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SKA Observatory

The CNRS welcomes France's commitment to the construction and operation of the largest radio astronomy instrument ever built

The SKA Observatory will design and build the most sensitive radio astronomy instrument ever created, operating over an unmatched radio-wave range. It is expected to study the formation of the very first stars and galaxies shortly after the Big Bang. SKA will produce a data stream that exceeds today's global internet traffic and Facebook's current storage needs. So it will need supercomputers that will make it the world's main 'big data' astronomical observatory. The CNRS had classified the SKA instrument as one of its priorities and was already leading 'Maison SKA-France.'

The CNRS, in charge of 'Maison SKA-France', welcomes France's decision to become a member of the SKA Observatory (SKAO), an intergovernmental organisation that will build and then operate what will be the largest radio astronomy telescope for the next 10 to 20 years.

With its unparalleled observation capabilities, the SKA will enable important advances including studies on how the first light sources in the universe emerged after the Big Bang, how magnetic fields impact evolutionary processes in celestial objects, testing of gravitational theories and general relativity and detection of gravitational waves.

And of course, with SKA scientists will explore the unknown.

"I welcome France's decision to become a member of SKAO and tackle a multitude of challenges: challenges both in astronomy and in the digital and technological worlds that will see academic and industrial researchers working together," said Antoine Petit, Chairman and CEO of the CNRS. "The CNRS has strongly supported the idea of joining SKA, being motivated by these challenges, with the support of the partners of Maison SKA-France whom I thank and who, like all our researchers, are extremely enthusiastic about the scientific opportunities this brings."

The French scientific community involved in operations is expected to exceed 400 researchers in astrophysics, cosmology and fundamental physics, to which we can add scientists in other fields who will work on digital, technological, methodological and societal research issues.

The SKA's most dramatic technological challenge is the flow of data it will produce, as that will exceed today's annual global internet traffic and Facebook's current storage needs, for example.



For the first time, data processing supercomputers will become an integral part of telescopes, as well as antennas, making SKA the first "big data" observatory.

Led by CNRS, the 'Maison SKA-France' created in 2018 brings together fourteen partners: seven public institutions (CNRS, Observatoire de Paris - PSL, Observatoire de la Côte d'Azur, INRIA, CEA, Université de Bordeaux and Université d'Orléans) and seven companies (Air Liquide, ATOSBull, Callisto, CNIM, FEDD, Kalray and Thalès).

Contacts

CNRS press officer | François Maginot | T **+33 1 44 96 43 09** | francois.maginot@cnrs.fr

