Contributed Talk

Splinter AGN

The Extremely Luminous Quasars Survey (ELQS) in SDSS

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Studies of the most luminous quasars at high redshift directly probe the evolution of the most massive black holes in the early universe and their connection to galaxy formation. The Sloan Digital Sky Survey (SDSS) and the Baryon Oscillation Spectroscopic Survey (BOSS) have so far provided the largest sample of Type I quasars and the most widely adopted measurements of the Type I quasar luminosity function (QLF) at $z>3.0$. However, a careful re-examination of the SDSS/BOSS quasar sample revealed that their quasar selection is in fact missing a significant fraction of $z>3.0$ quasars at the brightest end. In order to avoid the limitations of purely optical quasar selections we have designed a new spectroscopic survey based on near-infrared photometry. The Extremely Luminous Quasar Survey (ELQS) uses a near-infrared color selection complimented with modern machine learning methods to reach unprecedented completeness for bright $z>3.0$ quasars over the $12000\,\mathrm{deg}^2$ of the SDSS footprint. I will present the novel quasar candidate selection along with the latest results of the survey. With the ELQS we will not only provide a more complete measurement of the known bright-end QLF, but it also allows us to extend the bright-end QLF by more than a magnitude at $2.8<z<4.5$.