

Observational astronomy in North Africa

Prof. Fairouz Malek (CNRS and UGA Grenoble, France)

Prof. Mourad Telmini (University of Tunis El Manar, Tunisia)

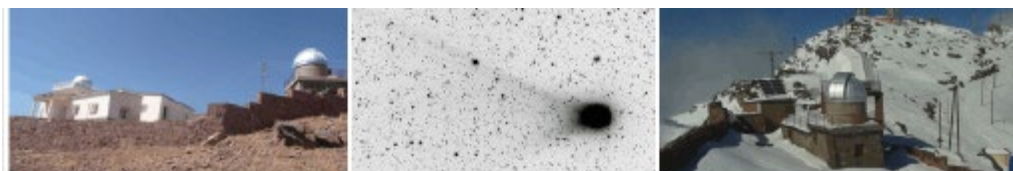
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The Square Kilometre Array (SKA) project is an international effort to build the world's largest radio telescope, with eventually over a square kilometre (one million square metres) of collecting area. The scale of the SKA represents a huge leap forward in both engineering and research & development towards building and delivering a unique instrument, with the detailed design and preparation now well under way. As one of the largest scientific endeavours in history, the SKA will bring together a wealth of the world's finest scientists, engineers and policy makers to bring the project to fruition. A large part of this facility is built and commissioned in South Africa.

Similarly to this wonderful project, North Africa with its diverse landscape, geology and climate would opportunistically offer a suitable place for the observation of another aspect of the northern sky. For instance, regions in the High Mountain of "Atlas" in Morocco or the Saharan Atlas plateau, "Aures", in Algeria or "Orbata" mountain in Tunisia or dry desert landscapes far from light and climate pollution and many other places would be able to host large facilities similar to VLT in Chili [1] or HESS in Namibia [2].



Few facilities exist, for example, MOSS observatory [3] located at Oukaïmeden in High Atlas at 2750 m and operated by the Cadi Ayyad University, Marrakech, Morocco. It has discovered a binary asteroid in 2018.



Some initiatives have been undertaken and would need community engagement, for example the National Aures Observatory in Algeria [4] dedicated to multimessenger astronomy and the study of transient astronomical phenomena (optical counterparts of gravitational waves, GRBs, asteroid tracking, ...).

In this letter of Interest, we would like to address the opportunity for North African countries to unite in contributing to build and lead a series of local observatories and/or one large facility. In doing so, they will have to involve in many aspects of science and society such as building trades, geology, technology and instrumentation, physics education and research. This will give the North African countries the opportunity to develop education, knowledge transfer skills and develop relations with local and regional industries and retain the scientists and the young people, thus improving employment. The increase of the scientific research and

development (R&D) is known to have an impact in the increase of the development and progress of a country and its GDP.

Bibliography:

[1] The Very Large Telescope in Chili: <https://www.eso.org/public/teles-instr/paranal-observatory/vlt/>

[2] HESS in Namibia: <https://www.mpi-hd.mpg.de/hfm/HESS/>

[3] The MOSS observatory: <http://moss-observatory.org/>

[4] National Aures Observatory: A new multimessenger facility : doi:10.1088/1742-6596/1269/1/012001