

# SKA-France

Monthly bulletin

February 2018

## SKA-France

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## News from Maison SKA-France

### Kick-off meeting of “Maison SKA-France”



As announced during the First SKA France Day, the SKA-France coordination, together with its private partners, has decided to move towards the “Maison SKA France”. This new structure is intended to be not only a forum for members to organise their participation to the preparatory work for the SKA, but also an instrument in response to the necessity of an innovative financial approach for large research infrastructures.

The “Maison SKA-France” includes today **five research organisms** (CNRS, Paris Observatory, Côte d'Azur Observatory, Orléans University and Bordeaux University) as well as **six private companies** (AirLiquide, ATOS-Bull, Callisto, FEDD, Kalray, Thales).

The kick-off meeting of Maison SKA France took place on **February 1<sup>st</sup>, 2018** in the magnificent Cassini Room of the Observatoire de Paris.



## Women in Science

The United Nations General Assembly adopted a resolution declaring February 11<sup>th</sup> as the “International Day of Women and Girls in Science”. This initiative is intended to achieve full and equal access to and participation in science for women.

The SKA Organisation joined this initiative and published on social networks the following announcement, together with the picture above:

*“At the SKA we are lucky to count with incredible students, scientists, engineers, leaders & policy-makers from all over the world contributing to the project, and we are working towards even more with the Equality Challenge Unit’s Athena SWAN charter which recognises a commitment to advancing the careers of women in science!”*

## Activities

### Meeting with INRIA



*Participants to the SKA-France / INRIA meeting at Paris Observatory*

On February 16, 2018, SKA-France organised a meeting together with the French National Institute for computer science and applied mathematics ([INRIA](#)). After a general overview of SKA provided by the SKA-France director, the main objective of the meeting was to focus on the computing challenges of the project, its workflow and on the organisation of the SKA Regional Centres, extensively described in the presentations by Miles Deegan and Rosie Bolton, from SKAO.

Representatives from several INRIA teams ([STACK](#), [Polaris](#), [Corse](#), [HiePACS](#), [Alpines](#), [TADaaM](#), [Avalon](#), [Storm](#), [Regal/Delys](#)) attended the meeting, together with the Deputy Scientific Directors in charge of three research departments (“Networks, Systems and Services and Distributed Computing”, “Applied Mathematics, Computing, and Simulation”, “Perception, cognition, interaction”).

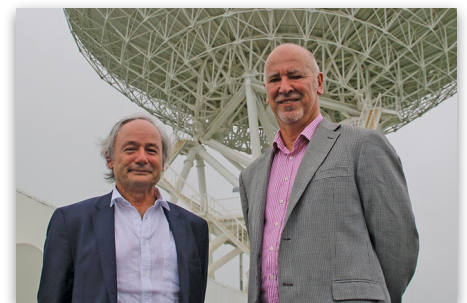
The list of participants and the agenda of the meeting are [available on-line](#).

### Participation to international meetings

The French SKA Industry Liaison Officer (ILO), Gabriel Marquette (CNRS/INSU), represented the Maison SKA-France in two important international meetings.

From February 13 to February 16, G. Marquette attended the **New Zealand annual Computing for SKA Colloquium (C4SKA)**, preceded by the **Science for SKA Colloquium (S4SKA)**, and gave a talk about SKA-related activities in France, focusing in particular on the French industry involvement within the project.

The SKA Organisation has then convened all the ILOs of SKA Member and possible future Member Countries (including G. Marquette) to a meeting organised during the [“Big Science Business Forum 2018”](#) (Copenhagen, 26-28 February 2018).



*G. Marquette (CNRS/INSU) and D. Harre (Research and Education Advanced Network NZ) at Warkworth Radio Astronomical Observatory (image courtesy: [LocalMatters](#))*

## Announcements

### SKA-related Astro-Informatics project financed

The “SKALLAS” (SKA paraLLeL Architecture & Software) project, lead by Dr. Nicolas Gac (L2S) with the participation of both industry and academic partners and collaborators of SKA-France, will be funded within the [2018 call for projects in Astro-Informatics launched by the Interdisciplinary Mission of CNRS](#).

For more details about SKALLAS, see the [SKA-France bulletin of December 2017](#).

## Superconducting Supercomputing with Josephson Junctions - S2J2

14-16 March 2018, Avignon, Palais des Papes, France

Data centre developments and high-performance computing require ever greater power consumption to meet current and future needs and pose environmental, energy and economic challenges. Several technological solutions are emerging to go in pre-industrialization phase, which are based on the use of superconducting metals. In this case the components to make the numerical calculations are not transistors, but Josephson junctions. The applications of superconducting machines are numerous. The challenge now is to think future industrial developments that will allow to transfer this unmatched technology from research laboratories to the industrial area. The “Superconducting Supercomputing with Josephson Junctions - S2J2” international conference has been organised in this framework. The conference will be attended by politicians, economists, scientists and industrialists and is open to a wide participation of the community.

**Conference website:** <http://superconductingelectronics.org/s2j2/>

**SOC:** R. Allaire (Opera d’Avignon), P. Febvre (IMEP-LAHC), A. Ravex (Consultant in Cryogenics and Energetics), G. Waysand (Université Paris VII)

## Hackathon Workshop at ASTRON

23-24 April 2018, ASTRON, Dwingeloo, The Netherlands

In this Hackathon, the organisers are bringing together experts in areas such as data engineering, data mining, cloud, machine learning, and data visualisation etc. from both the astronomy and the coding/industry community. At the Hackathon, small (5-6 person) teams will investigate interesting astronomical data issues. Each team will have complete freedom to formulate interesting astronomical data challenges and work to find innovative solutions to them. This effort is in preparation for the massive, upcoming international collaboration in radio astronomy, the Square Kilometer Array.

Apart from invited participants, up to 70% of the select 30 slots are reserved for any applicant. The organisers actively promote creative participants diverse in gender, seniority, institution, and representation. Expenses related to travel, accommodation (one night at Hotel De Borcken), and food will be covered by ASTRON.

If you have any questions please direct them to Joe Callingham ([callingham@astron.nl](mailto:callingham@astron.nl)) and Amruta Jaodand ([jaodand@astron.nl](mailto:jaodand@astron.nl)).

**Workshop website:** <http://astron.nl/hackathon/>

**SOC:** A. Jaodand (ASTRON/University of Amsterdam), J. Callingham (ASTRON), M. Wise (ASTRON), C. Jackson (ASTRON)

## Evidence of signal from the first stars

In the February 28, 2018 issue of the journal *Nature*, researchers of the [EDGES collaboration](#) announced the measurement of a radio wave absorption profile centred at 78 MHz in the sky-averaged spectrum, a **predicted but never observed signature of primordial hydrogen gas altered by the light from first stars and absorbing the photons coming from the Cosmic Microwave Radiation.**

Major low-frequency existing facilities (such as LOFAR and its French super-station NenuFAR) are now called to test this exciting new result, which is making the scientific community even more interested in future SKA1 observations. Indeed, **as declared by R. Braun** (Science Director of SKAO): *“While the EDGES team have made a detection of the “global signature”, that is averaged over the sky, of the Cosmic Dawn, the SKA will allow very precise measurements to be made of the structures within the Universe during this crucial, early heating phase. It may even be possible for the SKA to form the first direct images of these structures; pointing to the locations of the very first stars and galaxies to have formed.”*



*The EDGES antenna (credits: CSIRO)*

Chiara Ferrari  
for the Maison SKA-France