

# News from SKA-France

BIMONTHLY BULLETIN

The SKAO logo features the letters 'SKAO' in a bold, blue, sans-serif font. The letter 'A' is stylized with a white starburst pattern inside it.The cover of the SKAO Brand Book is a dark blue rectangle with a gradient from purple on the left to dark blue on the right. It features a faint, white outline of the SKAO logo on the right side. The text 'Brand Book' is written in a white, sans-serif font on the left. Below it, 'April 2021 - v0.9' is written in a smaller white font. On the right side, there is a quote in white italicized text: 'The SKA Observatory Brand Book presented at the second Council meeting on April 28, 2021' followed by '(Credit: SKA Observatory)' with a small white dot.

Brand Book

April 2021 - v0.9

*The SKA Observatory Brand Book presented at  
the second Council meeting on April 28, 2021*  
• (Credit: SKA Observatory)

## PROJECT

### SKA Organisation and SKAO meetings

April has seen the [36th SKA Organisation Board meeting](#) (April 20, 2021) and the [second meeting of the SKA Observatory \(SKAO\) Council](#) (April 27-28, 2021).

The two meetings, both held by video-conference, allowed to move forward in a range of topics, from finance and governance, to programme, science and operations. In this intense and exciting period for the SKA project, [the SKA Organisation is in the final stages of transition to the SKA Observatory](#) (fully operational from May 1<sup>st</sup>, 2021), and [the Programme and Operation teams are extremely active to ensure readiness for the start of SKA-1 construction](#), scheduled for 1 July 2021 (contingent upon approval by the SKAO Council).

The Science & Engineering Committee (SEAC) of the SKA

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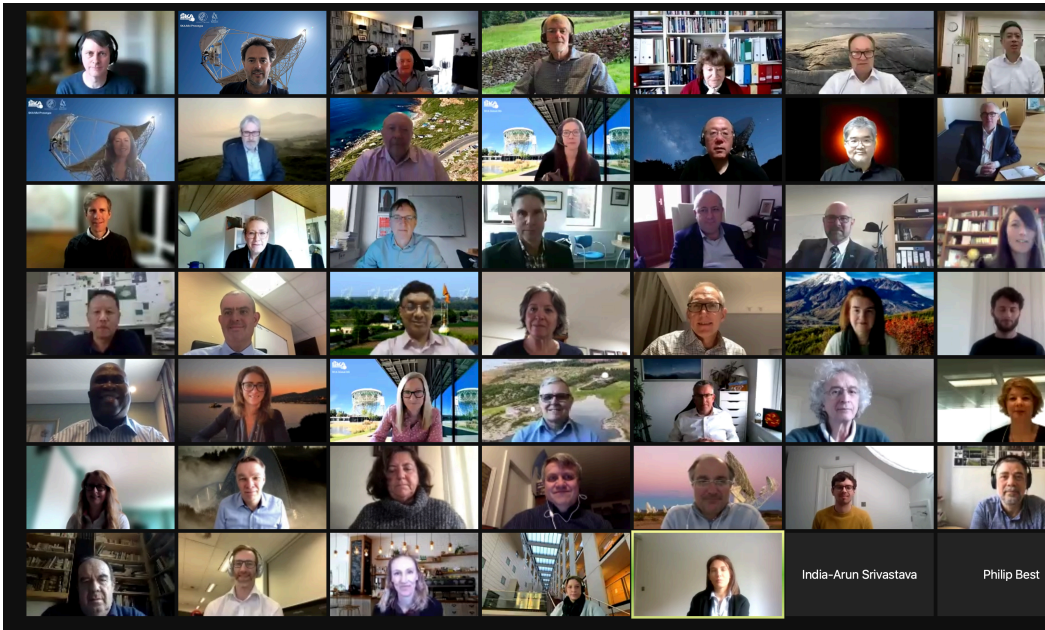
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*Edited by C. Ferrari (SKA-France Director)*



**Members of the SKA Board of Directors at the 36<sup>th</sup> Board meeting**

Credits:  
SKAO

Organisation has now been disbanded, and its successor Committee for SKAO established. G. Lagache (LAM) has been nominated as French representative of the new SKAO SEAC. The Board thanked the previous SEAC Chair and members for their contributions to the SKA project, and SKA-France wishes to acknowledge the work of the French member of the Committee, M.-A. Miville-Deschenes (AIM). He will also be interim representative for the new SEAC, G. Lagache being available from September onwards.

of the Universe, and deliver benefits to society through global collaboration and innovation”) and its values and identity. Undertaken as a collaborative process lead by the SKAO Communication team, the new brand is established exactly 20 years after the first SKA brand, which was designed through a community competition and modernised in 2011 when the SKA Organisation was formed.

All information, including a detailed Brand Book, a Brand FAQ section and a beautiful introductory video, are available at [SKAO webpage](#).



2001

2011

2021

### Evolution of the SKA project brand

Credits: SKAO

Following approval by its Council, on April 28, 2021, SKAO has unveiled its brand: it is intended to outline the Observatory’s mission statement (“*The SKAO’s mission is to build and operate cutting-edge radio telescopes to transform our understanding*

## SCIENCE

### 2021 SKA Science Meeting

The [2021 SKA Science Meeting “A precursor view of the SKA sky”](#) has been held fully on-line from March 15 to March 19, 2021.

With more than 950 people taking part from across the SKA community and over 400 abstracts received for considerations (among which 82 have been selected for plenary talks and over 100 for splinter talks, in addition to many posters with dedicated sessions), the meeting has been

a success. It has allowed the community to have a full overview of an amazing quantity of results allowed by SKA pathfinders and precursors in the wide domain of research fields that will be covered by the future SKA Observatory (pulsars, transients, cosmology, AGN physics, HI galaxy science, gravitational waves, cosmic dawn/epoch of reionisation, magnetism, our Galaxy, cradle of life), with interesting sessions about the on-going development of the SKA project and of other instruments (including the French SKA pathfinder NenuFAR, presented by its P.I., P. Zarka, from Paris Observatory).

The program of the event is available at the [conference webpage](#) and all the talks have been recorded and shared with registered participants. A fee of £40 (or £20 for students) has been asked to cover the cost of the online events platform and the logistical and technical support.

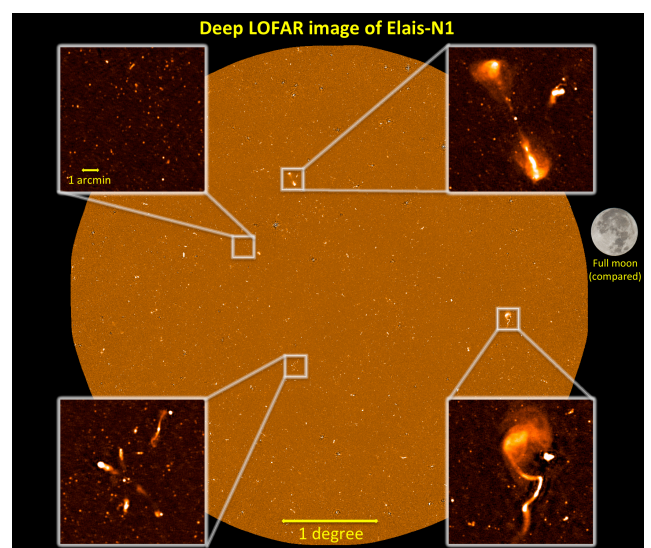
SKA-France warmly congratulates SKAO and the SOC/LOC of the meeting for having been able to make the meeting lively, despite the Covid-19 restrictions obliged to organise a virtual event. Another beautiful example of the resilience of our community, looking forward to meet again in person!

## LOFAR: ultra-sensitive low frequency radio images of the sky

On April 7, 2021, an international team of astronomers has [published the most sensitive low-frequency radio images of the sky and their scientific analysis in fourteen papers](#), which appeared in a [special issue of the scientific journal Astronomy and Astrophysics](#). These results come from long (hundreds of hours) LOFAR observations at about 150 MHz of regions of the sky already extensively

observed by telescopes in other parts of the electromagnetic spectrum (visible, infrared, X-rays, ...). The observations are part of the LOFAR Two-meter Sky Survey (LoTSS) Deep Fields project.

Multi-frequency observations are essential to get physical properties of radio sources, such as to which kind of objects they are associated and what their distance from us is. With tens of thousands of radio sources detected in the fields observed by LOFAR, astronomers have been able to investigate bright radio emissions associated to galaxies hosting an active massive black hole, as well as fainter radio sources corresponding to galaxies that, similarly to our Milky Way, are forming new stars. At low frequencies, the faint radio glow of these galaxies is associated to stars exploding as supernovae. In addition to galaxy studies, astronomers have been able to use these observations to analyse other kinds of radio sources on very different spatial scales (from [gigantic clusters of galaxies](#), to a [much smaller red dwarf star](#)).



**LOFAR image of one of the LoTSS Deep Fields**

Credit: P. Best & J. Sabater, Uni. Edinburgh

The images analysed in the fourteen papers have been obtained by processing

several petabytes of raw data with state-of-the-art data processing techniques largely developed by C. Tasse (Paris Observatory) with his international collaborators.

For more information, readers are addressed to the papers published by Astronomy and Astrophysics. In addition, different press releases have followed these publications. We cite here ASTRON's (ASTRON being the institute leading the International LOFAR Telescope) and Paris Observatory's press releases.

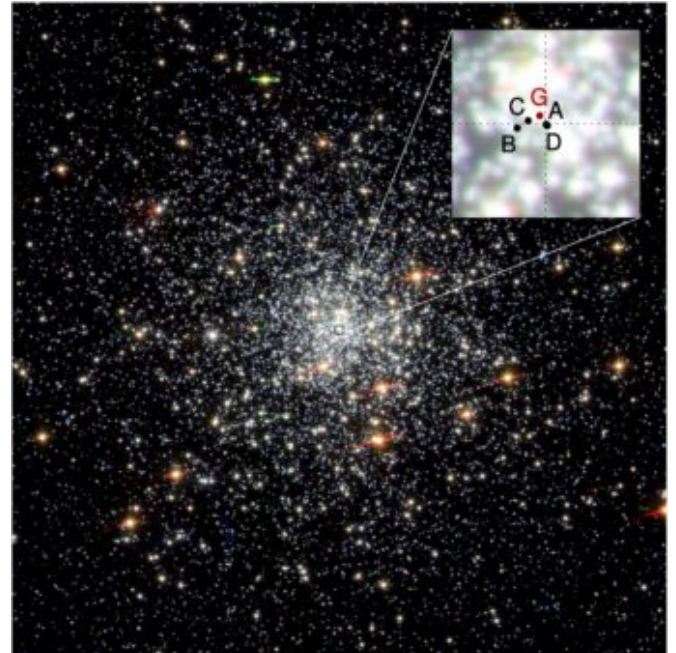
## MeerKAT: hunter of millisecond pulsars

April 28, 2021, has seen the publication in Monthly Notices of the Royal Astronomical Society of a paper about the first discovery of milli-second pulsars using the South African SKA precursor MeerKAT. The international research team behind this result is led by the Italian National Institute for Radio Astronomy (INAF) and the Max Planck Institute for Radio Astronomy (MPIfR, Germany).

Pulsars are extreme objects in the Universe: compact stars made up of neutrons, they can pack hundreds of thousands of times the mass of the Earth in a sphere of a bit more than 20 km. They emit a beam of radio emission and they appear as distant lighthouses every time that this beam points toward us. In the case of milli-second pulsars, due to their extremely rapid rotation, this happens several hundreds times per second. Milli-second pulsars are formidable laboratories for different studies of fundamental physics. Among different applications, we recall here that an array of this kind of objects can be used to detect and analyse gravitational waves that cannot

be studied with any kind of man-made instruments.

Since the formation of milli-second pulsars is expected to be highly enhanced in star-rich environments, radio astronomers look for these objects by observing globular clusters, which are densely packed agglomerations of old stars. In the case of the newly published paper, the international team has used 44 of the 64 MeerKAT antennas to observe the core of nine globular clusters, among which six have been discovered to host eight newly identified milli-second pulsars. Among these eight objects, five orbit around another star, one being particularly interesting: based on its observational properties researchers have derived that, following a close encounter, it could have replaced a former partner with a new companion star, most likely another neutron star.



**Hubble Space Telescope image of one the globular clusters in which a new milli-second pulsar (shown in red in the inset) has been discovered through MeerKAT observations**

Credit: A. Ridolfi et al./Hubble Space Telescope

In order to better understand the complex physics behind (milli-second) pulsars and get

more constraints about gravitational physics, astronomers need to observe as many milli-second pulsars as possible. If this first discovery with just a part (44/64) of the MeerKAT antennas shows the potential of this telescope, in the future [astronomers expect the SKA to be able to detect largely more than one thousand milli-second pulsars!](#)

Interested readers can find more information in the [MNRAS published paper](#) and in the [SARAO press release](#).

## PEOPLE

### Celebration of “International Women’s Day” with Catherine Cesarsky

After [her inspiring seminar organised by SKAO](#) on February 11, 2021 (International Day of Women and Girls in Science), C. Cesarsky (Chair of the SKAO Council) has participated to an [important initiative of the European Southern Observatory \(ESO\): her interview in the ESO Blog](#) (“Behind the scenes at ESO: Showing you the road to the stars”) to celebrate the International Women’s Day (March 8, 2021).

Catherine not only recalls the most exciting moments as ESO Director General (role that she covered from 1999 to 2007), but also her path from her early studies in Argentina to very prestigious roles (just to recall a few: Principal Investigator of the ISOCAM camera onboard the ESA Infrared Space Observatory; President of the International Astronomical Union; High Commissioner for Atomic Energy in France; Chair of the SKA Organisation Board and, today, of SKAO Council). The reader can feel her enthusiasm for astronomy and research, as well as her real pleasure to

work with people and build together new projects to explore the Universe.

For female colleagues, it is for sure very meaningful to read: *“When I was a postdoc, I was one of two female postdocs on campus. I was pregnant at the time and you can imagine how people looked at me. It was difficult to be treated normally: some people treated you too well and others not well at all.*

*However, I didn’t suffer very much from lack of role models, because I didn’t pay much attention to the fact I was a woman. I compared myself to men all the time without any worry or second thoughts. But of course, there weren’t many women to compare myself to”.*

Thanks, Catherine!

### An ERC advanced grant for emission from exoplanets with the French SKA pathfinder

As explained in the [January-February 2021 issue of the SKA-France bulletin](#), radio observations can allow to detect and analyse exoplanets. Low-frequency studies in this domain are developed since years by a French team led by P. Zarka (Paris Observatory), Principal Investigator of NenuFAR, the French SKA Pathfinder.

SKA-France warmly congratulates [Phillippe and his team for having been awarded the prestigious European Research Council Advanced grant](#). Thanks to 10-85 MHz observations performed with NenuFAR, the “EXORADIO” project will focus on studies of the magnetosphere of exoplanets or their interaction with the plasma contained in the stellar wind of their host stars.

Congratulations, Philippe!

## EVENTS

### Celebrating Catherine Cesarsky, 50 years of astronomy

14-15 June 2021 - Virtual Event



On June 14-15, 2021, a symposium has been organised to celebrate Catherine Cesarsky's (Chair of the SKAO Council) extraordinary career, spanning 50 years of astronomy since she defended her PhD in Harvard. The symposium will be held online. The program is available on the [conference website](#).

Information on how to connect to the symposium will be provided after registration on the site.

Since there will be no dinner and no after-dinner talks, the organisers (F. Combes, D. Elbaz, I. Grenier, P.-O. Lagage, L. Vigroux) may give the opportunity to say a few words at the end, after Catherine's talk. If you wish to do it please let the Chair of the event ([D. Elbaz](#)) know.

### Workshop of AS SKA-LOFAR at SF2A meeting

11 June 2021 - Virtual Event

On June 11, 2021, a workshop organised by the A.S. SKA-LOFAR will be held at the [annual meeting of the French Astronomical Society](#) (SF2A; virtual event, from June 7 to June 11, 2021).

During this session of the meeting, the scientific and technical preparation of the SKA, the commissioning of its French pathfinder NenuFAR, as well as the international activities of its precursor telescopes, such as MeerKAT and ASKAP, will be reviewed. You are invited to register to the workshop (Section 10, S10) and to submit a contribution (oral or poster) via the conference web page.

Interested participants are invited to register and to submit their contribution (this latter action required by May 25, 2021) at the [workshop webpage](#).

### Joint Workshop of Extragalactic Continuum and HI SKA Science Working Groups

27 May 2021 - Virtual Event

The Chairs of the Extra-galactic Continuum and and HI SKA Science Working Groups (SWGs) organise a 2-hour virtual workshop (08:00-10:00 UTC; 10:00-12:00 CEST) on **May 27, 2021**.

The main aims of the workshop are to cover areas of scientific or technical interest which are common to both SWGs (e.g., star-formation and gas consumption, AGN feedback and its impact on the gas reservoir, commensal observing, etc.) and discuss prospects for future interaction/collaboration.

The workshop will consist of science presentations and open discussion (all times UTC):

- 08h00: Introduction
- 08h05: I. Wong (CSIRO) *"Galaxy evolution with HI +Radio continuum"*
- 08h30: F. Maccagni (INAF Cagliari) *"Feeding and Feedback in Fornax A: a multiwavelength kinematical analysis"*

- 08h55: B. Mingo (Open University) "*Radio galaxy morphology versus accretion mode: a LOFAR view*"
- 09h20: K. Rozgonyi (ICRAR) "*Deep imaging by gridded visibility stacking*"
- 09h45: Open Discussion

Interested participants can join through the [Zoom](#) (Meeting ID: 973 4813 3298 - Passcode: 737897).

## JOB ANNOUNCEMENTS

### SKAO Current Vacancies

The following SKAO positions are currently open:

- [Risk And Insurance Specialist](#) - Contract Type: Permanent (closing date: May 21, 2021)
- [Engineering Management Systems Engineer](#) - Contract Type: Permanent (closing date: May 21, 2021)
- [Senior Project Manager SKA-Mid](#) - Contract Type: Permanent (closing date: May 21, 2021)
- [LOW Integration Engineer](#) - Contract Type: Permanent (closing date: May 21, 2021)
- [Media Relations Manager](#) - Contract Type: Permanent (closing date: May 21, 2021)
- [Junior Project Manager SKA-Low](#) - Contract Type: Permanent (closing date: May 28, 2021)
- [Business Process Analyst](#) - Contract Type: Permanent (closing date: May 28, 2021)
- [Project Risk, Change And Issue Analyst FTC](#) - Contract Type: Fixed Term Contract (closing date: May 28, 2021)

- [Junior Project Manager SKA-Mid](#) - Contract Type: Permanent (closing date: June 7, 2021)
- [Postdoctoral Researcher in Radio Astronomy Simulations](#) - Contract Type: Fixed Term Contract (closing date: August 31, 2021)

Interested readers can [register](#) to automatically receive an e-mail as soon as a relevant job is published. More information can be found at the [SKAO webpage](#).

## COMMUNICATION

### A French team in the SKAO Magazine Contact

**WHEN THE BRAIN MEETS THE STARS: KNOWLEDGE MADE VISIBLE TO THE NAKED EYE**

**P. Ciuciu, J.-L. Starck and Z. Ramzi**

Credit: SKAO



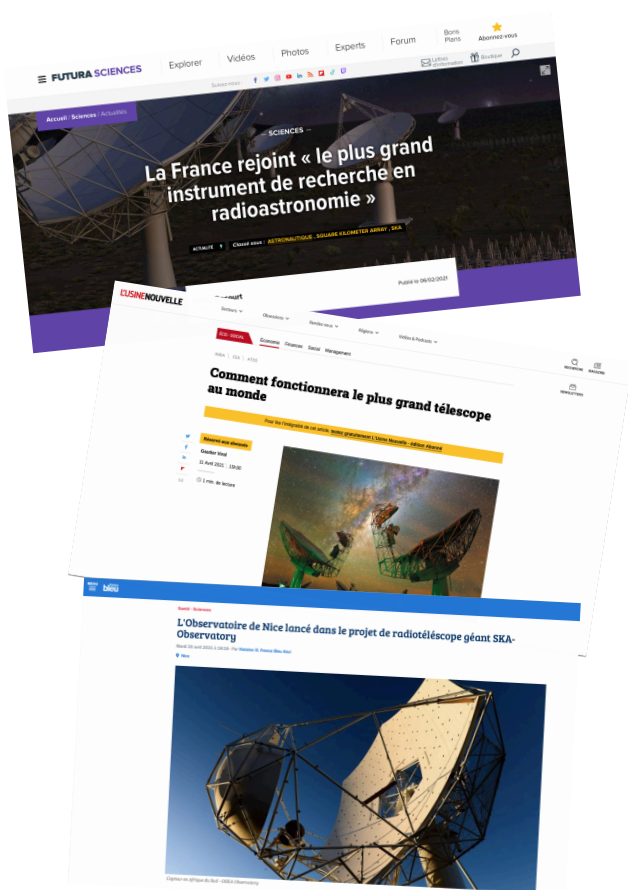
The very rich [March 2021 issue](#) of the SKAO Magazine "Contact" presents an insight about [current researches in data acquisition mechanisms developed in France](#) by a P. Ciuciu (NeuroSpin, team PARIETAL Inria-CEA), J.-L. Starck (Cosmostat, CEA, CNRS) and their PhD student Z. Ramzi.

These world-wide known experts, aware of the fact that data acquisition mechanisms in radio astronomy and in magnetic resonance imaging present similarities, are working together to improve image quality in both research fields.

## SKA in the French press

The announcement of French Ministry of Higher Education, Research and Innovation that France is now engaged in the process of applying for membership in SKAO (see [January-February 2021 SKA-France bulletin](#)) has raised a strong interest towards the SKA project in the French press. Several interviews to G. Perrin (CNRS/INSU Deputy director Head of Astronomy & Astrophysics Division) and C. Ferrari (SKA-France Director) have been published by [Futura Sciences](#), [Usine Nouvelle](#) and [France Bleu](#).

Institute for radioastronomy in Bonn and at the Paris Observatory in Meudon. After a short presentation of both sites the SKA infrastructure and their various research purposes, a Q&A session was planned for the audience. A variety of topics ranging from SKA data management to the evolution of the astronomer job were raised by a very enthusiastic audience. The event, organised online due to sanitary situation, gathered about 50 participants and is now available [online on the Youtube channel of the Embassy](#).



## SKA presentation organised by the French Embassy in Germany

On May 15, 2021, the French Embassy in Germany organised its first "Café des sciences" with SKAO as theme. For one hour the participants were able to exchange with [Dr. Gregory Desvignes](#), a post-doctoral researcher at the Max Planck