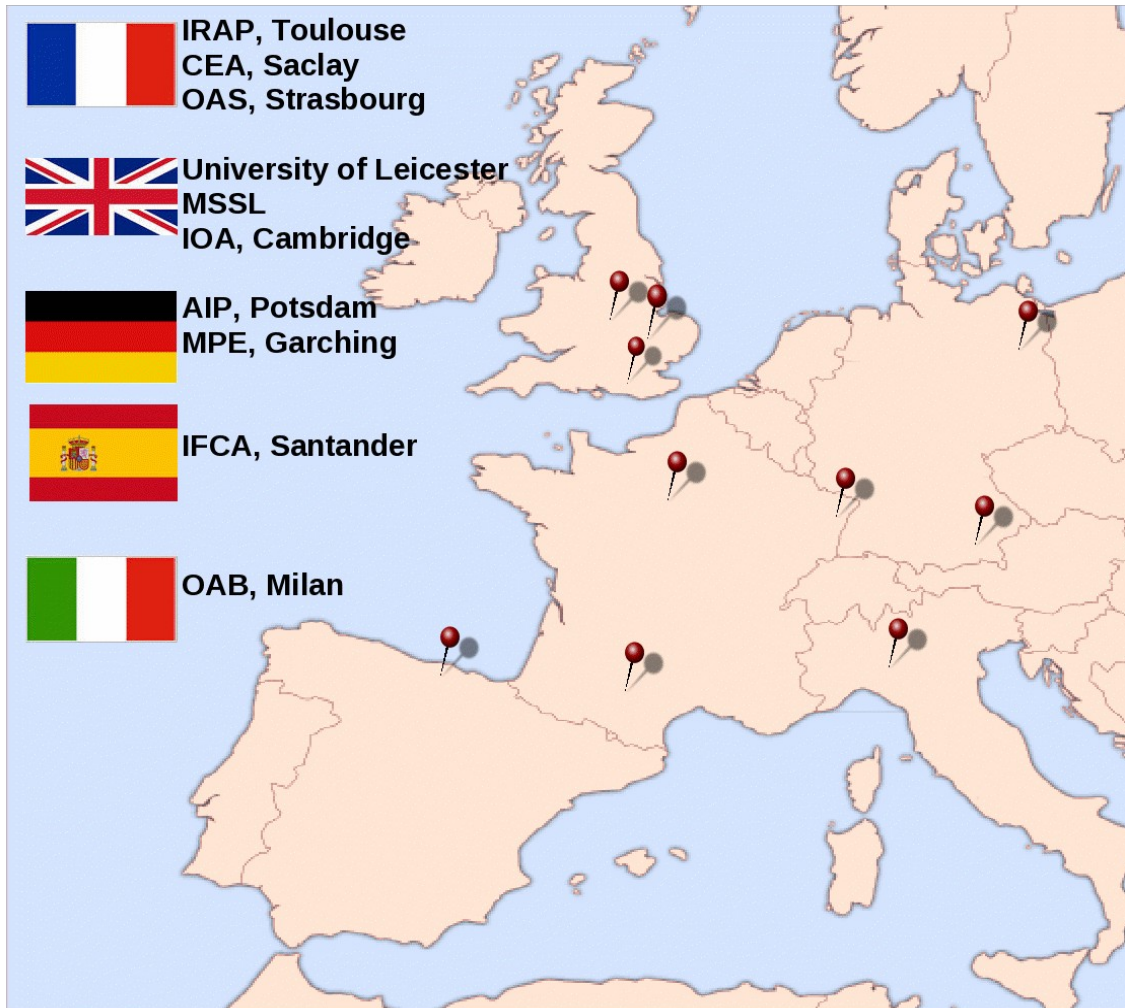

The XMM-Newton Survey Science Centre (XMM-SSC)

Natalie Webb

The XMM-SSC

The XMM-Newton Survey Science Centre was selected by ESA to ensure that the scientific community can exploit XMM-Newton data



Responsibilities :

- Development of science analysis software (SAS)
- Pipeline processing of all XMM-Newton observations.
- Follow-up/identification of XMM-Newton serendipitous sky - the XID Programme
- Compilation of Serendipitous Source Catalogue.



XMM2ATHENA



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n°101004168

XMM-Newton : a pathfinder for future multi-wavelength and multi-messenger observations, with Athena

SPACE-30-SCI-2020: Scientific data exploitation

Complimentary skills will allow us to develop+test new methods/software :

- to follow the X-ray transient sky in quasi-real time
- to identify multi-wavelength/messenger counterparts of X-ray sources
- to determine their nature using advanced machine learning methods
- to probe the faintest sources using innovative stacking and detection

Provide added value products to the XMM-Newton archives

Newly detected/identified sources will enhance our preparation of the X-ray sky that will be observed with Athena

Employ post-docs to whom we can pass on our skills and expertise



Local structure

XMM-SSC :

Natalie Webb (0.5 FTE) : Consortium management, software, catalogue, website, source ID

Mickael Coriat (0.3 FTE) : Catalogue, management machines/servers, website

Roberta Amato (1 FTE) : Data validation, catalogue

Financing : CNES (1 post-doc, 2 or 3 interns, travel, computers)

XMM2ATHENA :

Hugo Tranin : Source classification

Erwan Quintin : Long term variability

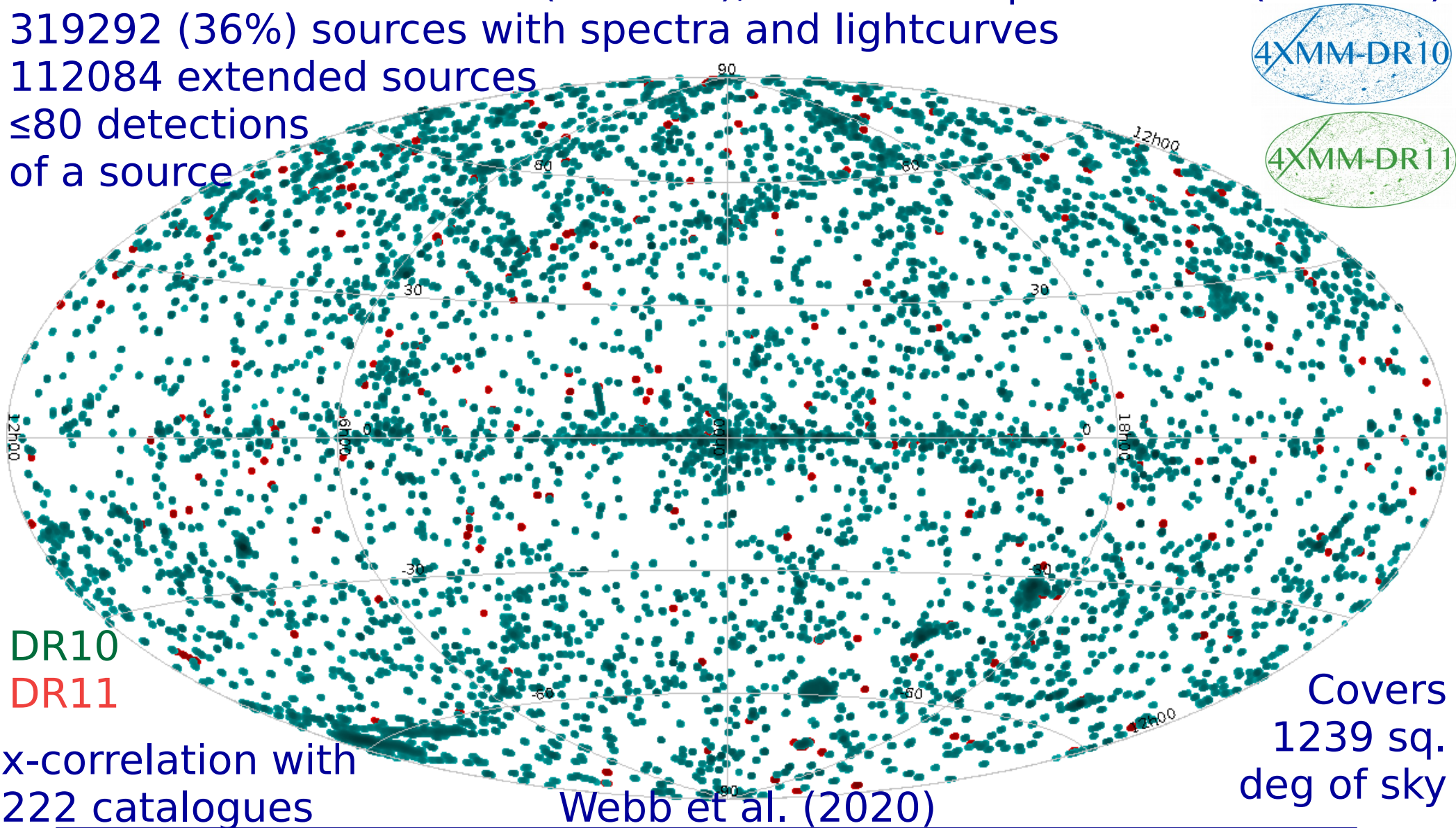
Maitrayee Gupta (1 FTE) : Short term variability

Zoé Massida : Administration (0.3 FTE) / communication



4XMM-DR11

DR11: 895415 detections (+45424), 602543 unique sources (+27385)
319292 (36%) sources with spectra and lightcurves
112084 extended sources
≤80 detections of a source



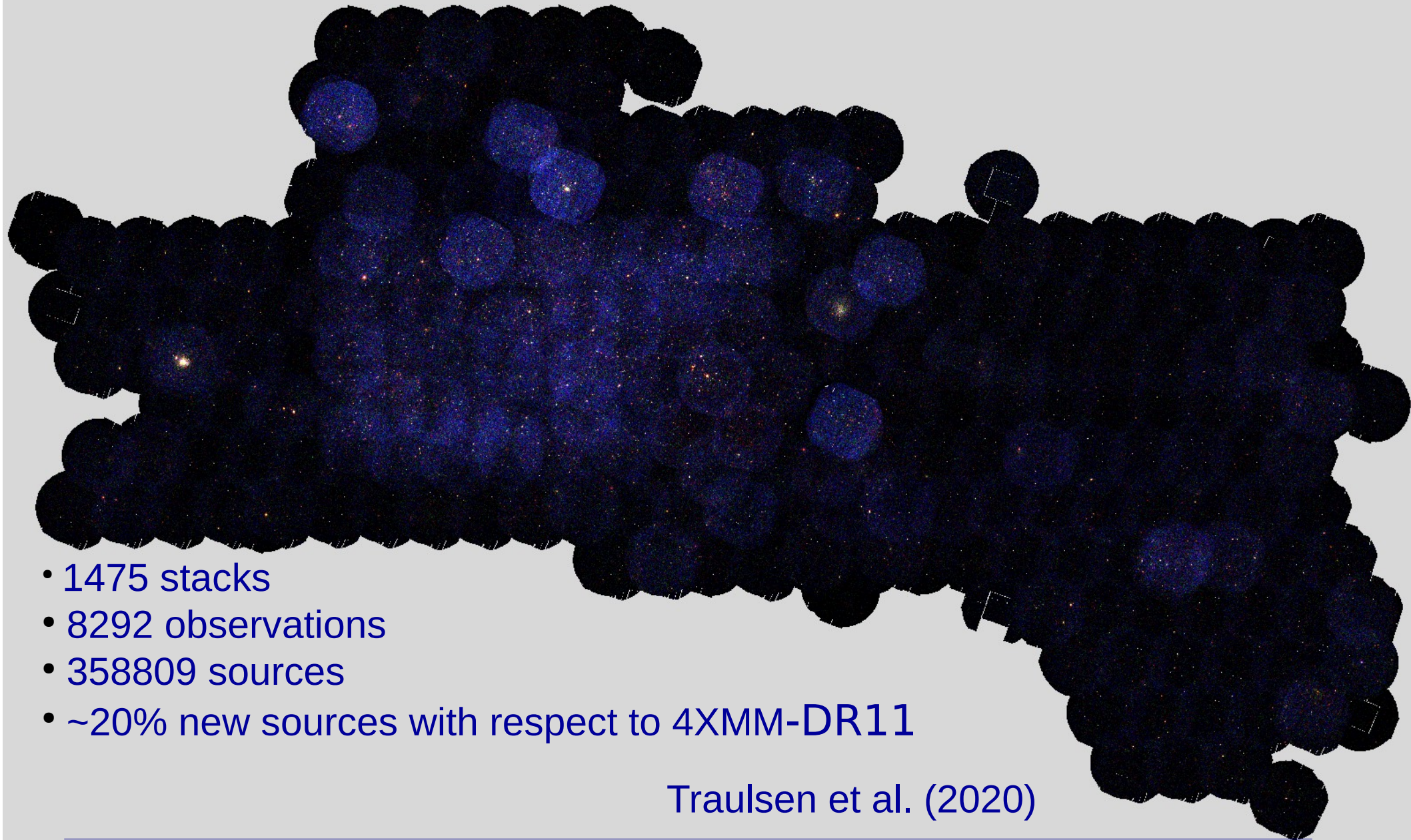
DR10
DR11

x-correlation with
222 catalogues

Webb et al. (2020)

Covers
1239 sq.
deg of sky

4XMM-DR11s



- 1475 stacks
- 8292 observations
- 358809 sources
- ~20% new sources with respect to 4XMM-DR11

Traulsen et al. (2020)

Other activities

New versions of data analysis software (SAS, version 20.0.0 (30 Nov. 2021, v. 19.1.0 (17 Mar 2021), v. 19.0.0 (28 Oct. 2020))

Server and website updates : <http://xmmssc.irap.omp.eu/>
<http://xmm-catalog.irap.omp.eu/>
<https://xcatdb.unistra.fr/4xmmdr11/alixindex.html>

New methodology developed - to be implemented

Outreach activities, e.g. :

<http://xmm-ssc.irap.omp.eu/claxson>

Original image credit: NASA/JPL-Caltech

--- Ranking of level 2 users ---

Rank	User	Number of classifications	Since 1 week	Success rate
1	KrystianBykowski	16509	0	84.1
2	algot	15000	0	92.8
3	SimonLeKlaxon	5154	0	92.1
4	dani.gi	4502	0	86.5
5	Tsuki Eeen no	4032	0	64.6
6	Baldrick	2385	15	84.9
7	chrostek	2309	0	78.9
8	tomaas	1722	0	88.5

Future look

2022

4XMM-DR12 and 4XMM-DR12s

Fully implement upper limit server

Put in place software to exploit time domain data

SNO and CNES review of XMM-Newton

Consortium meeting, October, Athens

XMM-Newton users group meeting, 16-17th May, ESAC

Long term

Yearly incremental versions of 4XMM

5XMM expected for ~2025 – XMM-Newton could fly until 2032

- Classified X-ray sources (Tranin et al. 2021) + optical sources
- Multi-wavelength/messenger counterparts to X-ray sources + photo-z
- Improved source detection in the stacked catalogue
- (Physically motivated) spectral fits, including sources with 5 flux bands
- (Very) short term and long term variability (+alerts)

Continue to provide legacy products over the lifetime of XMM-Newton

34th SSC meeting

Natalie Webb	Francisco J Carrera	Axel Schwope	Aitor Ibarra	Richard Saxton	Pedro Rodriguez	Jean Ballet
Maria Santos-Lleo	nscharte	Amalia Corral	Eduardo Ojero Pascual	Ada Nebot	Maite Ceballos (IFCA)	Adriana Pires
Ektoros Poulialis (NOA)	Rosa (IFCA)	Roberta Amato	José Vicente Perea	Paul Kuin	Iris Traulsen (AIP)	Simon Rosen
Jere Kuuttila	Vasilopoulos Georgios	Pierre Maggi	Laurent Michel	Hugo Tranin	Ivan Valtchanov	ejimenez
Christian Motch	FX Pineau	Felix Fuerst	Elena Colomo	Erwan QUINTIN	Lucía Ballo	Maitrayee Gupta
Jose Hernandez	holger	Zoé Massida	LauraTomas	Sudip Chakraborty	Jose Antonio Qu...	Wang Chen
		Brendan Perry	Rosario Gonzalez	everdugo	Jose Antonio Quero	Wang Chen
		Brendan Perry	Rosario Gonzalez	everdugo		

Back up

Back up

Other outreach

<http://xmm-ssc.irap.omp.eu/xmm2athena/outreach/>

What are X-Ray?
What are X-Rays?
X-Ray Dictionary (I)
X-Ray Dictionary (II)
X-Ray Dictionary (III)

X-Ray Observatories

World Space Week 2021: Women in Space
The XMM-Newton project has contributed to this initiative with the mosaic shown below, including all the astronomers participating in the project. They have also been shown one by one in our social networks.

World Space Week 2021 Women in Space

Athena
ATHENA FACT SHEET

XMM-Newton

For Kids
Coloring
Labyrinths
Jigsaw Puzzles
Word Search

EUROPEAN RESEARCHER NIGHT
CHECK OUT THE EV...

The European Researchers' Night 2021
Our Participation

International Day of Women and Girls in Science
On December 15, 2015, the General Assembly of the United Nations proclaimed **February 11** as the **International Day of Women and Girls in Science**.
«To rise to the challenges of the 21st century, we need to harness our full potential. That requires dismantling gender stereotypes. On this International Day of Women and Girls in Science, let's pledge to end the gender imbalance in science». — **UN Secretary-General António Guterres**