

# DESI Spectral Subtraction Transient Search

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# Motivation

- Transients traditionally identified by looking for differences between images taken at different times
- DESI can identify transients by looking for differences between spectra
  - Differs from other active strategies that identify “galaxy + X” or “outlier”
  - Sensitive to changes in sharp lines that have low equivalent width - phase space that imaging searches are insensitive to

# My Hack

- At the hack session (thanks Antonella!) I modified Segev's code (thanks!)
- Calculate the differences between the spectra of a single tile taken at different nights and tag those that have at least one spectral resolution element with  $S/N > 7$
- TILEID 70006 ELG
  - Mar 03 vs Mar 04

# Rogues Gallery

[https://drive.google.com/drive/folders/1mATY5GDixPGmVPqoXCBBHT\\_fLYc46OY?usp=sharing](https://drive.google.com/drive/folders/1mATY5GDixPGmVPqoXCBBHT_fLYc46OY?usp=sharing)

- Seem to be finding
  - Calibration errors between arms
  - Inconsistent fiber position (or absolute calibration error)