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The CHIME Dark Energy Project

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The Canadian Hydrogen Intensity Mapping Experiment (CHIME) is a novel radio telescope currently under construction at the Dominion Radio Astrophysical Observatory in Penticton, BC. Comprising four 20-m by 100-m parabolic cylinders, each equipped with 256 antennas along its focal line, CHIME is a 'software telescope' with no moving parts. It will measure the 21-cm emission from neutral hydrogen to map the distribution of matter between redshifts 0.8 and 2.5, over most of the northern sky. By following the apparent size of the baryon acoustic oscillation (BAO) feature in the data, we can measure the expansion history of the Universe over an epoch where the effects of Dark Energy began to become important and thereby improve our understanding of this recently discovered phenomenon. The science goals, technical details, and current status of CHIME will be presented.

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