Editorial

Around half a century ago the Radio Astronomy Group at TIFR, under the leadership of Prof. Govind Swarup, embarked on an ambitious project to build a Radio Telescope at Ooty. This 530 m long and 30 m wide cylindrical parabolic reflector had an unique design which allowed it to track a source on the sky with just a single rotation along the long axis of the cylinder. The telescope was commissioned more than 40 years ago and was subsequently used to make several very significant scientific discoveries in areas ranging over observational cosmology, pulsars, recombination lines and the interstellar medium as well as studies of the inner heliosphere. The Ooty Radio Telescope (ORT) continues to be in regular operation and is currently being used for space weather studies as well as pulsar observations.

The ORT is currently undergoing a major upgrade to its receiver chain, which will result in a new system

called the the Ooty Wide Field Array (OWFA). The OWFA is designed to function as a 264 element interferometric array, and to provide a significantly larger instantaneous bandwidth as well as field-of-view as compared to that provided by the legacy ORT receiver system. In addition to significantly enhancing the capabilities for heliospheric studies, this upgrade is also expected to open other avenues of research particularly in the newly emerging areas of 21-cm intensity mapping and studies of transient radio sources. Articles in this Special Section present the scientific motivation, design and expected capabilities of this upcoming instrument.

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Guest Editors