



SPACEUP

TOULOUSE

Programme



ESA
ariane

ISAE-SUPAERO
Toulouse, France

February, 4th & 5th, 2017

The SpaceUp Toulouse 2017 organizing team would like to especially thank
ISAE-SUPAERO for hosting the event!





WELCOME TO SPACEUP TOULOUSE 2017!

The SpaceUp Toulouse organizing team welcomes you to the fourth SpaceUp Unconference in France. We are very proud we were able to bring this successful and fun concept to our region and to have found a great location and a great setup, but... You will have to help us make it a success in the upcoming two days!

We have provided you with a location, an empty grid and a few special-guests, but now it's up to you to fill the grid with great space content. Just stick a post-it note in the slot that best suits your idea and tell us all about it! Most important of all, have fun!

Your organizing team @SpaceUp_FR

– Antoine, Clara, Daniel, Délia, Florian, Gautier, Isabelle, Isabelle, Mathilde, Patrick, Pierre, Victoria.

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SpaceUp : how it works

SpaceUp is an unconference, also known as a user-generated conference or a BarCamp. There are no spectators at SpaceUp, only participants.

All attendees are expected to give a demo, present a talk, or participate in a panel or roundtable. It's not as scary as it might sound, though. Sessions at SpaceUp are conversations, just like every conversation you've had (or wanted to have) at any other conference. The only difference is that the sessions can be planned on the spot, which means we're sure to be talking about topics we find interesting.

Registration and badges

On-site registration works a lot like any other conference; you'll receive a badge (keep it on you at all times!), a schedule, and maybe some goodies at the front desk. Other attendees are here to meet you, and you're here to meet them. Primarily you should write your name on it, but you should feel free to customize your badge to better reflect who you are.

Introductions

Each day of the SpaceUp will start in the lecture hall 4 with the presentation of all who have registered on the grid for a session that same day. You have one sentence to describe what your session will be about. Choose it wisely: it will help determine how many attendees you will get in your session!

The Session Grid

SpaceUp has many sessions going on at the same time. The only way to keep up with them all is the session grid, a giant board with all the available sessions listed on it.

The session grid starts out empty at the beginning of SpaceUp; only breaks and a few special sessions are scheduled beforehand. Sessions are proposed by writing a synopsis on a post-it and sticking it in one of the slots on the grid. The grid fills up quickly over the course of the morning, but it grows and changes as the day goes on and more ideas surface. It is fine to change your mind and replace or edit your suggestion throughout the event.

A session can take a few different formats: a presentation with Q&A, a demo, a panel of experts, or a roundtable. Some of the most interesting sessions are proposed as open-ended questions. (“Should NASA continue developing hardware?” “What’s the cheapest way to do science in space?”). Project demonstrations make great sessions, too, especially when they’re hands-on.

There should be at least one session about SpaceUp itself, to talk about what we can do better, both on the spot and for the next SpaceUp. You’re more than welcome to start other sessions about SpaceUp, especially if you think there’s something wrong.

T-5 Talks and other presentation formats

If you’re itching to give a presentation with slides, we have just the format for you: it’s called Ignite. Each speaker gets 5 minutes to talk, with 20 slides that rotate automatically every 15 seconds.

At SpaceUp, we call our Ignite-format talks T minus 5.

If you need even more time you can use a ‘normal’ free-format 20 minutes slot. Please bear in mind that all slots end 5 minutes prior to the following slot, to allow people to move from one room to another. Presentations start at their designated hour. Room moderators will take care all talks start and end sharply on time.





Practical information

Wifi and Internet access

An individual wifi access code will be provided to you at your arrival during on-site registration.

Access to the campus

Location : 10, avenue Édouard Belin - Toulouse

GPS coordinates : Latitude N 43° 34' 00'' - Longitude E 1° 28' 29''

Map on page 8.

→ FROM THE AIRPORT OF TOULOUSE-BLAGNAC

You can take the shuttle, the tram T2 or the bus n°30 to go to the city centre.

→ BY SUBWAY

Note that you can change from metro line A to line B at Jean Jaures station.

- **Least walking :**

Take metro line B direction « RAMONVILLE » to the last stop "RAMONVILLE". Then take the bus (Tisséo) 27 for « Lycée Toulouse-Lautrec » and get off at « ISAE CAMPUS SUPAERO ».

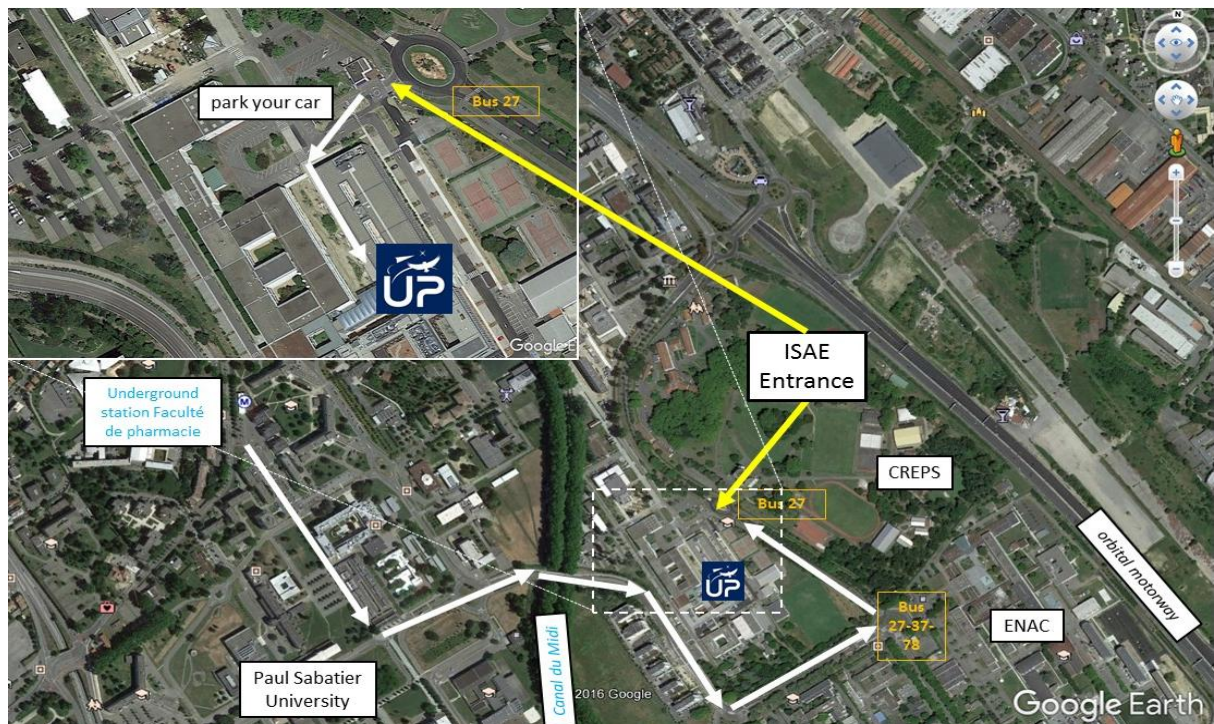
- **Fastest :**

Take metro line B direction « RAMONVILLE » up to "FACULTE DE PHARMACIE" station. Then take the bus (Tisséo) n°78 for « Lycée de St Orens » and get off at « ENAC ». The campus of ISAE-SUPAERO is located 5mns walking distance from here.

- **Least connections :**

Take metro line A direction « BALMA-GRAMONT » up to « JOLIMONT » station. Then take the bus (Tisséo) n°37 for « RAMONVILLE » and get off at « ENAC ». The campus of ISAE-SUPAERO is located 5mns walking distance from here.





→ FROM THE CITY CENTRE BY BUS

At JOLIMONT station (metro line A), take the bus (Tisséo) n°37 for « RAMONVILLE » and get off at « ENAC ». The campus of ISAE-SUPAERO is located 5mns walking distance from here.

→ BY THE RING ROAD

Take the outer ring road (direction Montpellier), then follow the direction "Toulouse-centre/Foix / Tarbes" (green sign). Leave at exit 20 and follow « Complexe scientifique de Rangueil ».

→ BY TAXI

Ask for "Complexe scientifique de RANGUEIL" then the campus of ISAE-SUPAERO (in front of the CREPS).

Dinner

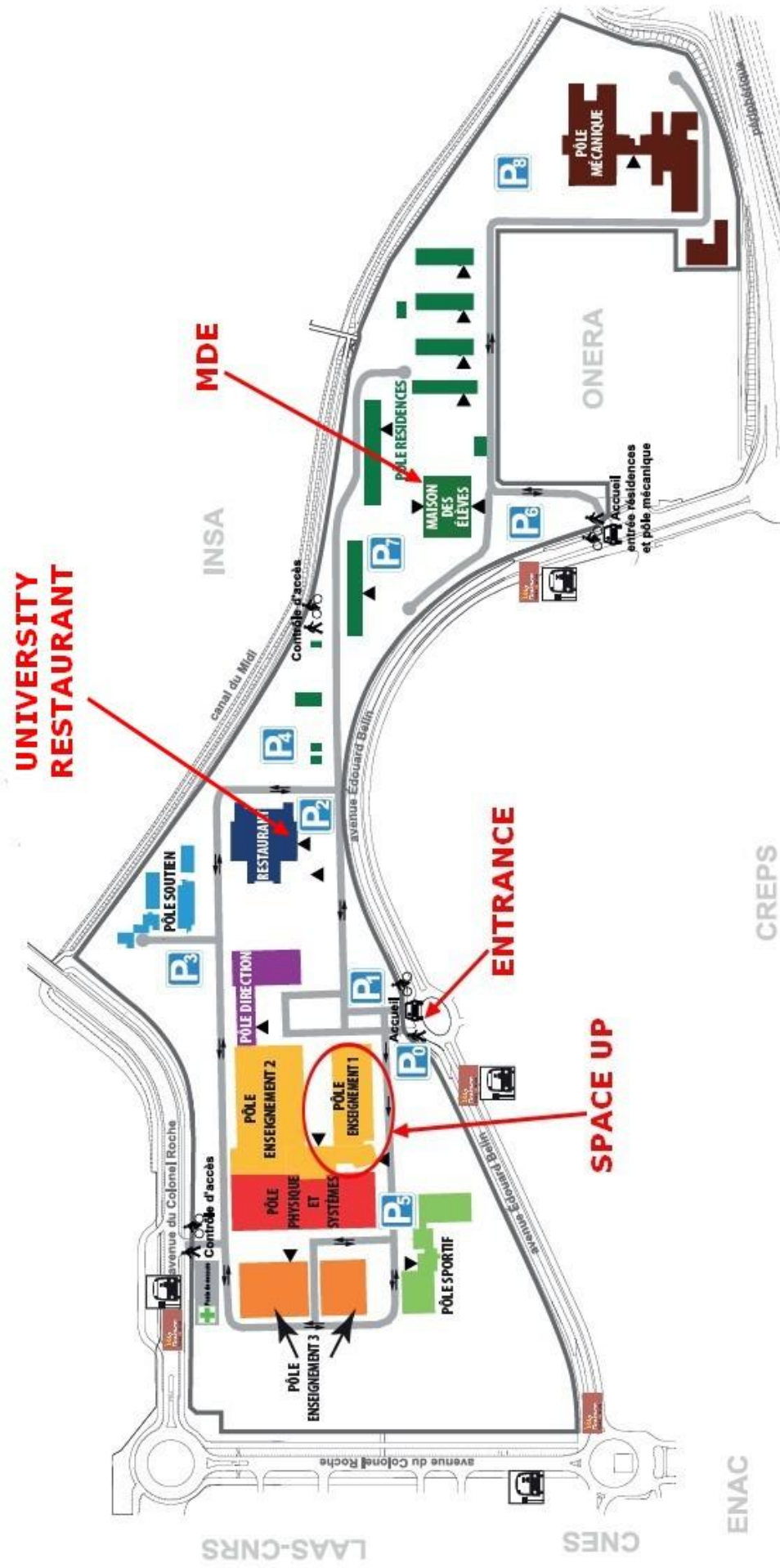
If you want to continue exchanging during the evening, feel free to join us at the MDE (see on map page 8): pizzas will be ordered (at your own expense) and discussion will extend!

Persons to contact

- Daniel : +33 6 78 50 22 77
- Clara : +33 6 84 58 95 70

Plan du campus ISAE-SUPAERO

10 avenue Édouard Belin - Toulouse





Schedule

PROGRAM DAY 1 : Saturday 4 Feb.

Time	Program	Location
08:45 – 09:30	Registration and morning coffee	Central hall / Buffet room
09:30 – 10:00	Introduction	Lecture hall 4
10:00 – 11:00	Grid sessions – SEE GRID	Session rooms
11:00 – 12:00	Special guest: Sylvestre Maurice	Lecture hall 4
12:00 – 13:30	Lunch + fill the grid!	University Restaurant
13:30 – 14:30	Special guest: Léopold Eyharts	Lecture hall 4
15:00 – 16:00	Grid sessions – SEE GRID + light painting	Session rooms
16:00 – 16:20	Coffee break	Buffet room
16:20 – 17:40	Grid sessions – SEE GRID + light painting	Session rooms
17:40 – 18:00	T - 5	Lecture hall 4
18:00 – 18:30	Video of Thomas Pesquet	Lecture hall 4
18:30	Day 1 closing	

PROGRAM DAY 2 : Sunday 5 Feb.

Time	Program	Location
09:00 – 09:30	Morning coffee + fill the grid!	Central hall
09:30 – 10 :00	T - 5	Lecture hall 4
10:30 – 11:10	Special guest : Martin Giard	Lecture hall 4
11:20 – 12:20	Grid sessions – SEE GRID + Quizz session	Session rooms
12:20 – 13:30	Lunch + fill the grid !	University Restaurant
13:30 – 14:50	Grid sessions – SEE GRID	Session rooms
14:50 – 16:00	Coffee break	Buffet room
15:00 – 15:40	Special guest : Pascal Régnier	Lecture hall 4
15:40 – 16:00	Closing ceremony	Lecture hall 4

Please note that none of the program items are mandatory, so feel free to take a break whenever you want!



Special guest speakers

SYLVESTRE MAURICE

Sylvestre Maurice is a **planetologist** at IRAP (Research Institute for Astrophysics and Planetology) and **astronomer** at the Observatoire Midi-Pyrénées.

Graduated from SUPAERO in 1990, he is specialist in **Solar System exploration** and thus took part in several NASA and ESA missions: he studied Saturn's magnetic field and environment with Cassini's data; he contributed, with its team, to the discovery of water ice at the Moon's poles; with the same team, he discovered water at Mars' equator thanks to Mars Odyssey mission, and also water ice at Mercury's poles thanks to Messenger mission.



Moreover, he is well-known for being specialist on **Curiosity's** instrument **ChemCam**. He is now working on its successor for the next rover of NASA mission Mars 2020 : **SuperCam**.

LEOPOLD EYHARTS



Léopold Eyharts is a **French ESA astronaut**. He is French test pilot, and was selected by CNES (the French space agency) in 1990 to become an astronaut.

After a training in Russia, he participated in the French-Russian mission **Pegase** in 1998 in the former space station Mir, and performed several scientific experiments during his three weeks in space. In 2008, he flew on the Space Shuttle Atlantis to the ISS, and was involved in the installation and configuration of the brand new European laboratory **Columbus** and other new Japanese and Canadian equipment for the ISS.

He now works on post-flight monitoring activities for ESA astronauts.

During the SpaceUp, he will share with you his three-month-space-experience, and you'll have the opportunity to ask him all your **questions about human space flights!**

MARTIN GIARD

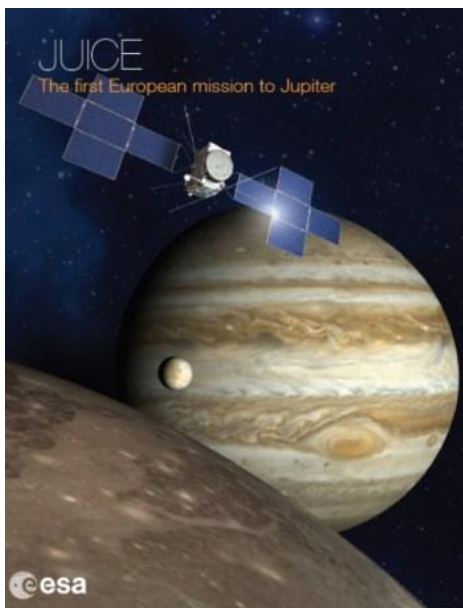
Martin Giard is a senior researcher at IRAP (Research Institute for Astrophysics and Planetology) – Paul Sabatier University (Toulouse), and was IRAP director for 4 years between 2011 and 2015. His work is focused on space observation in the infra-red domain, and he is particularly interested in the **observation of the remote Universe, aiming to understand the formation of stars and galaxies.**



He worked several years on the **Planck** mission as Co-Principal Investigator of one of the instruments, and is also involved at high level in research organisation in France, since he is scientific delegate for space affairs for the National Institute of Universe Sciences.

His presentation during the SpaceUp Toulouse 2017 will be focused on his experience in the field of space astrophysics, and how it can help us to better understand our Universe: **"Space astrophysics : a window on the origins of our Universe"**.

PASCAL REGNIER



Pascal Régnier is an engineer at our sponsor Airbus, and is currently working on the **ESA Juice mission** (Jupiter ICy moons Explorer). This mission (launch scheduled in 2022) will explore Jupiter satellites, which are of a great interest for scientists to understand the formation of our Solar System and the apparition of life.

But how do we get there? A lot of difficulties occur when you want to travel so far away from Earth: ensure the probe has enough energy to survive,

protect the probe from the radiations or compute its trajectory. Pascal Régnier, as specialist of guidance, navigation and control will tell you more about this question during SpaceUp Toulouse 2017: **how do you locate and control a probe which is 750 million km away from you with a communication delay of 40 minutes?**

THOMAS PESQUET

Thomas Pesquet is a **French ESA astronaut**. Graduated from SUPAERO in 2001, he is also a commercial pilot for AirFrance, where he started flying the Airbus A320 in 2006.

Thomas was selected as an ESA astronaut in May 2009. After graduation, he worked as a Eurocom, communicating with astronauts during spaceflights from the mission control centre. To be ready for a space mission, he received further technical and operational training in Europe, Russia and the USA.

In 2014, Thomas was assigned to a **6-month mission on the International Space Station**, the expeditions 50 and 51. He has been in space since 17 November 2016.

As you can imagine, he will not be present at our SpaceUp... But he left us a message! **Don't miss Thomas Pesquet's video from the ISS answering to the questions from some lucky SpaceUp attendees.**





SpaceUp Toulouse 2017 organizing team



Daniel Chrétien

Keen on Universe sciences and Space technics, I am enrolled in a Master in Astrophysics and Astronautic at University of sciences and technics of Tolosa. I already attended two Space Up (X and london 2016), I decided to lead the organizing team of the next Space Up France.



Victoria Da Poian

2nd year student at ISAE-SUPAERO in Toulouse, I wish to become an astronaut. In order to fulfill my goal, I am studying Aerospace Engineering and learning Russian. I seize every opportunity to join a new project : Space Summer School in Samara (Russia), CubeSats, and organizing the next SpaceUp France ! I hope to see you there, see you in Toulouse in 2017 !



Clara Verges

Fascinated by astronomy and the night sky since my youngest age, I now study astrophysics and space science at École polytechnique and ISAE-Supaero. I aim to become an astrophysicist specialized in space instrumentation: space exploration is such a powerful help for astrophysics! I was involved in the organisation of the previous SpaceUp in France (SpaceUp X in November 2015) and I am a member of my university student space center and astronomy club.



Isabelle Maroger

I have been very interested in space since I was a child. Fond of astronomy and astrophysics, I have studied in ISAE-SUPAERO for two years in order to achieve my dream : working in space exploration. This is why I am part of my school student space club, astronomy club and I am involved the organisation of the next SpaceUp France in Toulouse.



Isabelle Desenclos

Space exploration enthusiast. Engineer on space projects : Gaia satellite, telecoms satellites,... and Ground Control Segments. I like sharing my passion with children and people, for example within writing my website “Rêves d’espace” (in french).

I was involved in the organisation of the previous SpaceUp in France (SpaceUp Toulouse in 2014 and SpaceUp X in November 2015),



Gautier Nguyen

Former student mechanical engineering at Ecole Polytechnique and future astrophysics student at ISAE-Supaero, I wish to become an aerospace engineer specialized in either rocket science or aerodynamics .Member of my university space student center, I have previously worked on CubeSats and on solid propellant modelling. After attending several Space Up for the last past two years (Cologne, ISU, X and Helsinki), I finally decided to join, the other side : the organizing team.



Mathilde Le Clerc de Bussy

Beginner in astronomy, I’m a 2nd year student in ISAE-Supaero. Fascinated by the atmosphere created by the previous Space Up in Paris, I’m glad to bring my tiny help to the organisation of the next Space up! This world is all new to me but it captivates me everyday a little bit more!



Patrick Fleith

I am currently enrolled in an advanced master in Space Systems Engineering at ISAE – SUPAERO. Former student in Physics, Chemistry, Materials Science and Engineering at Bordeaux Institute of Technology, I carried out my master’s thesis in Space Propulsion.

I’m fascinated by Space technologies, Human exploration and dream of being involved in the first manned mission towards Mars.



Pierre Courgeon

I am passionate by space and especially by space exploration. I would like to work in that field when I will be an engineer. That is why I have been studying space engineering at ISAE-Supaero for two years. I am glad to be part of the organization in the next SpaceUp in Toulouse !



Délia Cellarier

Fascinated since my youngest age by the vastness of space and its range of possibilities, I am convinced that space exploration deserves all our efforts. Now in 2nd year at ISAE-SUPAERO, I hope that one day I can contribute to those efforts and take part in ambitious projects of space agencies. For now, I look forward to share this aspiration with the participants of the next Space Up !



Antoine Grandjean

I am very interested in astronomy and astrophysics since my childhood, I am pursuing my passion into my dream job : astrophysicist. I am a second year student in a master degree of Astrophysic, Science of Space and Planetology at the University toulouse III : Paul Sabatier. Curious about everything, I wan't to learn more about the activity without wich astrophysics can't be : space technology. That's why I'm glad to help in the organization of the new SpaceUp of Toulouse !



Florian Gautier

Fascinated by Space and especially by Astrophysics for years, I am a 2nd year student at ISAE-SUPAERO in Toulouse and president of its space club. I really want to be involved in the development of space travels (following Elon Musk's project with great interest). This is why I decided to help organizing the next SpaceUp. See you in Toulouse!



Sponsors & partners

Our hosting partner:

ISAE-SUPAERO

An Institute of Excellence in the European capital of Space

Founded in 1909, SUPAERO is the first aeronautical engineering institute in the world. Since its creation, its graduates have played a trailblazing role in the technological and industrial development of the aerospace sector, making France and Europe a global aerospace leader.

Today, ISAE-SUPAERO is a world leader in aerospace engineering higher education with over 1 700 students from 45 countries, living in a newly renovated and fully-equipped campus in Toulouse. Known as “La Ville Rose”, in reference to the colour of the city’s many historical brick buildings, Toulouse is not only the number three university town in France, but also the European capital of aeronautics and space.



Graduates actors in Space

Four of today’s European astronauts attended ISAE-SUPAERO: the Frenchmen Jean-François Clervoy (X-SUPAERO 1983) and Thomas Pesquet (ISAE-SUPAERO 2001), and the Italians Samantha Cristoforetti (ISAE-SUPAERO research project in 2000) and Luca Parmitano (ISAE-SUPAERO 2009 Advanced Master’s program graduate)along with countless other pioneers, researchers and leaders in aeronautics and space such as Pierre Fabre, Sylvestre Maurice, etc.

A passion for Space

As the motto of this school — “*Excellence with passion*” — represents it, many came to ISAE-SUPAERO to live their passion for Space. These space enthusiasts may be involved in lots of school clubs (Supaero Space Section, the Astronomy Club, Mars Analog Mission, the Cubesat Club...) or even take part in real missions led by space agencies in partnership with ISAE-SUPAERO (Insight, Entrypsat, Eye-Sat, Mars 2020...).

www.isae-sup aero.fr

Our sponsors:

AIRBUS



Airbus is an international pioneer in the aerospace industry, a leader in designing, manufacturing and delivering aerospace products, services and solutions to customers on a global scale. A commercial aircraft

manufacturer, with Space and Defence as well as Helicopters Divisions, Airbus is the largest aeronautics and space company in Europe and a worldwide leader.

Airbus is a major contributor to space exploration and human spaceflight, as well as a leading manufacturer of Earth observation, navigation, science and telecommunications satellites. Its portfolio ranges from the ExoMars rover and the European Service Module for the Orion spacecraft to the Ariane 5 launcher, to be followed in 2020 by the Ariane 6.

Airbus supports school education in STEM fields (science, technology engineering and mathematics). Through challenging competitions and projects, the Group aims to create a dialogue, inspire interest in technology, computer sciences and natural sciences, and convey just how fascinating aerospace can be.

www.airbusgroup.com

FONDATION ARTS ET METIERS



The Fondation Arts et Métiers aims at facilitating access to scientific and technological culture, to promote research and education in these areas, to promote the work of engineers in economic activities, and to contribute to the remembrance

of techniques and industries.

The “Fondation Arts et Métiers” is closely linked with the “Société des Ingénieurs Arts et Métiers ». With 32 000 former students of Arts et Métiers ParisTech, it is the largest European association of engineering graduates of a single institution. Its missions are to assist its members in case of difficulties, advising Arts et Métiers engineers in their careers, and to keep alive the spirit of brotherhood and solidarity that drives its members.

The association has a Job & Career Center which provides advice, guidance and information? The service passes along job offers, provides information on

internships, psychometric tests, background information on companies, recruitment consultancy services, career management...

www.fondam.org

FONDS DE SOUTIEN AUX INITIATIVES ETUDIANTES



The “Fonds de Soutien aux Initiatives Etudiantes” (Support Fund for Student Initiatives) aims at encouraging students to throw themselves into community work by supporting projects and inter-campus initiatives.

L’Université Fédérale de Toulouse (Toulouse Federal University) brings together more than 100 000 students in 4 universities, 10 engineering schools and specialized schools (veterinary, trade ...) and 5 national research organizations. Not less than 30,000 degrees awarded in 2013-2014. The missions of Université Fédérale de Toulouse are based on pooling and sharing, whether in research activities (coordination of doctoral studies, development of multidisciplinary training projects ...) or in the student and social life (improvement of academic services for students).

SCISYS SPACE



SCISYS SPACE is a leading provider of integrated solutions and products for ground & on-board systems.

Within the ground segment, SCISYS is a reliable and experienced partner for monitoring & control, data processing, automation, autonomous & intelligent systems, system modelling & simulation, infrastructures, data services and applications. In the area of on-board systems, our activities range from complete on-board software systems to subsystems for the data processing, attitude and orbit control as well as instrument control units. We are also specialised in the provision of on-site engineering and operations support and professional consulting services for the management and procurement of space and space-related projects. Until today, SCISYS supported over 50 national and international space missions worldwide.

SCISYS SPACE is looking for you talent!

www.scisys.co.uk

ASSOCIATION AERONAUTIQUE ET ASTRONAUTIQUE DE FRANCE



The 3AF (Aeronautics and Astronautics Association of France) is a French aerospace learned society. Its mission is to advance the aerospace profession, stimulate progress in state of the art aerospace science and technology and represent the profession in public policy discussions. 3AF is a forum for knowledge exchange:

Unite	Share	Enlighten	Advance
a network of more than 1500 members, 60 companies from the scientific aerospace community	international conferences and symposiums per year, experts publications	A scientific society, an expert pool of knowledge consulted by decision makers and media	20 technical commissions which contribute to advancing the aerospace industry

www.3af.fr

INTERNATIONAL SPACE UNIVERSITY



The International Space University provides graduate-level training to the future leaders of the global space community. In its two-month Space Studies Program and one-year Master program, ISU covers all disciplines related to space programs and enterprises, space science, space engineering, systems engineering, space policy and law, space business and management, and space and society. Since 1987, ISU has graduated more than 3900 students from over 100 countries. Together with hundreds of lecturers worldwide, ISU alumni represent an extremely effective network of space professionals and leaders that actively facilitates individual career growth, professional activities and international space cooperation.

www.isunet.edu

Our media partners and other partners:



LA CITE DE L'ESPACE is a scientific theme park focused on space and its conquest, dedicated to both astronomy and astronautics.

www.cite-espace.com



REVES D'ESPACE is a French website on space.

www.reves-d-espace.com



ESPACE&EXPLORATION is a French magazine on Space and Exploration.

www.espace-exploratin.com



ESO is the foremost intergovernmental astronomy organization in Europe. It carries out an ambitious programme focused on the design, construction and operation of powerful ground-based observing facilities enabling astronomers to make important scientific discoveries. ESO also plays a leading role in promoting and organizing cooperation in astronomical research.

www.eso.org



The **CNES** is the French government space agency. Its task is to invent the space systems of the future, bring space technologies to maturity and guarantee France's independent access to space. It is a pivotal player in Europe's space program, and a major source of initiatives and proposals that aim to maintain France and Europe's competitive edge.

www.cnes.fr



By coordinating the financial and intellectual resources of its members, the **EUROPEAN SPACE AGENCY** can undertake programmes and activities far beyond the scope of any single European country.

www.esa.int



LA POSTE is the French mail service. They cannot (yet) deliver mail to the ISS, but thanks to the stamps you'll find in the swag bag, your mail may have a chance to be delivered using a rocket!

www.laposte.fr

AEROMORNING.COM

ACTUALITÉ AÉRONAUTIQUE ET SPATIALE

AEROMORNING is a website on aeronautics and space news.

www.aeromorning.com

