

**Memorandum of Understanding**

**between the**

**Square Kilometer Array (SKA) Project Office, South Africa**

**and the**

**National Radio Astronomy Observatory, United States**

**to collaborate on**

**Radio Astronomy Research and Development**

**Towards the realization of the SKA**

**September 10, 2008**

## **Recognizing**

- that the South Africa SKA Project Office (SASPO), a business unit of the National Research Foundation (NRF) in South Africa (SA), funded by the Department of Science and Technology through the NRF, is an entity established to promote the construction and the siting in SA of the Square Kilometre Array (SKA) and the construction of the MeerKAT array telescope,
- that the National Radio Astronomy Observatory (NRAO), funded by the National Science Foundation (NSF) of the United States (US) and operated by the Associated Universities Inc. (AUI) under a Cooperative Agreement, enables cutting-edge research in the study of the universe at radio wavelengths, helps train future scientists and engineers, and stimulates public interest in science,
- that the NRAO operates the 100m Green Bank Telescope (GBT), Very Long Baseline Array (VLBA), Very Large Array (VLA), and by 2013, will have completed the Expanded Very Large Array (EVLA), and the international Atacama Millimeter/sub-millimeter Array (ALMA),
- that the NRAO operates under the Open Skies policy which provides access to the telescopes based solely on the peer-review of scientific merit,
- that the astronomical communities in South Africa and the United States can benefit from closer collaboration, via strong and regular scientific, technical, management and operational contacts, exchanges of personnel, and joint projects, and

## **Noting**

- that the SASPO is entering into the construction of MeerKAT, an array of 80 12-m radio telescopes, as a SKA pathfinder and a world-class telescope in its own right,
- that the NRAO is completing in 2012 the EVLA which will be a major new radio astronomy facility operating in the 1-50 GHz range, with a 10-fold sensibility improvement over the VLA, and will function also as another powerful SKA pathfinder,
- that the NRAO is working on a range of research and development activities that would lead to the SKA, and other future projects, including those based in space and on the Moon,
- that the SASPO and the NRAO are both interested in making the SKA a reality
- that the SASPO and the NRAO staff are already collaborating on a range of technical activities of interest to both,

**the SASPO and the NRAO resolve**

- to collaborate and cooperate across a broad front to develop radio astronomy and future projects of common interest,
- to collaborate closely on the development and implementation of new software capabilities, data processing and archiving, and state-of-the art receiving systems and other instrumentation for the radio astronomy facilities in SA and in the US,
- to hold joint discussions, scientific workshops and to form joint research groups on specific scientific or technical goals of common interest,
- to form a joint effort specifically devoted to algorithm developments that are required for both the EVLA and MeerKAT, to be managed jointly and to follow a time schedule agreed by the SASPO and the NRAO,
- to have an active exchange program of students, postdoctoral fellows, scientific and engineering staff,
- to second staff from each organization to the other for agreed on periods,
- to include senior NRAO staff in a Science and Technology Advisory Board for the MeerKAT
- to implement a policy for SASPO which is consistent with the NRAO Open Skies policy, with the desired result that MeerKAT’s time allocation policy make all of the telescopes of the NRAO and the SASPO optimally available for the two user communities.

The SASPO and the NRAO understand that the overall collaborative and cooperative goals established under this Memorandum of Understanding (MOU) can continue to develop and evolve over time. In meeting the cooperative intent of this MOU, specific collaborations between NRAO and SASPO should be arranged on a case by case basis, subject to the availability of resources and the condition that both organizations have to meet their respective primary mission.

The present MOU shall be valid for five (5) years from the date of signature, subject to a mid-term review (3 years from the date of signature). After the mid-term review, the MOU will be automatically renewed, unless decided otherwise by either the SASPO or the NRAO.

We, the undersigned, as representatives of the SASPO and the NRAO agree to pursue the above goals to the best of our ability.

**Signatories:**

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Dr. Bernie Fanaroff  
Director  
South African SKA Project Office

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Dr. Fred K. Y. Lo  
Director  
U.S. National Radio Astronomy Observatory

**Date:**

**Date:**

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