SLRealizer:
Catalog-level searching of gravitationally-lensed quasars for LSST

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1. Introduction

- **LSST**(Large Synoptic Sky Telescope) will start running in 2019
- **4.8m** telescope in Chile, Ten years of sky survey
- Expected to find substantial number of **gravitationally-lensed quasars**, that could be used to study **time-delay cosmology**
- Current Problem: LSST will produce ~30 Terabytes of data — very costly, if not impossible, to go through all the LSST image data to find the lensed quasars
- Need **a simpler, more economic way** to find those quasars

2. Methods

3. Results

Toy Source Catalog

400 lenses * 200 observation epochs

QR

Toy Object Catalog

400 lenses

QR

Cornerplot to Select Features

SDSS galaxies

OM10 lensed quasars

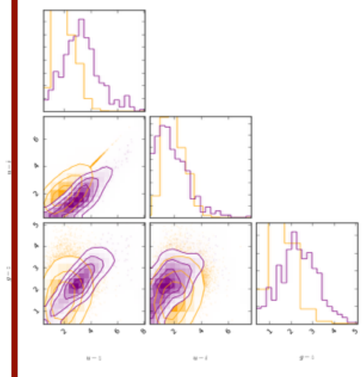

Figure 1. Color Index
Good feature to choose — peaks are separated

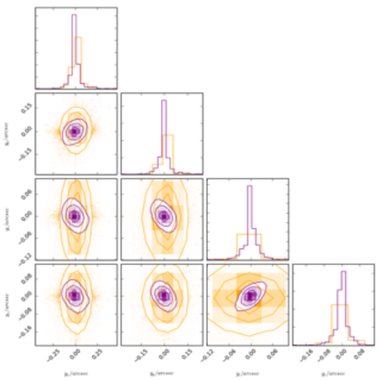

Figure 2. Magnitude
Not a good feature to choose — Peaks are too close

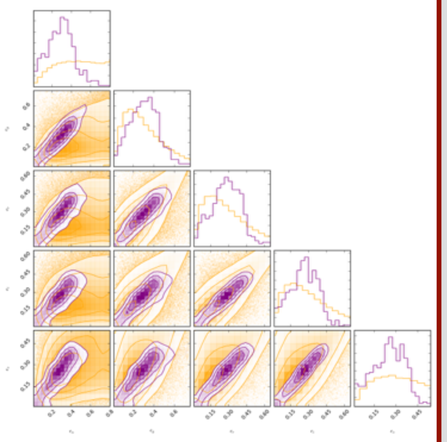

Figure 3. Ellipticity
Some could be useful

Features Chosen:

Classification

4. Future Works

5. Acknowledgements

6. Results