

# The Cosmic Background Imager Experiment

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## Abstract

The Cosmic Background Imager (CBI) is a 13-element interferometer array operating in the 26-36 GHz frequency band situated at an altitude of 5080 metres in the Chilean Andes. The CBI is designed to study the Cosmic Microwave Background Radiation (CMBR) from the early universe. The Angular power spectrum of fluctuations in the CMBR provides a unique testing ground for models of structure formation in the universe. We describe the experiment and observations being carried out. We report on new determinations of cosmological parameters using data from extended mosaic observations. The three extended mosaics cover an area of about  $80 \text{ deg}^2$  and comprise observations of the total intensity of the CMBR carried out in the 2000 and 2001 observing seasons. For the 2002–2003 season the instrument has been upgraded for measurement of polarized radiation. We report on the ongoing observations and on the prospects for measurements of peaks in the Cosmic Microwave Background polarization power spectra.