

# SKA-France

Monthly bulletin

October 2019

## SKA-France

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## News from Maison SKA-France

### CNRS/INSU planning ahead symposium for Astronomy & Astrophysics (AA)

The 2019 edition of the AA planning ahead symposium organised by CNRS/INSU was held from October 15 to October 18, 2019. Convened in the Giens Peninsula, participants from partner institutes and research laboratories associated to CNRS/INSU had intense and productive discussions about state-of-the-art results in the AA field, the organisation of the French astronomical community, as well as challenges and priorities of the discipline. Discussions could develop around synthesis documents produced by eight working groups during the first half of 2019 (Thematic challenges; Instruments; Space astronomy; Interplay of European, national and local policies; R&D; Interdisciplinary interfaces; Ressources; Education, training and societal impact), as well as around comments to those documents that the whole French community had the opportunity to post on an open forum until a few days before the colloquium. Given the rapid evolution of the scientific landscape and of the French context, this planning ahead survey is run every five years, allowing on one side to have a strategic reflection on the positioning of the French astronomical community in the global landscape of research at national and international level, on the other to present the perspectives of the AA field to CNRS, the French Ministry of Higher Education, Research and Innovation (M.E.S.R.I.), partner institutions and resource agencies.

With regard to the **Square Kilometre Array**, after the recommendation of the 2014 edition of having France joining the SKA Organisation and the successful accomplishment of this objective on July 2018, **the community has today expressed its strongest support to have the SKA fully inscribed as a new Large Research Infrastructure in the next revision of the French Roadmap that will be published by the M.E.S.R.I.** The final document of the AA planning ahead survey will be published during the first half of 2020.



### The new SKA magazine

The SKA Communication team published last September “Contact”, the new magazine intended to showcase the breadth of activities taking place across the SKA world.

Interested contributors are invited to submit ideas to the SKA Communications team. If suggestions are accepted, experts of the team will advise contributors about the best format to follow. Despite the absence of official submission deadlines, priority will be given to time-critical topics.

The SKA Communications team reserve the right to edit and publish contributions at a suitable time, in consultation with the authors.

## Activities

### French delegation visits South Africa

From October 21 to October 25, 2019, a French delegation visited South Africa for the mid-point review of the FASEP study on the optimisation of the energy system of SKA1-MID (see [May issue of SKA-France bulletin](#)). It was composed of Pauline Plisson, Alexandre Thiéry, Rémi Farwati and Anne Boggione of Bertin Technologies, and Laurent Jammes from CNRS. Several meetings were organised, at the French Embassy and at the Department of Science and Innovation (DSI) in Pretoria, and at SARAO in Cape Town. In addition to the formal progress meeting on the FASEP study project, the Bertin team was able to discuss with the energy experts of SARAO and SKAO on the various options for the energy system of SKA1-MID, and present a first assessment of their respective performances. The meeting at the DSI was an opportunity to discuss with our South African colleagues several innovations brought by the Maison SKA France industrial members: (1) the use of hydrogen in the context of SKA (cooling of detectors, power supply of antennas, energy storage) and more generally the use of hydrogen energy in the South African context, and (2) an integrated approach for the Science Data Processing Center that would be located in Cape Town, optimised in total cost of ownership and with low-carbon footprint. These topics are opportunities for collaboration between our two countries, which may even go beyond the context of the SKA project.

### 21cm Cosmology 2019 workshop



C. Ferrari (SKA-France Director) and P. Zarka (one of the two Principal Investigators of the French SKA pathfinder, NenuFAR) have been invited to present the SKA and NenuFAR projects at the [21cm Cosmology 2019 workshop](#), which was held on **October 21 and 22, 2019**, in the Orsay University Campus (France).

The meeting was organised by researchers of the CNRS/IN2P3 institute LAL (Laboratoire de l'Accélérateur Linéaire) who, together with with Chinese, Canadian and US colleagues, are deeply involved in the [Tianlai project](#), an experiment aimed at characterising dark energy by measuring the baryon acoustic oscillation (BAO) features in the large scale structure power spectrum.

Speakers provided both a theoretical and observational overview of cosmology at 21 cm (including the use of the neutral hydrogen line to probe the Epoch of Reionisation and the birth of the first stars, as well as to constrain cosmological models by observing the universe at lower redshifts through intensity mapping), and an overall view of the scientific perspectives offered by the SKA and pathfinders instruments / experiments (LOFAR, MWA, HERA, MeerKat, Tianlai, CHIME, HIRAX, BINGO).

Presentations are available at the [meeting website](#).

### First meetings for the procurement planning process

As requested by the Council Preparatory Task Force (CPTF) of the future SKA Observatory, the first meetings intended to start discussions around the **procurement planning process** are currently being organised by the corresponding leading countries. During October 2019, SKA-France representatives attended five meetings organised by international colleagues, including the work packages “Dish structure”, “Data Handling and Processing”, “MID Band 5”, “MID Cryogenics” and “MID Digitisation”.

The aim of these first discussions was to provide an overview of the procurement planning process and to have an open discussion about each country's aspirations intended to help the planification of next steps. Further meetings for other elements of the telescope are planned or expected in the next future.

## SKA-France / NenuFAR / GENCI meeting

On **October 25, 2019**, a meeting was organised by SKA-France to discuss with representatives of **GENCI (Grand Équipement National de Calcul Intensif)** and the **NenuFAR** team.

The main objective of this first meeting was to discuss about data processing, distribution and archival solutions for the now-operational French SKA pathfinder, in the general framework of the French computing landscape and inline with **GENCI's strategic plan 2019-2023**. Participants also agreed on the interest of putting in place a joint SKA-France/NenuFAR/GENCI effort in view of future working groups and data challenges that are expected to be organised by the SKA Regional Center Steering Committee (SRCSC).

## Announcements

### SKA-related open position at Inria

**Inria**, the French national research institute for the digital science, is looking for a **temporary scientific engineer to participate to the SKA project**.

The work will mainly be related to High-Performance Computing (HPC) challenges of the SKA and it will be done in collaboration with SKA-France and its international partners.

All information, including required skills, benefits package and remuneration, are available [online](#).

**Contact persons:** [Christian Perez](#)

**Deadline for applications:** December 31st, 2019

### LOFAR/MeerKAT/NenuFAR Workshop

**18-20 November 2019, Paris, France**

The new generation of low-frequency interferometers, precursors and pathfinders of the SKA, is now operational. The French community is deeply involved in almost all scientific projects associated with these radio telescopes.

In this framework, the “**Action Fédératrice: Radiotélescopes du 21<sup>ème</sup> Siècle**” of Paris Observatory organises a **workshop that will be held from November 18 to 20, 2019, in the Council room of the Paris Observatory**. The aim is to gather the French community involved in activities of SKA precursors and pathfinders in order to discuss ongoing programs, scientific results and observation possibilities on these interferometers. Participants will also have the opportunity to work with some of the tools available for radio-astronomical data analysis.

The first part of the workshop (November 18 to 19) will thus be devoted to presentations, covering a wide variety of scientific topics (Pulsar Search and Timing; Development and exploitation of large extragalactic surveys; Detection of neutral hydrogen during dark ages and reionization; Studies of transient phenomena; Synergies with other wavelength domains), while in the second part (November 19 to 20) data analysis hands-on sessions will be organised. Particular attention will be payed to make participants familiar with the use of the “third generation” of calibration and imaging algorithms that have been developed with a strong participation of Paris Observatory, in particular in the construction of the LOFAR Two Meter Sky Survey (LoTSS).

**Workshop website:** <https://radiobf.sciencesconf.org>

**Contact point:** [radiobf@sciencesconf.org](mailto:radiobf@sciencesconf.org)

### 13th workshop of the SKA Pathfinder HI Survey Coordination Committee (PHISCC)

**11-15 May 2020, Cagliari, Italy** The deadline for registration and abstract submission is **16 December 2019**.

The **13th workshop of the SKA Pathfinder HI Survey Coordination Committee (PHISCC)** will be held at Hostel Marina in the centre of Cagliari, Italy, from May 11 to May 15, 2020.

The series of PHISCC workshops started in 2009 and aims at bringing together the community interested in HI research with the SKA pathfinders and precursors. The PHISCC workshops foster collaboration and exchange of ideas both from a scientific and technical point of view. With all major, new and upgraded facilities for 21 cm research now operational, the PHISCC 2020 workshop will focus on the latest HI results in a broader multi-wavelength context and discuss observational results and survey strategies in connection with theory and simulations.

The workshop will feature 2.5 days of plenary discussions followed by 2.5 days of break out sessions on topics of specific technical and scientific interest. Plenary discussions are anticipated on the following topics:

- \* Environment : HI as a driver and tracer of galaxy transformation
- \* Baryon cycle: gas flows, CGM, IGM, stellar and AGN feedback
- \* HI at high z: absorption, stacking and lensing
- \* Simulations : SAMs and hydrodynamical
- \* Techniques : source finding, archives, visualisation, RFI mitigation, etc

Confirmed invited speakers include: Alessandro Boselli (LAM, France), Virginia Kilborn (Swinburne University, Australia), Aditya Chodhury (NCRA-TIFR, India), Kyle Oman (Durham University, UK), Jeff Wagg (SKA Office)

Workshop website: <https://sites.google.com/inaf.it/phisc2020>

#### Important dates before the meeting:

- \* Registration and abstract submission opens: October 25, 2019
- \* Registration and Abstract Submission Deadline: December 16, 2019
- \* Workshop program and list of breakout sessions released: February 1<sup>st</sup>, 2020

## Inauguration of NenuFAR

On October 3<sup>rd</sup> 2019, the French SKA pathfinder NenuFAR was inaugurated at the Nançay radio-astronomical station by Paris Observatory, Orleans University and CNRS. The ceremony, which saw the participation of about 250 persons, was supervised by the Ministry for Higher Education, Research and Innovation, and took place in the presence of national and international representatives of the scientific and institutional partners of the project.

By operating between 10 and 85 MHz, NenuFAR (New Extension in Nançay Upgrading LOFAR) is a radiotelescope working at the lowest frequencies that can be observed from the ground. With its expected 102 stations made of 19 antennas each, NenuFAR will work both as a stand-alone instrument and as a super-station of the International LOFAR telescope.

Interested readers can find on-line more information about the [ceremony](#) and the [NenuFAR radiotelescope](#). Maison SKA-France warmly congratulates the NenuFAR team!



Chiara Ferrari  
for the Maison SKA-France