

# SKA-France

Monthly bulletin

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## SKA-France

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## News from Maison SKA-France

### SKA-France Project Manager

The Maison SKA-France is happy to welcome **Dr. Stéphane Gauffre** (research engineer at LAB, Bordeaux), who joins the MSF Director's team as **Project Manager**. *"I'm electronic engineer at Laboratoire d'astrophysique de Bordeaux (LAB) from CNRS and University of Bordeaux. I'm the head of the electronic group, which is involved in international instrumental programs for radio astronomy and planetology (HiFi instrument on-board of ESA Herschel satellite, ChemCam and SuperCam instruments on board NASA's Curiosity and Mars2020 Mars Rovers, and Wisdom radar on board of ESA Exomars Mars Rover). I was involved in the 3-bit, 4 GSps digitiser development for the ALMA interferometer. I've managed the Bordeaux team for the production of more than 300 ALMA digitiser units.*



S. Gauffre (LAB)

*I work in the frame of SKA radio telescope since 6 years. I am the contact of University of Bordeaux within 3 consortia: AAMID for MFAA (SKA-AIP), Dish for SKA1-MID and WBSPF (SKA-AIP). I've participated to an ANR project, called AAIR (Aperture Array Integrated Receiver), led by the radio astronomy station from Nançay, for developing an integrated receiver for MFAA. For WBSPF, I'm leading the work on the band B receiver, between 4.6 and 24 GHz. Finally, the Bordeaux team collaborates with the NRC Victoria (Canada) to develop the SKA1-MID band 5 receiver prototype, between 4.6 and 15.4 GHz."*

### Preliminary program for the second SKA-France Day

As announced in the [September issue of the SKA-France monthly bulletin](#), the **second SKA-France Day** will be held in Paris on November 23, 2018. The [preliminary program of the meeting is now available](#) at the SKA-France web page. [Registration](#), which is free but compulsory for logistic questions, will be closed on November 12, 2018.



### News from ASKAP & MWA

Interesting results obtained thanks to ASKAP, the Australian SKA precursor operated by CSIRO at the future site of SKA1-LOW, have been recently reported in the journal [Nature](#).

In the first year of operation of ASKAP, 20 fast radio bursts (FRB) have been found. FRB are extremely energetic events, lasting for just milliseconds but releasing an amount of energy equivalent to what the Sun releases in about 80 years. This discovery, which almost doubles the number of FRB known since their first detection in 2007, allowed to prove that FRB are not of galactic origin, but come from the other side of the Universe. Further studies of FRB are crucial for shedding light of their physical origin, and for mapping the missing matter located in the space between galaxies. Interestingly, seven FRB detected by ASKAP at ~1.4 GHz [have been followed-up at ~200 MHz](#) with the other Australian SKA precursor, MWA. The non-detection at those lower frequencies is most likely related to a "turnover" in the FRB spectra, whose physical explanation is under study.

## Activities

### Third AENEAS All-Hands meeting

After the kick-off and first All-hands meetings of the [H2020 project AENEAS](#) “Advanced European Network of E-infrastructures for Astronomy with the SKA” (February 2017, Den Haag, The Netherlands; October 2017, Granada, Spain; March 2018, Nice, France), the [third All-hands AENEAS meeting](#) was hosted by INAF-Istituto di Radioastronomia in **Bologna (Italy) from October 8 to October 10, 2018**. The meeting saw a good French participation, with Y. Stein (Strasbourg Observatory/CDS), M. Caillat (Paris Observatory), C. Ferrari (OCA), C. Perez (INRIA), and J.-P. Vilotte (IPGP - CNRS/INSU).

As in the previous All-hands meetings, the workshop included plenary sessions intended to provide an overall description of the project progress and plans, as well as parallel sessions for focused discussions within the different Work Packages of AENEAS. This meeting, which was immediately following the mid-term review of AENEAS by the EU commission, allowed the members of the collaboration to take stock of achievements, as well as of progresses to be made in the last year of the project.

Particular attention was paid to relate AENEAS developments to SKAO activities. The program therefore included a presentation by two scientists of the SKA Organisation: Dr. Rosie Bolton on behalf of SKA Regional Centres Coordination Group; and Dr. Anna Bonaldi, who presented the SKA Data Challenges currently organised with the aim of testing SKA pipelines and training the community to SKA-like data.

Aware of the need of discussing with other communities deeply involved in the organisation and/or use of large data infrastructures, big data centres currently involved in Big Science projects were invited to give talks. A dedicated meeting was organised on the last day of the conference with invited guests from CERN, SKAO and PRACE organisations.

The next AENEAS All-hands meeting will be held in Manchester (UK) in March 2019.



*Participants in the third All-hands AENEAS meeting in Bologna CNR conference centre*

### SKA presented at the *Journées Calcul et Données* 2018

On **October 25, 2018**, the SKA project was presented by the SKA-France Director at the **national meeting “Journées Calcul et Données”** (Lyon, October 25-27, 2018), a series of scientific and technological events allowing French stakeholders and users to discuss about state-of-the-art developments and needs in the computing and data fields. Very interestingly, applications in several domains were presented, including, e.g., medicine, biology, botany, climatology, oceanography and, of course, astronomy.

All talks, including the SKA presentation (“The Square Kilometre Array: an Exascale radiotelescope”) are [available on-line at the meeting web-page](#). Recorded videos of all presentations will be available soon.

## Announcements

### Workshop “SKA-enabled science in the high redshift universe”

On the **December 19, 2018**, a workshop will take place at Paris Observatory on the **SKA-enabled science in the high redshift universe**, including the 21-cm signal from the Epoch of re-ionisation, cross-correlations with other signals, and intensity mapping. The goal is to highlight the participation of the French community to the SKA project in general and science working groups in particular, but also to foster new commitments from French researchers. The role of the SKA pathfinder NenuFAR in preparing for future SKA observations at low frequencies will also be presented.

Please **contact the organiser ([Benoit Semelin](#))** for further information.

## Fanaroff Lecture 2018

On October 2, 2018, Dr Rob Adam (Director of SKA South Africa) delivered the inaugural Fanaroff Lecture, organised by Manchester University and intended to highlight the importance of science communication for policy making. As stated in the invitation announcement “Dr Adam has previously held roles as Director General of the Department of Science & Technology in South Africa, and as CEO of the South African Nuclear Energy Corporation. He was an active member of the African National Congress during Apartheid, for which he was imprisoned for ten years, during which time he completed his degrees in theoretical physics.

The lecture is named for Dr Bernie Fanaroff, in recognition of his extensive work with the unions in South Africa, his work in government, and his advocacy in championing the Square Kilometre Array (SKA) project and the MeerKAT radio telescope not just as scientific endeavours, but as an important component of building economic growth and national recognition. To astronomers, Dr Fanaroff is most well known for his research into the evolution of radio galaxies, famously reflected in the Fanaroff-Riley classification scheme.”

Dr Fanaroff was present to introduce the inaugural lecture, which was delivered to an audience of invited guests and public. France was represented by the SKA-France Director. We warmly thank Manchester University and the organisers of the meeting, Prof. Anna Scaife (Head, Interferometry Centre of Excellence) and Prof. Francesca Gains (Head of Politics), for this outstanding event.



## SKA Postdoctoral Position in Radio Astronomy Simulations

This position (a 3-year term appointment) will play a **major role in developing solutions for the SKA Science Data Challenge**, and in collaboration with existing Science Team members, this initiative aims to **release increasingly realistic simulated SKA datasets and data products to the international scientific user community with a six-month cadence**. The role will provide the opportunity for 25 percent independent research. The successful applicant's workplace will be located at the SKA Office's new headquarters in Jodrell Bank Observatory.

### Mandatory Qualifications, Experience & Knowledge:

- \* PhD or equivalent, in Astronomy, Physics or a closely related field
- \* Significant familiarity with the major calibration and imaging packages used in Radio Astronomy (AIPS, Miriad, CASA)
- \* Significant familiarity with the underlying algorithms used in calibration and imaging in Radio Astronomy
- \* Experience with installation, maintenance and customisation of astronomical software packages in a Linux/Unix/MacOSX environment
- \* Experience with Python Scripting

### Desirable Qualifications, Experience & Knowledge

- \* Expertise in Software Programming
- \* Expertise in Code Optimisation for multi-processor CPUs
- \* Expertise in Code Optimisation for GPUs

### How to apply:

Please send a CV (including your current remuneration) and covering letter to [jobs@skatelescope.org](mailto:jobs@skatelescope.org), quoting reference PD05. Applications should include a summary of scientific accomplishments, project experience, a resume and the names of at least three professional references. **Closing date for receipt of applications is 28 December 2018.**

Chiara Ferrari  
for the Maison SKA-France