

## **"The BINGO Telescope: a new 21 cm window for exploring the Dark Universe and other astrophysics"**

BINGO is a unique radio telescope designed to make the first detection of Baryon Acoustic Oscillations (BAO) at radio frequencies. This will be achieved by measuring the distribution of neutral hydrogen gas at cosmological distances using a technique called Intensity Mapping. Along with the Cosmic Microwave Background anisotropies, the scale of BAO is one of the most powerful probes of cosmological parameters, including dark energy.

The telescope will be built in a low RFI site in Northern Uruguay and located in a disused, open cast, gold mine. It will operate in the frequency range going from 0.96 GHz to 1.26 GHz, be of a twomirror compact range design with a 40 m diameter primary and have no moving parts. Such a design will give the excellent polarization performance and very low sidelobe levels required for intensity mapping. With a feedhorn array of 50 receivers, it will map a 15° declination strip as the sky drifts past the telescope. The partners in BINGO are Brazil, United Kingdom, Switzerland, Uruguay, China and Saudi Arabia.

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