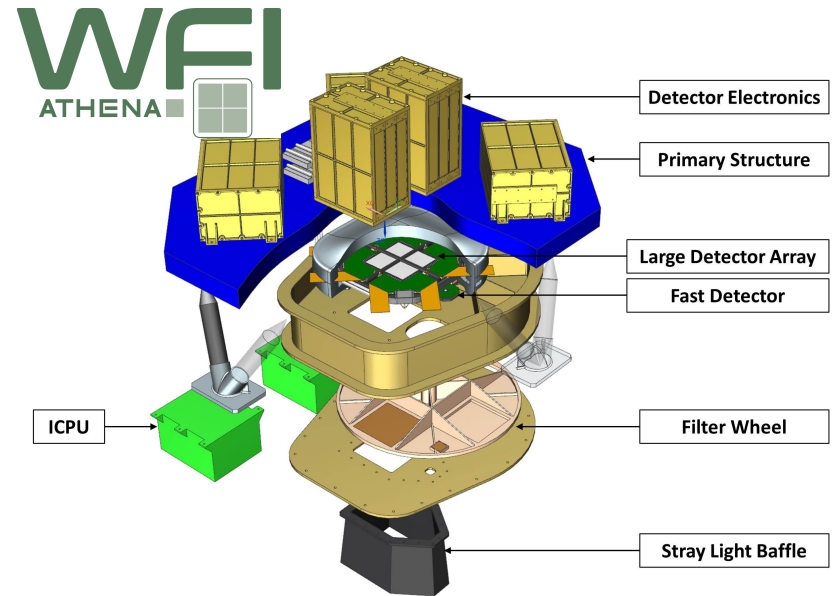
---

- Second Large (L2) mission of ESA Cosmic Vision 2015–2025
- Science theme: The Hot and Energetic Universe
  - How does ordinary matter assemble in the large-scale structures?
  - How do black holes grow and shape galaxies?
- In addition:
  - Fast ToO capability to study transient sources
  - Observatory science across all corners of Astrophysics

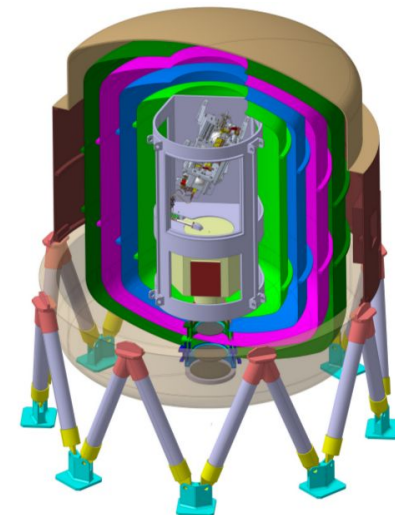


# Athena mission concept

- Single telescope, using Si pore optics. 12m focal length
  - WFI sensitive imaging & timing
  - X-IFU spatially resolved high-resolution spectroscopy
- Movable mirror assembly to switch between the the two instruments
- Launch 2028/2029, Ariane 64
- L2 halo orbit (TBC)
- Lifetime  $\geq 4$  yr



<http://www.mpe.mpg.de/ATHENA-WFI/>



<http://x-ifu.irap.omp.eu/>

# The Athena Community

- With the agreement of ESA, the ASST established a Working Group structure populated by members of the community
- The community is formed by more than 800 researchers. Their scientific and technical expertises are key for the success of the mission

ESA Athena Science Study Team (ASST)	
M. Guainazzi (Chair), K. Nandra (Lead & WFI), D. Barret (X-IFU), A. Decourchelle, J. W. den Herder, A.C. Fabian, H. Matsumoto (JAXA), L. Piro, R. Smith (NASA), R. Willingale	
<b>SWG1 - Hot Universe</b> A. Fabian, T. Reiprich, T. Ohashi	SWG1.1 Evolution of galaxy groups and clusters S. Allen, N. Ota, E. Pointecouteau SWG1.2 Astrophysics of galaxy groups and clusters D. Eckert, S. Ettori, C. Pratt SWG1.3 AGN feedback in galaxy clusters and groups J. H. Croston, B. McNamara, J. Sanders SWG1.4 Missing baryons and warm-hot intergalactic medium A. Finoguenov, J. Kaastra
<b>SWG2 - Energetic Universe</b> K. Nandra, L. Brenneman, M. Cappi	SWG2.1 Formation and growth of earliest SMBH J. Aird, A. Comastri SWG2.2 Understanding the buildup of SMBH and galaxies F. J. Carrera, A. Georgakakis, Y. Ueda SWG2.3 Feedback in local AGN and star forming galaxies G. Ponti, A. Ptak, Y. Terashima SWG2.4 Close environments of SMBH M. Dovciak, G. Matt, G. Miniutti SWG2.5 Physics of accretion C. Done, J. Miller, C. Motch SWG2.6 Luminous extragalactic transients P. Jonker, P. O'Brien
<b>SWG3 - Observatory</b> A. Decourchelle, H. Matsumoto, R. Smith	SWG3.1 Solar System & exoplanets G. Branduardi-Raymont, M. Güdel SWG3.2 Star formation and evolution G. Rauw, S. Sciortino SWG3.3 End points of stellar evolution E. Bozzo, A. Schwope SWG3.4 Supernova remnants & interstellar medium A. Bamba, E. Costantini SWG3.5 Multiwavelength synergy F. Combes, M. Salvato
<b>TWG4 - Telescope</b> R. Willingale, G. Pareschi	
<b>MWG5 - Mission Performance</b> J. W. den Herder, L. Piro, A. Rau	MWG5.1 Science ground segment M. Watson, N. Webb MWG5.2 Background Ph. Laurent, S. Molendi MWG5.3 Inter-calibration V. Burwitz, F. Pajot, S. Sembay MWG5.4 End-to-end simulations Ph. Peille, J. Wilms MWG5.5 Advanced analysis tools F. Fiore, F. Haberl MWG5.6 Targets of opportunity S. Basa, E. Troja



# The Athena Community Office (ACO)

- The ASST established the ACO (December 2015), in order to obtain support in performing its tasks assigned by ESA, notably as “focal point for the interests of the broad scientific community”
- Responsibilities:
  - Organisational aspects and optimisation of community efforts
  - Maintain the Athena Community informed
  - Develop communication and outreach activities around Athena
- Led by IFCA (CSIC-UC) in Spain, with contributions from IRAP, MPE and UniGe

## ACO Team



**Francisco  
Carrera (IFCA)**  
ACO Director



**Didier  
Barret (IRAP)**



**Enrico  
Bozzo (UniGe)**



**Maria Teresa  
Ceballos (IFCA)**



**Silvia  
Martínez (IFCA)**



**Pilar  
Monterde (IFCA)**



**Arne  
Rau (MPE)**



# The Athena Community opening event

---

- On June 22nd 2016, a public event presenting the ACO took place at the premises of the IFCA.
- During this opening event, the new Athena community web portal was released, the first issue of the Athena community Newsletter was published and the first post was sent to the social networks.



# Organisational aspects: support to ASST

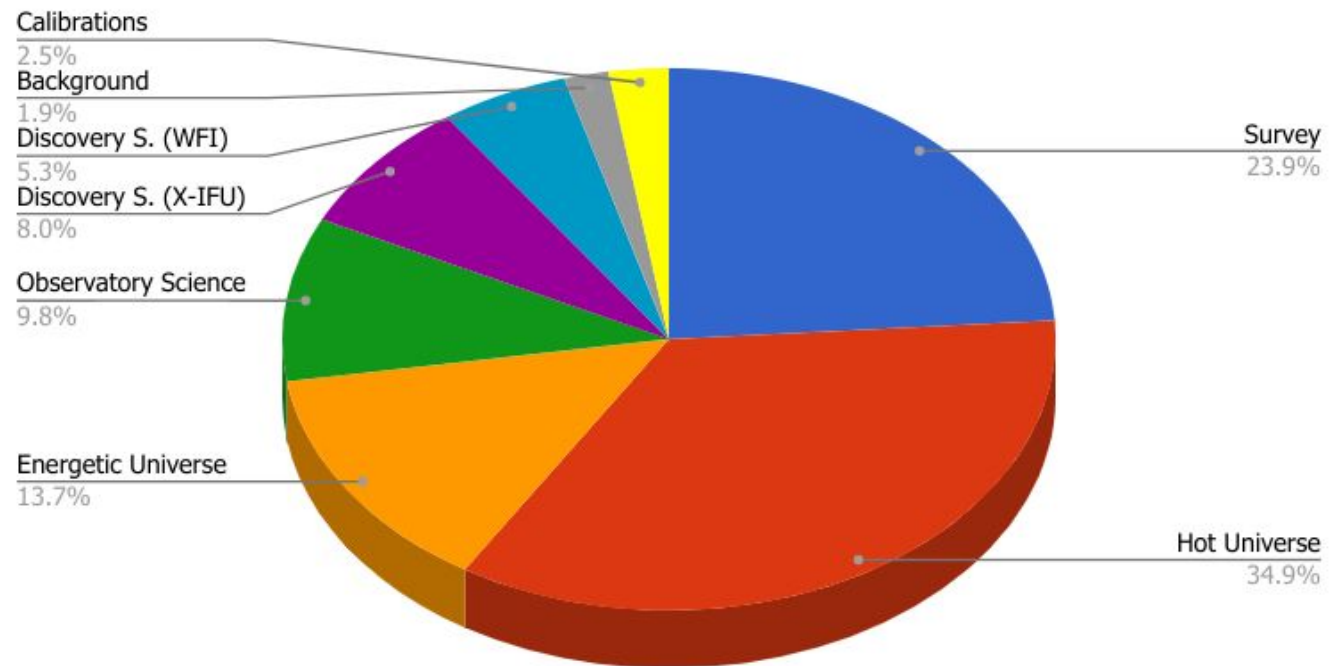
---

- Scientific Impact of Mass-saving Options (SIMO) exercise
  - February - March 2017
  - Purpose: ASST to consider scientific impact of various options to reduce mass (~ 300 kg over 7 tons): reduction of focal length, reduction of mirror size, reductions in instrument capabilities
  - Support on collecting results of scientific impact of various options to reduce mass
  
- Cost-driven Observation Reprogramming Exercise (CORE) exercise
  - May - October 2017
  - Purpose: to evaluate the scientific performance of a reduced mission concept able to fit within the ESA cost cap of ~ €1.05bn (2015 EC) and demonstrate the science gained by the more capable mission currently under study
  - Support on collecting results of scientific impact of a reduced mission



# Organisational aspects: support to ASST

- Mock Observation Plan (MOP): observing plan of Athena, which it is used for the purpose of mission design
  - From September 2017: maintenance of the document is transferred to ACO
  - Current version (1.2) includes CORE output





# Organisational aspects: support to ASST

- To ensure presence of the project in relevant conferences

- Definition of a strategy: particularly important prior to adoption, to make sure that the governing bodies and their scientific advisors are aware of the relevance and good health of Athena
- Monthly follow-up of conferences of interest for the project

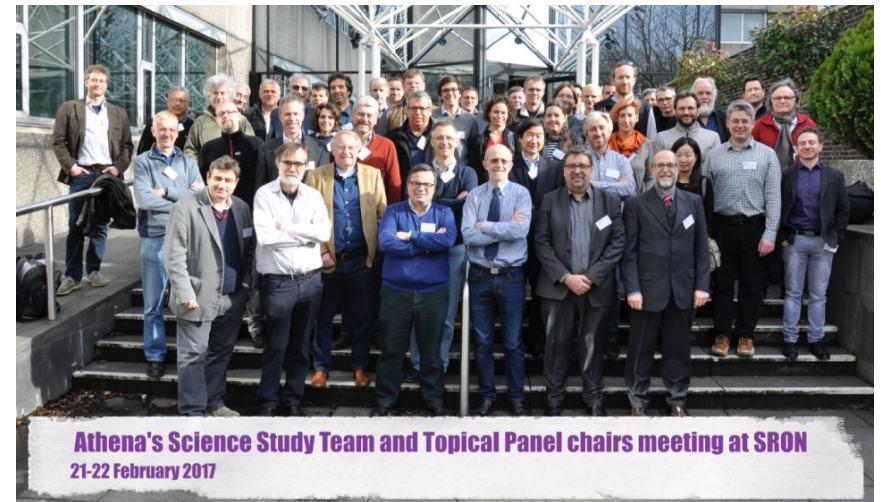
Category	Must			Nice	Indiff.
	A.a: Splinter session	A.b: Invited Talk	A.c: Cont. talk (A.d: poster)	B	C
1 Generic X/space science	Very early warning, SOC membership				
2.1 Generic International					
2.2 Generic National					
3 Primary science			Early warning, Personal, specific conference		
4 Observatory science				Generic, specific conference	
5 Mission/observatories					Generic
6.1 Instrumentation	Very early warning, SOC membership				
6.2 Software			Personal, specific conference		



# Organisational aspects: internal meetings, summaries and debriefs

---

- Regular ASST internal meetings
  - Summary of meetings (ASST-SOM)
  - Debrief to SWG and TP-chairs
- ASST-SWG-TP-chairs meetings (~ 2-3 per year)
  - Support on organisation matters
  - Summary of meetings (ASST-SOM)
- Instrument consortia meetings
  - Brief summaries on the web and social media provided by the PIs of the instruments



# Organisational aspects: the Athena Document Repository



Search...

## Athena Science Working Group document repository

### The Athena Mission

[Mission Overview](#)  
[ASST-WG Organigramme](#)  
[Help Desk](#)

### Meetings Calendar

[WGs and TPs meetings](#)  
[Add a Meeting](#)

### ASST-WG Documents

[Document Repository](#)  
[Rules on document to ASST](#)  
[Upload or Delete Document](#)

### ASST

ASST reserved repository and repository of all documents that the ASST wants to share with members at different levels in the Athena hierarchical organization.

### ASST-WG\_Meetings

Category dedicated to meetings involving members in the top levels of the Athena organigram (from TP chairs and above)

### Working Groups

All categories dedicated to the different working groups and topical panels in the Athena hierarchical organization.

### Synergies

Categories dedicated to all synergies exercises between Athena and other present/future facilities.

### Activities

Categories dedicated to all specific activities of the Athena working groups and topical panels coordinated by the ASST.

### Public

Category dedicated to documents accessible to all members having an account on this on-line tool.

<http://www.isdc.unige.ch/athena/>



# Organisational aspects: the Athena Document Repository

## The Athena Mission

[Mission Overview](#)  
[ASST-WG Organigramme](#)  
[Help Desk](#)








## Meetings Calendar

[WGs and TPs meetings](#)  
[Add a Meeting](#)

## ASST-WG Documents

[Document Repository](#)  
[Rules on document to ASST](#)  
[Upload or Delete Document](#)

## Documents Tree

 [Categories](#)  
 [ASST](#)  
     [Templates](#)  
     [ASST\\_Meetings](#)  
     [ASST\\_only](#)  
     [WG\\_chairs](#)  
     [TP\\_chairs](#)

## All\_members



Documents that the ASST wishes to share with all WGs and TPs members. The content of this category is thus accessible to all persons having an account for this on-line tool.

 [ASST-SOM-0006v1.0-ASST14.pdf](#)

[Details](#)[Download](#)

This document contains a summary of ASST meeting #14 at ESTEC on 20-21 July 2017

 [ASST-SOM-0005v1.1-ASST13.pdf](#)

[Details](#)[Download](#)

This document contains a Summary of ASST meeting #13 that took place at ESTEC on 04 May 2017.

 [Athena\\_SciRd\\_iss1v6.1.pdf](#)

[Details](#)[Download](#)

Top-level Athena science requirement document.

 [Athena\\_SciRd\\_iss1v5.pdf](#)

[Details](#)[Download](#)

Athena Science Requirement document (publicly available version distributed by ESA).

 [ASST-TN-0001v1.0\\_NeedsDataOtherFacilities.pdf](#)

[Details](#)[Download](#)

This document contains a preliminary overview of the type and amount of data from other facilities that will be needed, in addition to the Athena observations, to achieve the Athena level-1 science objectives.

 [ASST-SOM-0003v1.0\\_SRON2017.pdf](#)

[Details](#)[Download](#)

This document contains a summary of the meeting of the Athena TP Chairs that took place at SRON on 21-22 Feb 2017.



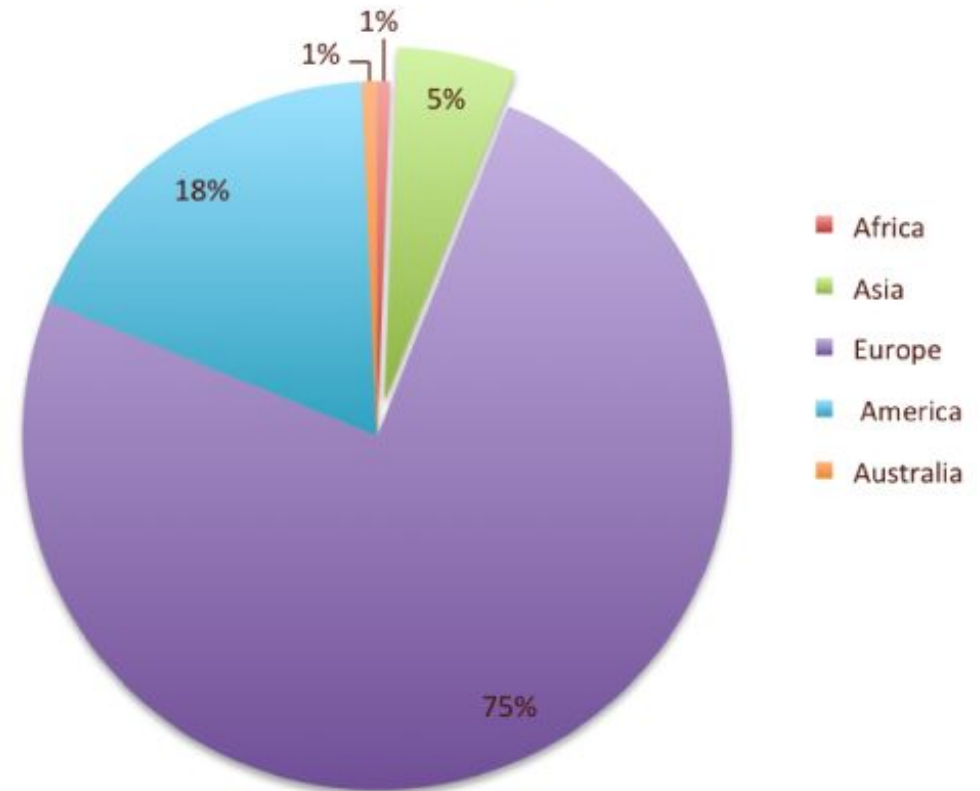
# Organisational aspects: Athena Community database

---

## ■ Athena Community database:

- Currently 861 members
- The application for Working Group membership is opened once a year (21 Dec - 31 Jan)
- Major update per year associated to the assessment of new members
- Affiliation changes when required by members

**Athena Community 2017**



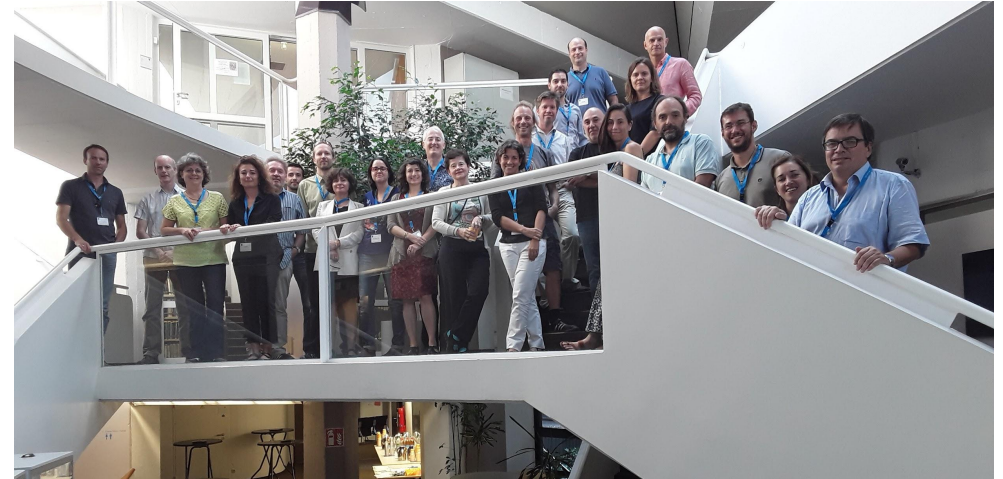


# Organisational aspects: support to synergy exercises

---

## ■ ESO-Athena Synergy exercise:

- EAST: F. Combes (OPM), M. Díaz-Trigo (ESO), S. Ettori (INAF/OABO), E. Hatziminaoglou (ESO), P. Jonker (SRON), **P. Padovani** (ESO, **chair**), M. Salvato (MPE) and S. Viti (UCL).

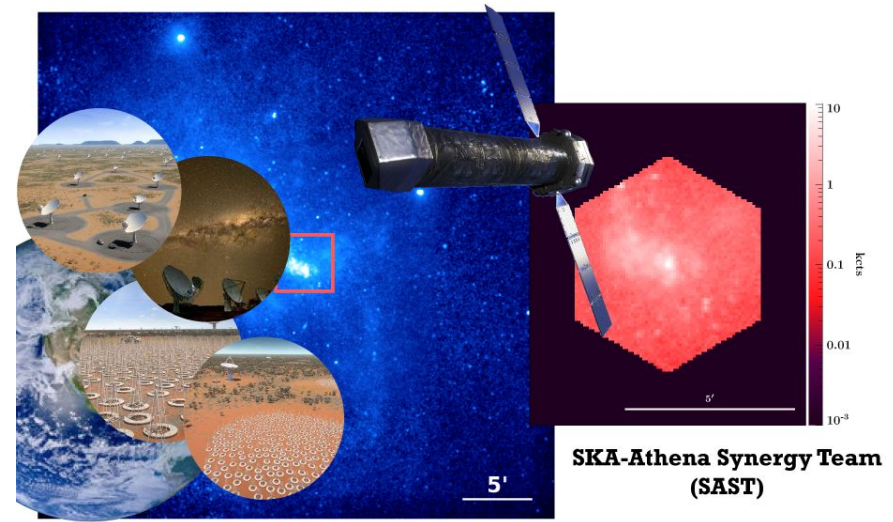


- March 2016: Kick-off
- Sept. 2016: Workshop at ESO headquarters
- May 2017: Publication of the ESO-Athena White Paper at arXiv: [1705.06064](https://arxiv.org/abs/1705.06064)



# Organisational aspects: support to synergy exercises

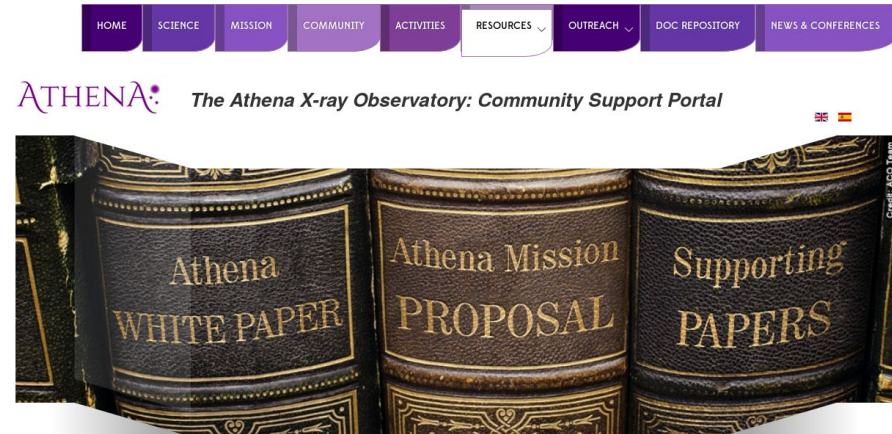
- SKA-Athena Synergy exercise:
  - SAST: R. **Cassano** (INAF, **chair**), C. Ferrari (OCA), R. Fender (Oxford) and A. Merloni (MPE)
  - Sept. 2016: Kick-off
  - April 2017: Workshop at SKA headquarters
  - Dec. 2017- Jan 2018: Publication of the SKA-Athena White Paper at arXiv



# Organisational aspects: Athena Community Support Portal (Resources)

<http://www.the-athena-x-ray-observatory.eu/>

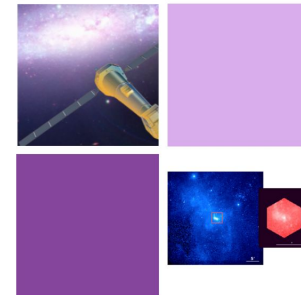
- Athena Brand
  - Presentations templates
  - Brand and logo
- Publications
  - Papers related with Athena
  - Overview papers
  - Athena mission proposal and white paper
  - Supporting papers
- Presentations
  - Related with Athena
  - Standard presentations



## Resources


ATHENA:

Your Title Here



Your name here

Your affiliation here

 Your institutional logos here (0.9 cm height)

Place, date



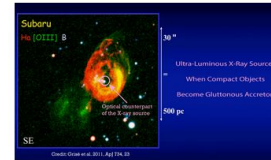


# Maintain the Athena Community informed

- [Athena Community Support Web Portal](#) (and social media)

- News of interest for the community
- Summaries of activities related to the project
- Announcements of conferences

## News



**#AthenaNuggets: Ultra-Luminous X-ray Sources: When Compact Objects Become Gluttonous Accretors**, by Christian Motch

In the #AthenaNuggets 16, Christian Motch discusses Ultra-luminous X-ray sources (ULXs), which are unique laboratories to study the physics...

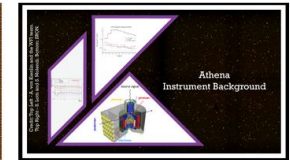
[READ MORE +](#)



**Athena at European Researchers' Night 2017**

Another year Athena was present at the European Researchers' Night, 29th September 2017. This time the activities were focused on...

[READ MORE +](#)



**#AthenaNuggets: Athena instrument background**, by Simone Lotti and Silvano Molendi

In the #AthenaNuggets 15, Simone Lotti and Silvano Molendi explain us the current status of background simulations with the...

[READ MORE +](#)

## Activities



**Summary of the sixth X-IFU consortium meeting** by Didier Barret (PI of the instrument)

The sixth X-IFU consortium meeting took place from September 11th to 15th in Madrid at CSIC headquarters. It was hosted...

[READ MORE +](#)



**Calibration plan of the Athena telescope meeting at SRON**

Nearly every six months, a team of world-class experts, is regularly meeting to discuss the calibration plan of the...

[READ MORE +](#)



**Athena Ground Segment Meeting**

A meeting was held on May 23rd-24th at ESAC (Madrid) to discuss various issues related to the Athena ground...

[READ MORE +](#)

## Conferences



**Registration open for the AHEAD School on High Resolution X-ray Spectroscopy.**

The 'AHEAD School on High Resolution X-ray Spectroscopy' will be held in Alicante (Spain) from 14 to 17 of...

[READ MORE +](#)



**48th Saas-Fee Advanced Course: Black hole formation and growth**

The 48th "Saas-Fee Advanced Course" of the Swiss Society for Astrophysics and Astronomy (SSAA) will be held from 28 January...

[READ MORE +](#)



**Workshop "The power of X-ray spectroscopy"**

The workshop entitled "The power of X-ray spectroscopy" will be held at Staszic Palace in Warsaw (Poland), 6-8 September 2017....

[READ MORE +](#)

# Maintain the Athena Community informed

---

- Brief News by email
  - Relevant news to the community
  - Asking for inputs from the community

**Athena Community Office** <aco@ifca.unican.es>  
To: athena-wg-members@lists.mpe.mpg.de

7 June 2017 at 10:02

## **Athena Community Brief News #4 (7 June 2017)**

<http://www.the-athena-x-ray-observatory.eu/>

\*\*\*\*\*

Contents:

- Publication of ESO-Athena Synergy White Paper
- New structure at the Athena Document Repository
- Summary of last ASST meeting
- Some relevant conferences to the community

\*\*\*\*\*





# Maintain the Athena Community informed

---

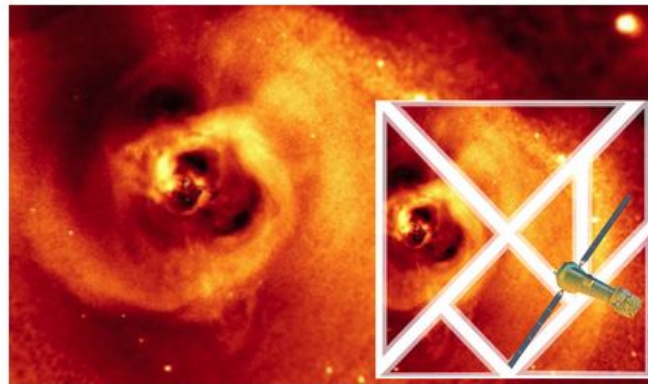
- Newsletter (every 6 months)
  - Athena Project Status
  - News from instruments
  - Scientific Nugget
  - Technical Nugget
  - 3 Biographies
  - Conferences with presence of Athena
  - Other: synergy exercises, background studies, AO new members, ...



## Newsletter Archive



Newsletter #3 (June 2017)



Newsletter #2 (December 2016)



Newsletter #1 (June 2016)



# Maintain the Athena Community informed

## ■ Who is who within the Community

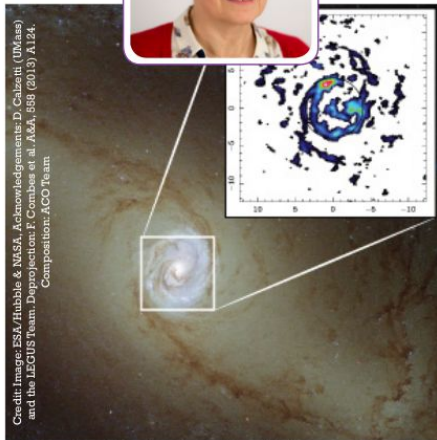
### Athena Community People



### *Françoise Combes*

Françoise is an astrophysicist at Paris Observatory, and professor at College de France. She has worked both on numerical simulations of galaxy dynamics and multi-wavelength observations of galaxies, at low and high red-shift. X-ray data have always been very useful to her, first for the physics of AGN, where her interests are in their molecular gas fueling and feedback, and second to map the hot gas in cool core galaxy clusters, where they have detected molecular gas in cooling filaments.

Françoise is co-chairing the topical panel "Multi-wavelength synergy", which is gathering all common interests from radio wavelengths to gamma-rays for the Athena science. She has participated in the EAST (ESO-Athena Synergy Team) writing the White Paper on Athena synergies with ESO based facilities in the Optical/NIR (VLT, E-ELT) and sub/mm (ALMA) regimes.



The deprojected CO emission detected by ALMA of the center of the nearby active galaxy NGC 1433.

ATHENA: [@athena2028](#) [The Athena X-ray Observatory](#) [Athena X-ray Observatory](#)

### Professional Profiles



A. Fabian



J. Wilms



E. Pointecouteau



L. Brenneman



F. Combes



H. Matsumoto

# Develop communication and outreach activities

---

- Purpose: to develop a number of activities in communication and outreach aimed at raising awareness of the science and technology of Athena making them broadly known.
- Communication: to the scientific community, mostly that working on other Astrophysics & Space Science areas; to funding agencies & related policy makers etc; to the general public.
- Outreach: addressed to the general public with no (or little) scientific knowledge.

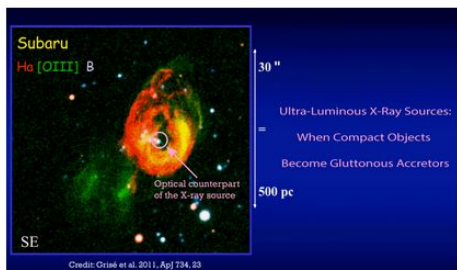


# Develop communication and outreach activities

- #AthenaNuggets: small pieces of Athena scientific or technical knowledge (12 SN & 4 TN)
  - Released monthly (every first Saturday of a month) in the web and social media
  - For the community: presentation collecting all nuggets is stored in the Athena Community Web Portal



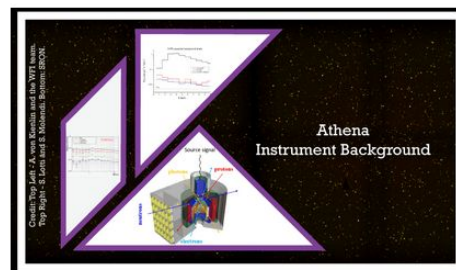
## Athena Nuggets



### Ultra-Luminous X-Ray Sources: When Compact Objects Become Gluttonous Accretors

by Christian Motch. Observatoire Astronomique Strasbourg, France

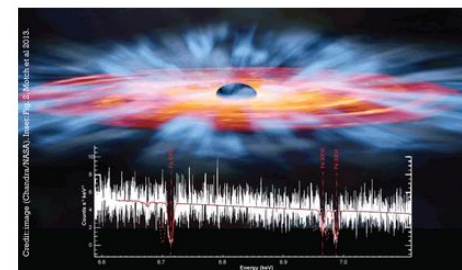
[READ MORE +](#)



### Athena Instrument Background

by Simone Lotti (INAF/IAPS, Rome) and Silvano Molendi (INAF/IASF, Milan)

[READ MORE +](#)



### How are winds generated around stellar-mass black holes and neutron stars?

by María Díaz-Trigo (European Southern Observatory)

[READ MORE +](#)



# Develop communication and outreach activities

---

- 11th of February: International Day of Women and Girls in Science.
  - Purpose: to promote and make more visible our female scientists' work.
  - Poster including the photos of most of the female members of the community (~200).



**ATHENA FEMALE SCIENTISTS**

International Day of Women and Girls in Science, 11 February 2017





# Develop communication and outreach activities

---





- 11th of February: International Day of Women and Girls in Science.
- Videos of six of our female co-chairs sharing their life experience in Science



# Develop communication and outreach activities

## Posts Published from 11 February 2017

■ Impressions: Organic/Paid ■ Post Clicks ■ Reactions, comments & shares ⓘ

Published	Post	Type	Targeting	Reach
11/02/2017 10:56	 Athena Community joins the 11th of February The United Nations declared 11th of February the Inter			4.8K 



**athena2028** @athena2028 · Feb 11

3,091

Introducing Athena female scientists to the world

[#WomenScienceDay](#) [#WomenAthenaC](#)

[ow.ly/HdEI308Takw](http://ow.ly/HdEI308Takw) [pic.twitter.com/0oKI1UphVt](http://pic.twitter.com/0oKI1UphVt)

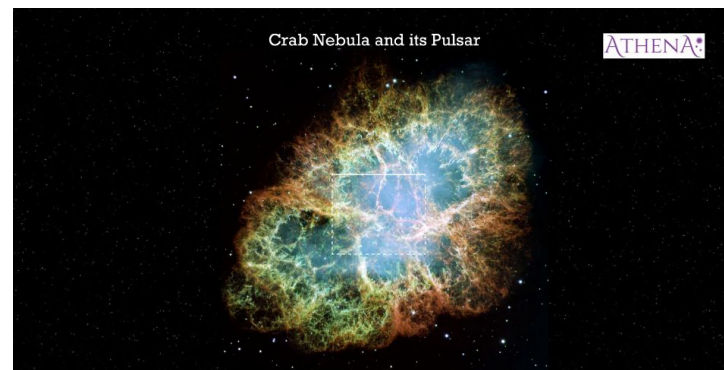
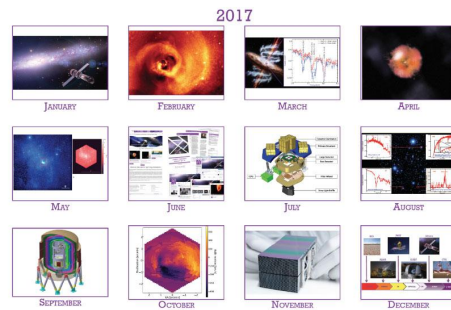
[View Tweet activity](#)



# Develop communication and outreach activities

## ■ Outreach material

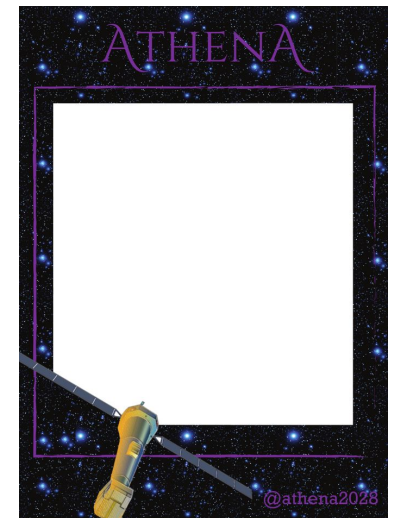
- ACO provides materials for pictures, flyers, texts, presentations and links to available Athena-related materials produced by other parties
- To build a network: AHEAD, MPE, IRAP, SRON, ...



Outside: The NASA/ESA Hubble Space Telescope observed the Crab Nebula, a supernova remnant, named SN 1054, located 6500 light-years from Earth, in optical wavelengths. SN 1054 was first observed on 4 July 1054 and remained visible for around two years. The event was recorded in contemporary Chinese astronomy, and references to it are also found in a later (15th-century) Japanese document, and in a document from the Arab world. Credits: NASA, ESA and Allison Lohf (Jet Propulsion Laboratory), Acknowledgements: Davide Zan Marchi (ESO/Hubble).



Inside: In the Crab Nebula, a rapidly rotating neutron star, or pulsar (white dot near the centre), powers the dramatic activity seen in X-rays by Chandra. The neutron star, like a lighthouse, ejects twin beams of radiation that appear to pulse 30 times a second due to the pulsar's rotation. A neutron star is the crushed ultra-dense core of the exploded massive star. Credits: NASA/CXC.





# Develop communication and outreach activities

- Participation at the European Researchers' Night (2016, 2017)





# Outlook

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- In summary, ACO is meant to be a focal point to facilitate the scientific exchange between the Athena activities and the scientific community at large, and to disseminate the Athena science objectives to the general public.
- Please, follow Athena on
  - Web: [www.the-athena-x-ray-observatory.eu](http://www.the-athena-x-ray-observatory.eu)
  - Twitter: [@athena2028](https://twitter.com/athena2028)
  - Facebook: [The Athena X-ray Observatory](https://www.facebook.com/TheAthenaXrayObservatory)
  - Youtube: [Athena X-ray Observatory](https://www.youtube.com/AthenaXrayObservatory)
- Any questions or suggestions please contact us at [aco@ifca.unican.es](mailto:aco@ifca.unican.es)

