Red Quasars: Hunting For Hidden Rubies in the Sky

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ABSTRACT

Energetic galactic nuclei, known as quasars, have typically been thought of as blue objects. Over the past decade, however, the existence of a population of red quasars has emerged\textsuperscript{2,3,5,8}, revealing a new frontier in the study of these objects.

Combining IR and optical photometry from UKIDSS and SDSS, we have found a way to separate red quasar candidates from most other sources more effectively than using optical data alone. After our technique proved successful with known red quasars, we applied it to a sample of random objects chosen from a small patch of sky. Investigating those objects that qualified as likely candidates, we found that a large fraction, approaching 50%, were red quasars.

Our method for effectively identifying red quasars, using only photometric data, will improve statistics of the red population of quasars. In our small sample area alone, we were able to find over 1,000 red quasar candidates, implying their numbers may be a significant fraction of all quasars in the universe, perhaps even the majority\textsuperscript{4}. Developing a reliable method to find these objects will increase our understanding of the relation between red and blue quasars and the quasar phenomenon in general.

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REFERENCES


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