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## **In the era of large scale surveys: from BOSS to WFIRST (15' + 5')**

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Despite tremendous recent progress, gaps remain in our knowledge of our understanding of the Universe. We have not yet pinned down the properties of dark energy, dark matter, nor have we confirmed Einstein's theory of Gravity at the largest scales.

Current and upcoming large sky surveys of the Cosmic Microwave Background (CMB), Large Scale Structure (LSS) in galaxies, quasars and Lyman-alpha forest present us with the best opportunity to understand various mysterious properties of the Universe and its underlying principles.

I will review recent results from Baryon Oscillations Spectroscopic Survey (BOSS) and introduce the newly commenced space telescope Wide Field Infrared Survey Telescope (WFIRST) which aims to understand the dark components of the Universe and directly image exoplanets.

I will then introduce novel cosmological probes which combine large sky surveys of biased tracers with cosmic microwave background measurements. These novel cosmological probes will open up a window in both the momentum field of the Universe and Gravity at the largest scales.

**Author:** HO, Shirley (Carnegie Mellon University (US))

**Presenter:** HO, Shirley (Carnegie Mellon University (US))

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