

Into the sky

B'lore instrument figures in new radio telescope in Oz

NEW DELHI: A brand new telescope located in western Australia, which could potentially save the world billions of dollars in future, will have a crucial made-in-Bangalore instrument in its core.

Located in a remote outback 800 km north of Perth, the telescope is known as Murchison Widefield Array radio telescope. It was unveiled on November 30. Among others there were a group of physicists and engineers from **Raman Research Institute(RRI)**.

Over the last six years, the RRI team designed and developed a digital receiver, which was installed in each of the 128 metallic spidar-looking tiles—individual units of the ar-



ray—that the low frequency radio telescope is made of.

RRI is the only Indian institute in the \$51-million project which has eight Australian, two US and one New Zealand institutes as other partners. “We are in a transition phase.

From 2006 to 2012 the emphasis was on designing and commissioning the telescope. Now, we will move to the science part,” said **N Udayshankar, a RRI physicist** closely associated with MWA project who attended the unveiling, told *Deccan Herald*.

Besides peeping into early universe, the new telescope will give the world a dramatically improved view of the sun and provide early warning to prevent damage to communication satellites, electric power grids and GPS navigation systems.

Scheduled to have its first light early 2013, MWA will detect and monitor massive solar storms, such as the one that

cut power to six million people in Canada in 1989 during the last peak in solar activity.

In 2011, experts warned that a major solar storm could result in damage to integral power supplies and communication networks of up to \$ 2 trillion - the equivalent of a global Hurricane Katrina.

The MWA will aim to identify the trajectory of solar storms, quadrupling the warning period currently provided by near-Earth satellites.

This is timely as the sun is due to re-enter peak activity in 2013, with a dramatic increase in the number and severity of solar storms expected, with the potential to disrupt global communications and ground

commercial airlines. “The MWA will keep watch on the sun during the upcoming period of maximum solar activity. It has the potential to deliver very real and immediate benefits to the entire global population,” said Steven Tingay, MWA director and a professor of radio astronomy in Curtin University that acted as the coordinator.

The new telescope is ground-breaking in other ways too – it will offer scientists an unprecedented view of the entire history of the Universe, to gain a better understanding of how the early Universe formed and study the role played by gravity and dark matter.

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