

4-8 October 2021 - Toulouse

# Labex UnivEarthS FALL SCHOOL

The contribution of space science  
to astrophysics and geosciences

PAST, PRESENT AND FUTURE EXPLORATION OF THE SOLAR SYSTEM:  
EXAMPLES OF SATURN, JUPITER & MARS

Sébastien Rodriguez, IPGP

EXPLORING THE VIOLENT UNIVERSE:  
THE PLACE OF SPACE IN MULTI-MESSENGER STRATEGIES

Alexis Coleiro, APC

STUDYING THE EARTH FROM SPACE

Gauthier Hulot, IPGP

SPACE & COSMOLOGY

Jean-Luc Starck, AIM

Includes visit to La Cité de l'Espace

All expenses (transportation, accommodation, meals) are covered by the Labex UnivEarthS.

INFORMATION AND APPLICATIONS:

[www.univearths.fr](http://www.univearths.fr)





# AGENDA

## Monday 4 October

- 8:10** Meeting at **Gare Paris Montparnasse - Hall 2** for those travelling to Toulouse by train
- 8:52** Departure to Toulouse
- 13:14** Arrival at Gare Toulouse Matabiau
- 13:30** Check-in & lunch in Le Grand Hôtel d'Orléans
- 14:30** **LECTURE: Studying the Earth from space I** (90 min)  
**Gauthier Hulot**, IPGP (Université de Paris / CNRS)
- 16:00** Break
- 16:30** **GUEST LECTURE: Bulding a space mission at CNES** (90 min)  
**Juliette Lambin**, Head of the Science, Exploration, Observation department, CNES
- 18:30** Welcome cocktail
- 19:30** Dinner

## Tuesday 5 October

- 9:00** **LECTURE: Studying the Earth from space II** (90 min)  
**Gauthier Hulot**, IPGP (Université de Paris / CNRS)
- 10:30** Break
- 11:00** **LECTURE: Space & Cosmology I** (90 min)  
**Jean-Luc Starck**, AIM (CEA / CNRS / Université de Paris)
- 12:30** Lunch
- 14:30** **POSTER SESSION** (90 min)
- 16:00** Break
- 16:30** **LECTURE: Space & Cosmology II** (90 min)  
**Jean-Luc Starck**, AIM (CEA / CNRS / Université de Paris)
- 19:30** Dinner

## Wednesday 6 October

- 8:30**      **LECTURE: Studying the Earth from space III** (90 min)  
**Gauthier Hulot**, IPGP (Université de Paris / CNRS)
- 10:00**      Break
- 10:30**      **LECTURE: Space & Cosmology III** (90 min)  
**Jean-Luc Starck**, AIM (CEA / CNRS / Université de Paris)
- 12:00**      **GUEST LECTURE: Working for the space industry** (60 min)  
**Marina Gruet**, Airbus Defense and Space
- 13:00**      Lunch
- 14:30**      **LECTURE: Past, present and future exploration of the solar system: Examples of Saturn, Jupiter & Mars I** (90 min)  
**Sébastien Rodriguez**, IPGP (Université de Paris / CNRS)
- 16:00**      Break
- 16:30**      **LECTURE: Exploring the violent universe: The place of space in multi-messenger strategies I** (90 min)  
**Alexis Coleiro**, APC (Université de Paris / CNRS / CEA)
- 19:45**      Social dinner in city centre, in *Les Caves de la Maréchale*

## Thursday 7 October

- 9:00**      **LECTURE: Past, present and future exploration of the solar system: Examples of Saturn, Jupiter & Mars II** (90 min)  
**Sébastien Rodriguez**, IPGP (Université de Paris / CNRS)
- 10:30**      Break
- 11:00**      **LECTURE: Exploring the violent universe: The place of space in multi-messenger strategies II** (90 min)  
**Alexis Coleiro**, APC (Université de Paris / CNRS / CEA)
- 12:30**      Packed lunch
- 13:00**      Transportation to La Cité de l'Espace
- 13:30**      **VISIT: La Cité de l'Espace**
- 14:30**      **IMAX movie: Chasseurs d'Astéroïdes (Asteroid Hunters) 3D** (45 min)
- 17:00**      End of visit and return to the hotel
- 17:30**      **POSTER SESSION** (90 min)
- 19:30**      Dinner

## Friday 8 October

- 9:00**      **LECTURE: Past, present and future exploration of the solar system: Examples of Saturn, Jupiter & Mars III** (90 min)  
**Sébastien Rodriguez**, IPGP (Université de Paris / CNRS)
- 10:30**      Break
- 11:00**      **LECTURE: Exploring the violent universe: The place of space in multi-messenger strategies III** (90 min)  
**Alexis Coleiro**, APC (Université de Paris / CNRS / CEA)
- 12:30**      Lunch
- 13:45**      Check-out & meeting at Gare Toulouse Matabiau
- 14:26**      Departure to Paris
- 19:03**      Arrival to Gare Paris Montparnasse

	Monday 4 October	Tuesday 5 October	Wednesday 6 October	Thursday 7 October	Friday 8 October	
9:00	Train Paris - Toulouse 8:45 - 13:14	Lecture Studying the Earth from space Gauthier Hulot	Lecture Studying the Earth from space Gauthier Hulot	Lecture Exploration of the solar system Sébastien Rodriguez	Lecture Exploration of the solar system Sébastien Rodriguez	9:00
10:00		Packed lunch	Break	Break	Break	10:00
11:00		Lecture Space & Cosmology Jean-Luc Starck	Lecture Space & Cosmology Jean-Luc Starck	Lecture Exploring the violent universe Alexis Coleiro	Lecture Exploring the violent universe Alexis Coleiro	11:00
12:00		Lunch	Guest Lecture Marina Gruet Airbus Defence & Space	Packed lunch	Lunch	12:00
13:00			Lunch	Cité de l'espace Visit		13:00
14:00						
15:00	Lecture Studying the Earth from space Gauthier Hulot	Poster Session	Lecture Exploration of the solar system Sébastien Rodriguez		Train Toulouse - Paris 14:26 - 19:03	15:00
16:00	Break	Break	Break			
17:00	Guest Lecture Juliette Lambin Science, Exploration, Observation, CNES	Lecture Space & Cosmology Jean-Luc Starck	Lecture Exploring the violent universe Alexis Coleiro			17:00
18:00				Poster Session		18:00
19:00	Welcome cocktail					19:00
20:00	Dinner	Dinner	Social dinner	Dinner		20:00

# SPEAKERS



**Alexis Coleiro** is professor at Université de Paris, working at AstroParticule & Cosmologie laboratory (APC, Université A majority of you Paris / CNRS / CEA). He studies high-energy sources from a multi-messenger perspective (at the interface between electromagnetic radiation, neutrinos and gravitational waves).

**Lecture:** *Exploring the violent universe - The place of space in multi-messenger strategies*



**Gauthier Hulot** is a senior CNRS scientist, working at the Institut de Physique du Globe de Paris (IPGP, Université de Paris / CNRS). His research focuses on the investigation of the main magnetic field produced within Earth's core.

**Lecture:** *Studying the Earth from space*



**Sébastien Rodriguez** is professor at Université de Paris, working at the Institut de Physique du Globe de Paris (IPGP, Université de Paris / CNRS). Expert in planetology, his current research activities concern the study of the geology and climate of Titan, the largest icy moon of Saturn.

**Lecture:** *Past, present and future exploration of the solar system - Examples of Saturn, Jupiter & Mars*



**Jean-Luc Starck** is is director of research at the Institute of Research into the Fundamental Laws of the Universe, Département d'Astrophysique, UMR Astrophysique Instrumentation Modélisation (AIM, CEA / CNRS / Université de Paris). He leads Cosmostat, an interdisciplinary research group at the interface between cosmology and statistical methods

**Lecture:** *Space & Cosmology*



**Juliette Lambin** is Head of «Science, Exploration, Observation» of Centre national d'études spatiales (CNES, the French Centre for Space Studies). With her team, she is in charge of collecting, instructing and supporting the needs and issues of the scientific community, from the preparation of future orbital systems to the scientific exploitation of ongoing missions.

**Guest lecture:** *Bulding a space mission at CNES*



**Marina Gruet** is a research engineer at Airbus Defense and Space. She did her PhD thesis on Artificial Intelligence applied to the prediction of the impact of solar activity on the Earth's environment.

**Guest lecture:** *Working for the space industry*

# INFORMATION

## GARE PARIS MONTPARNASSE

Place Raoul-Dautry  
75015 Paris

A majority of you travel to Toulouse by *Ouigo* train, departing from **Gare Paris Montparnasse - Hall 2**.

**Be careful**, with *Ouigo* train ticket, its required to at the station at least 30 minutes before the departure time, and *Ouigo* trains leave at Gare Montparnasse Hall 2, a 15-minute walk from the «Montparnasse Bienvenüe» metro station.





## GRAND HÔTEL D'ORLÉANS

72 rue Bayard  
31000 Toulouse  
05 61 62 98 47

The lectures, meals and accommodation will take place in The Grand Hôtel d'Orléans, and its brasserie La Ripaille.

The Grand Hôtel d'Orléans and La Ripaille are located in the historical heart of Toulouse, facing Matabiau train station. Only 5 minutes of walk from the Capitol square and 1 minute away from the train station and the Canal du Midi.

You will be ideally located to visit Toulouse by walk.

### PRACTICAL INFO:

- Breakfast starts at 6am
- Reception is available at all time: to reach the reception, please call 9 from the room phone
- On the last day, rooms must be vacated before the start of the meeting
- For Wifi: connect to 'GRAND HOTEL D'ORLEANS' network - no password required



## LES CAVES DE LA MARÉCHALE

3 rue Jules Chalande  
31000 Toulouse  
05 61 23 89 88

Wednesday's social dinner will take place at Les Caves de la Maréchale, at a 15-minute walk from le Grand Hôtel d'Orléans.



# **HEALTH MEASURE**

***REMINDER: A 'Pass sanitaire' is required to all the services (hôtel, transportation) and activities (Restaurant, Cité de l'Espace) provided during the Fall School.***

# **CONTACT**

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