



ATHENA SCHOOL 2022

The universe in the era of spatially resolved
high-resolution X-ray spectroscopy

20-24 June 2022
Toulouse, France





Covid-19 warning

- Cluster at the XMM workshop in Madrid.
- If you participated to an event very recently
 - please test yourself
 - if positive, (obviously) take the appropriate measures ASAP
 - we invite you to wear a mask at all possible times
 - limit the physical and close interactions

Context and Support

- The Athena School is a 2022 thematic school by CNRS
- The school is supported by
 - CNRS
 - Programmes from the National Institut for Universe Sciences (INSU)
 - Cosmology and Galaxies (PNCG)
 - High energies (PNHE)
 - Stellar physics (PNPS)
 - Physics and Chemistry of the interstellar medium (PCMI)
 - CNES
 - The X-IFU project





Purpose of the school

- Hot and Energetic Universe science theme and the Athena mission
- Aim of the school:
 - provide knowledge of the scientific objectives of Athena
 - foster connexions between students (especially those in the early stage of their careers)
 - stimulate inter- and multi-disciplinary collaborations
 - train the community in high-resolution X-ray spectroscopy

SOC

- Vincent Albouys (CNES)
- Didier Barret (IRAP)
- Anne Decourchelle (DAp/CEA)
- Astrid Lamberts (PNPS)
- Philippe Laudet (CNES)
- Sophie Maurogordato (PNCG)
- Pierre-Olivier Petrucci (PNHE)
- Etienne Pointecouteau (IRAP, Chair)
- Delphine Porquet (LAM)
- Patrice Theulé (PCMI)
- Natalie Webb (IRAP)

LOC

- Nicolas Clerc (IRAP)
- Marjorie Cloup (IRAP)
- Elias Kammoun (IRAP)
- François Pajot (IRAP)
- Etienne Pointecouteau (IRAP)
- Maëva Voltz (IRAP)



Speakers



- Vincent Albouys (CNES, Athena/X-IFU Project Manager)
- Xavier Barcons (Director General of ESO)
- Didier Barret (IRAP, Athena X-IFU Principal Investigator)
- Nicolas Clerc (IRAP)
- Edoardo Cucchetti (CNES)
- Anne Decourchelle (CEA)
- Matteo Guainazzi (ESA, Athena Project Scientist)
- Christian Kirsch (FAU)
- Philippe Laudet (CNES)
- François Mernier (ESA)
- Paul Nandra (MPE)
- Philippe Peille (CNES, Athena/X-IFU Performance Manager)
- Pierre-Olivier Petrucci (IPAG)
- Susanna Vergani (GEPI, PNHE Director)
- Natalie Webb (IRAP, Athena/X-ISC Project Scientist)
- Joern Wilms (FAU)



Practical informations

- Keep all your bills and notes !
 - hotel, meals, bus, underground,... You will have to provide the whole lot to get your per diem.
- Conference diner on Wednesday 22nd
- “Fête de la musique” on Tuesday 21st
 - it is normal to find a band playing music at the entrance of your hotel up to the end of the night.



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20 - 24 JUNE 2022

	MONDAY 20 TH	TUESDAY 21 ST	WEDNESDAY 22 ND	THURSDAY 23 RD	FRIDAY 24 TH
9:00 - 10:30		Lesson 2: “The Hot Universe” (N. Clerc, F. Mernier)	Lesson 4: “The Energetic Universe” (J. Wilms, P-O. Petrucci)	Lesson 5: “Observatory Science” (A. Decourchelle, N. Webb)	Feedback, Debriefing, Discussions
11:00 - 12:30	-	Lesson 3: “Performances, calibration, simulations” (P. Peille, E. Cucchetti, C. Kirsch)	Practical: Session 2	Presentations by the participants	Lesson 7: School’s colloquim (S. Vergani)
		LUNCH			
14:00 - 15:30	Welcome & Introduction (E. Pointecouteau) The Athena situation (D. Barret)	Practical: Session 1	Practical: Session 3	Presentations by the participants	
16:00 - 17:30	Lesson 1: The Athena & XRISM missions (M. Guainazzi) X-IFU & consortia management (D. Barret)	Lesson: Space project management (V. Albouys)	ACO seminar: The CGM through Athena's eyes (Gabriele Ponti)	Practical: open session	-
17:30 - 19:00	-	Briefing: Session “Presentation by the participants”	Practical: Session 3	-	
		-	Guest talk: History of the Athena project & ESO programmes (X. Barcons)	-	
			SOCIAL DINNER		



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Pairs for practical sessions

Pairs	Last name	First name
1	Theulé	Patrice
	Kempf	Jean
2	Blondin	Stéphane
	Castellani	Florent
3	Diez	Camille
	Mignon-Risse	Raphaël
4	Bartalucci	Iacopo
	Molin	Alexeï
5	Gonzalez	Manuel
	Riva	Giacomo
6	Alaimo	Edoardo
	Ellien	Amaël
7	Lefkir	Mehdy
	Arthur	Léna
8	Ahangar	Asif Iqbal
	Cerardi	Nicolas
9	Dilruwan	Dehiwalage Don
	Parra	Maxime
10	Amodeo	Stefania
	Godinaud	Leïla



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Presentations by the participants

- you have been paired
- 15 minutes by pairs
 - 2 times 5mn of presentations of each other work, i.e. you will present in a couple of slides
 - the other member of your pair
 - her/his current research work.
 - her/his interest and perspectives in X-ray astronomy and Athena.
 - 5 mn of questions and further discussions.
- Provide me with the PDF of your slides by Wednesday evening.



Presentations by the participants

Pairs	23/06	Last name	First name
1	11:15	Theulé	Patrice
		Kempf	Jean
2	11:30	Blondin	Stéphane
		Castellani	Florent
3	11:45	Diez	Camille
		Mignon-Risse	Raphaël
4	12:00	Bartalucci	Iacopo
		Molin	Alexeï
5	12:15	Amodeo	Stefania
		Godinaud	Leïla
6	14:00	Alaimo	Edoardo
		Ellien	Amaël
7	14:15	Lefkir	Mehdy
		Arthur	Léna
8	14:30	Ahangar	Asif Iqbal
		Cerardi	Nicolas
9	14:45	Gonzalez	Manuel
		Riva	Giacomo
10	15:00	Dilruwan	Dehiwalage Don
		Parra	Maxime



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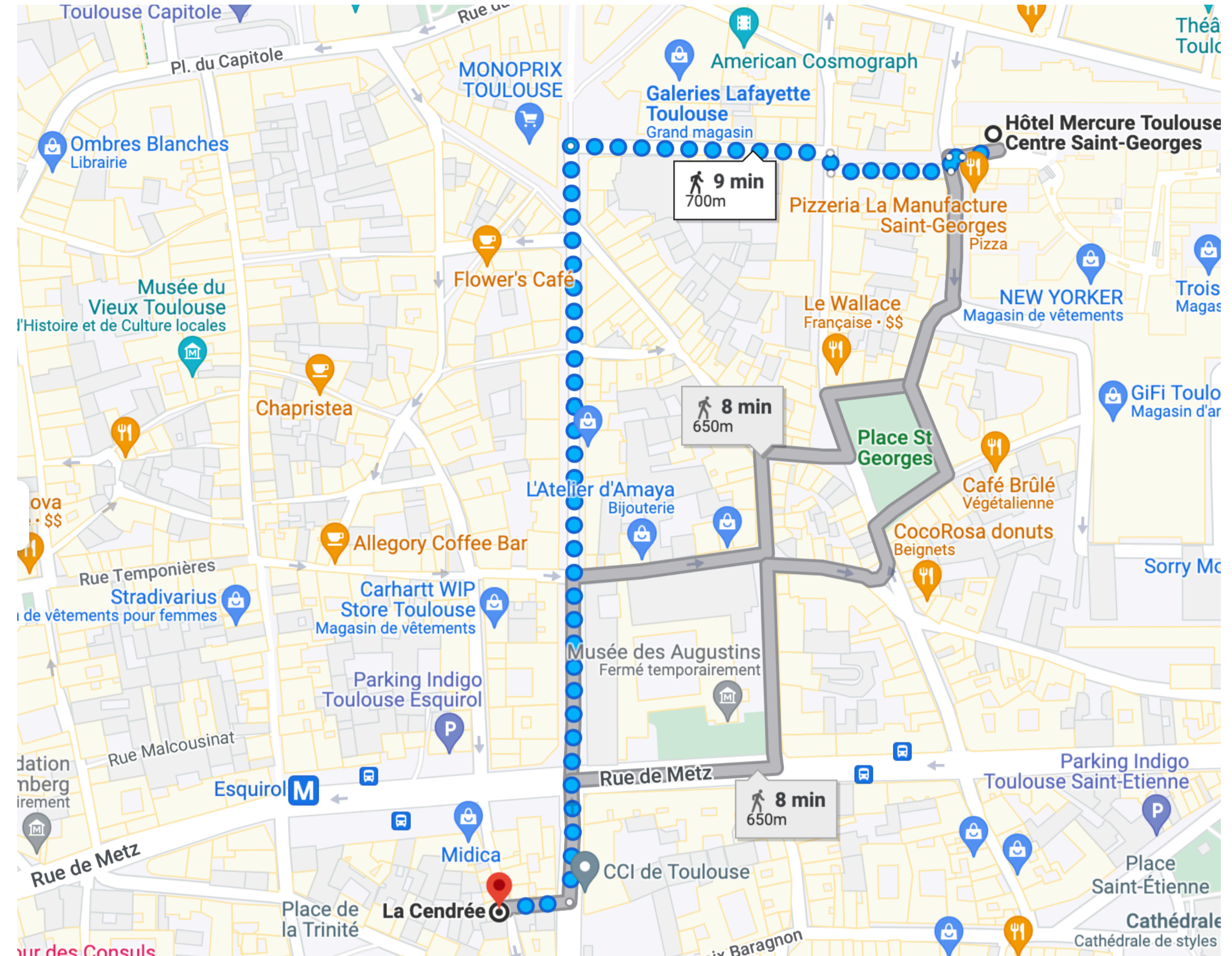
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Social dinner



- Restaurant “La Cendrée”
- 11 Rue des Tourneurs,
31000 Toulouse
- 43.600072370791935,
1.4452648174941414
- Meeting at 20h





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Feedback, debriefing, discussions

- Format of the school (e.g., lessons versus practicals, duration)
 - Content of lessons and practicals (e.g., level of complexity, details, density, speed, etc)
 - Missing subjects and topics
 - Social time and interactions
-
- If you have not done it yet, please send back your eval form. This will be helpful to us to improve for the next addition of the school.

Notes out of your forms (5 points statistic)



- Lessons
 - Shorter lessons or more breaks
 - More comprehensive view of Athena capabilities (i.e., WFI).
 - “Rough” topics (e.g, project management)
- Practicals :
 - More in depth involvement of the participants. e.g., scripting, SINPUT creation...
 - ds9, xspec tutorials
 - Practicals following notebooks
 - More practicals (?)
- Organisation and communication
 - Slack, whatsapp channel for (social) organisation
 - Presentation by the participants earlier in the week
 - Avoid pairs from the same lab
-



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Closing words



- All material from the school can be found here:
 - <http://x-ifu-resources.irap.omp.eu/PUBLIC/ATHENASCHOOL/2022/>
 - Presentations: */PRESENTATIONS ; Practicals: */PRACTICALS ; Photos: */PHOTOS
- Admin homework (see my relevant mail)
 - Get in touch with Marjorie once you are back home. She will be dealing with the admin details of your mission
 - You will likely have to provide her with any piece of justification, bills, tickets you manage to gather this week
- Badges and straps
 - You can keep them or leave them, but please do not trash them.
 - We might recycle them for another event...
- Departure
 - there is lunch here for you today
 - We need to free the room for 14:00.
 - You can stay in the lobbies and terrasse of the hotel before your departure at your convenience

Closing words

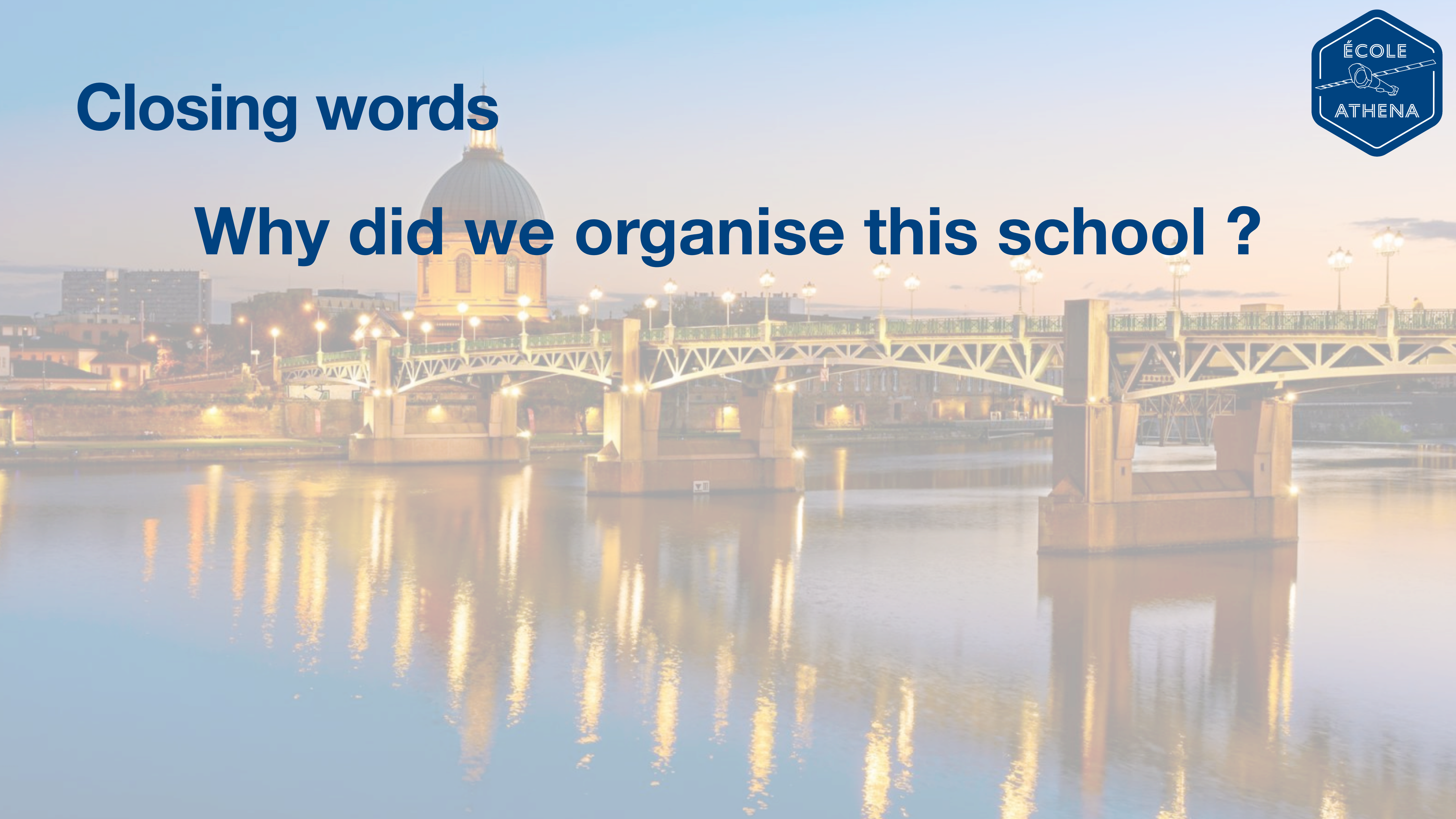


- **Teachers:** Vincent Albouys, Xavier Barcons, Didier Barret, Nicolas Clerc, Edoardo Cucchetti, Anne Decourchelle, Matteo Guainazzi, Christian Kirsch, François Mernier, Philippe Peille, Pierre-Olivier Petrucci, Susanna Vergani, Natalie Webb, Joern Wilms
- **SOC:** Vincent Albouys, Didier Barret, Anne Decourchelle, Astrid Lamberts, Philippe Laudet, Sophie Maurogordato, Pierre-Olivier Petrucci, Etienne Pointecouteau, Delphine Porquet, Patrice Theulé, Natalie Webb
- **LOC:** Nicolas Clerc, **Marjorie Cloup**, Elias Kammoun, François Pajot (IRAP), Etienne Pointecouteau (IRAP), **Maëva Voltz**

Closing words



Why did we organise this school ?



Closing words



You were the very reason

You are the future of (X-ray) astronomy

and

(whether you believe it or not)

You will be running the show by Athena's launch

Closing words



Thanks to all of you !

For you participation,

For the fruitful exchanges,

For your energy,

For your enthusiasm,

For your motivation !