



PERSONAL INFORMATION

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| CV date | 16/02/2022 |
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| First name | MARIA TERESA | | |
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(*) Mandatory

Current position

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| Position | Tenured Scientist CSIC | | |
| Initial date | 11/07/2012 | | |
| Institution | Instituto de Física de Cantabria (CSIC-UC) | | |
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| Key words | Scientific satellite, Quasar, Processing software, X-rays | | |

CV SUMMARY

The framework of my professional expertise is the X-ray extragalactic astronomy, with special emphasis in the processing and analysis of X-ray data (VO data centre creation, development of analysis tools for X-ray astronomical data, and software development for astronomical instruments in space missions).

Since 1996 I am member of different consortia and international groups for active ([XMM-Newton](#)) and in progress ([Athena](#)) X-ray missions: Survey Science Centre (SSC) and Software Analysis System Group (SASWG) for XMM, Athena/[X-IFU](#) consortium, Athena Working Groups/Topical Panels MGW5.1 (Science Ground Segment) and MWG5.4 (End to end simulations). Since January 2016 I'm X-IFU instrument Co-Investigator, one of the 3 X-IFU co-Investigators in Spain. As such I've participated in the elaboration of several Technical Notes for the X-IFU consortium. I'm also member of the board of the [Athena Community Office](#) (led by IFCA and co-participated by IRAP, MPE and Univ. Geneva) being the Chief for Public Outreach and Communication.

In the last 10 years, my research activities have been focused in the development of the best-in-performance algorithms to process (detect and reconstruct) onboard the electrical pulses generated by the X-ray photons in the Athena/X-IFU Transition Edge Sensor instrument. This research has been published in the proceedings of the most relevant conferences in the area (ADASS, SPIE, JLTP) and in journals combining software and instrumentation for spatial missions.

In addition, my longstanding collaboration in the XMM-Newton mission has involved me in the publication of the successful XMM-Newton full and overlapping source catalogues and in other papers related to the analysis of X-ray sources, all of them peer-review papers in the main international journals of the field (A&A, MNRAS).

During the last 10 years I have participated in 7 coordinated research projects being the Coordinator PI for the last 5. These projects were oriented to the research in X-ray astronomy as well as to the development of space missions, and all of them were obtained under competitive concurrence at national level. I'm also member of the research team of



two H2020 EU projects: [AHEAD2020](#) and [XMM2ATHENA](#). In AHEAD2020 I'm the Task 14.4 Coordinator for the development of *Machine Learning techniques for micro-calorimeter data reduction*, Task 4.3 Coordinator for the production of *Educational videos and applications* and I participate in the Work Package 2 for *Networking activities*. In XMM2Athena I am the leader of the Work Package 10, responsible of the *Communication and Outreach activities* of the project.

As a result of my research activity I've been awarded 4 'sexenios' (6-years research periods) covering until 2019.

My teaching experience during these last 10 years refers to Post-graduated courses at the University of Cantabria (UC) where I yearly participate in the subject "*Statistics*" of the [Particle Physics and Physics of the Cosmos](#) UC-UIMP master. I'm also member of the Academic Committee of this master.

Since the 2020-2021 term I've been co-responsible of the Section "*Equality*" in the subject "*Ethic and transverse competences and skills*" of the degrees of Physics, Mathematics and Information Systems at UC.

I've collaborated in the organization of several scientific and technical meetings, both national and international (SSC, SEA, SASWG, *X-ray Astronomy in Spain*, *Athena conference 2022*).

From 2015 to 2018 I've been member of the Board of the [Sociedad Española de Astronomía](#) and Coordinator of the Communication Committee.

I routinely participate in many outreach initiatives organized by IFCA and the H2020 EU projects (AHEAD2020 and XMM2Athena) like the *Science Week*, *Researchers at schools*, *Women and Girls in Science*, Mentorship of young girls in Science, and Open Days, resulting in more than 150 talks/workshops/PO activities in the last 10 years. I'm the coordinator of Outreach activities for the IFCA research group of [Galaxies and AGNs](#) and since early 2020 member of the [Equality and Diversity IFCA commission](#).

As part of the activities in the above mentioned national and international projects I've been responsible of 5 Post Docs engaged along several contracts. I also collaborate in the formation of under-graduate students who start their research activities at IFCA.

I have participated in the Scientific and Technical evaluation panels of the AEI to evaluate Research Grants, in the Expert Panels for the RyC evaluation and also for the Scientific Support Technicians. I frequently participate as well in the panels for CSIC position selection.

My list of [publications at ADS](#)

Research projects

1. [PID2021-122955OB-C41](#), *Athena* Phase B/C: Scientific participation in the mission and development of the X-IFU instrument. Ministerio de Ciencia, Innovación y Universidades. PI: Maria Teresa Ceballos Merino. (Consejo Superior de Investigaciones Científicas). 01/09/2022-31/08/2025. 150000€ **Coordinator**.
2. [RTI2018-096686-B-C21](#), *Athena*, Fase A2/B/C: Scientific participation in the mission and development of the X-IFU. Ministerio de Ciencia, Innovación y Universidades. PI: Maria Teresa Ceballos Merino. (Consejo Superior de Investigaciones Científicas). 01/01/2019-31/12/2021. 402500€ **Coordinator**.
3. [XMM2ATHENA](#), *XMM-Newton : a pathfinder for future multi-wavelength and multi-messenger observations with Athena*", EU H2020, Coordinator: CNRS, 01/04/2021-31/03/2024. 254318€. **Research team member. WP10 leader**.



4. AHEAD2020, *Integrated Activities for the High Energy Astrophysics Domain*, EU H2020, Coordinator: INAF, Coordinator CSIC: M.Teresa Ceballos. 02/03/2020-01/02/2024. 187252€. **Coordinator CSIC**
5. ESP2016-76683-C3-1-R, *Athena. Fases A/B1. Scientific participation and development of the X-IFU*. Ministerio de Economía y Competitividad. PI: Maria Teresa Ceballos Merino. (Consejo Superior de Investigaciones Científicas). 01/01/2017-31/12/2018. 210000€ **Coordinator**.
6. ESP2014-53672-C3-1-P, *Scientific and technological of the X-IFU instrument for the ESA ATHENA mission: Evaluation Phase*. Ministerio de Economía y Competitividad. PI: Maria Teresa Ceballos Merino. (Consejo Superior de Investigaciones Científicas). 01/01/2015-31/12/2016. 180000 €. **Coordinator**.
7. ESP2013-48637-C2-1-P, *Development of the X-rays calorimeter X-IFU for the ATHENA+ mission*. Ministerio de Economía y Competitividad. PI: Maria Teresa Ceballos Merino. (Consejo Superior de Investigaciones Científicas). 180000€. 01/01/2014-31/12/2014. **Coordinator**.
8. AYA2012-39767-C02-01-XB, *ATHENA (ADVANCED TELESCOPE FOR HIGH ENERGY ASTROPHYSICS): FASE DE DEFINICION. DESARROLLO DE MATRICES DE SENSORES BASADOS EN TES*. Ministerio de Economía y Competitividad. PI: Xavier Barcons Jáuregui. (Consejo Superior de Investigaciones Científicas). 01/01/2013-31/12/2013. 160.000 €. **Research team member**.
9. AYA-2010-21490-C02-01, *Undersrtanding the active universe: from detectors to active nuclei*. Ministerio de Ciencia e Innovación. PI: F.J. Carrera (Consejo Superior de Investigaciones Científicas). 01/01/2011-31/12/2012. 254.100 €. **Research team member**.