

ACTIVE GALACTIC NUCLEI



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With Dr. Dai
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OVERVIEW

What We Already Know – AGN and Data Filtering

Light Curves

Structure Function

What's In the Structure Function?

Bins and Pairs

Further Analysis of the Structure Function

Parallax and Gaia

Throw back to 5 min talk

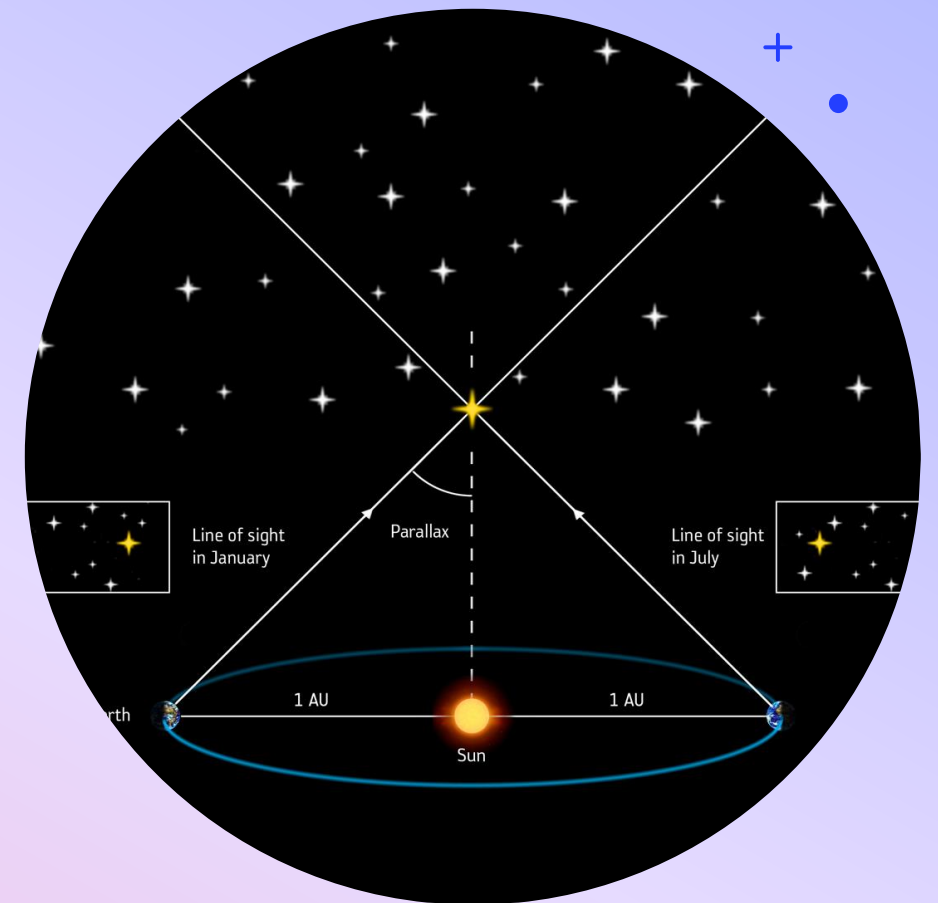
AGN = Active Galactic Nuclei

In the beginning, there was Gaia

ADQL

Parallax

Yay! Data! Now what?



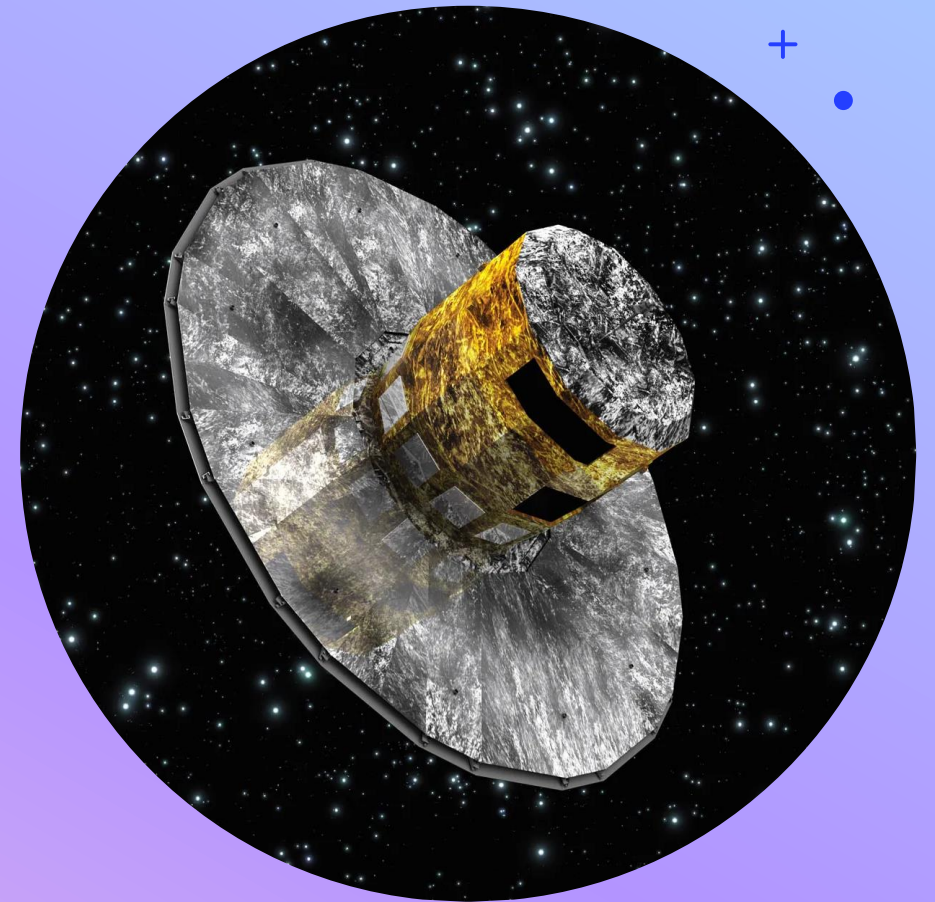


ANALYSIS

Or: What Sarah Did for the Rest of the Summer

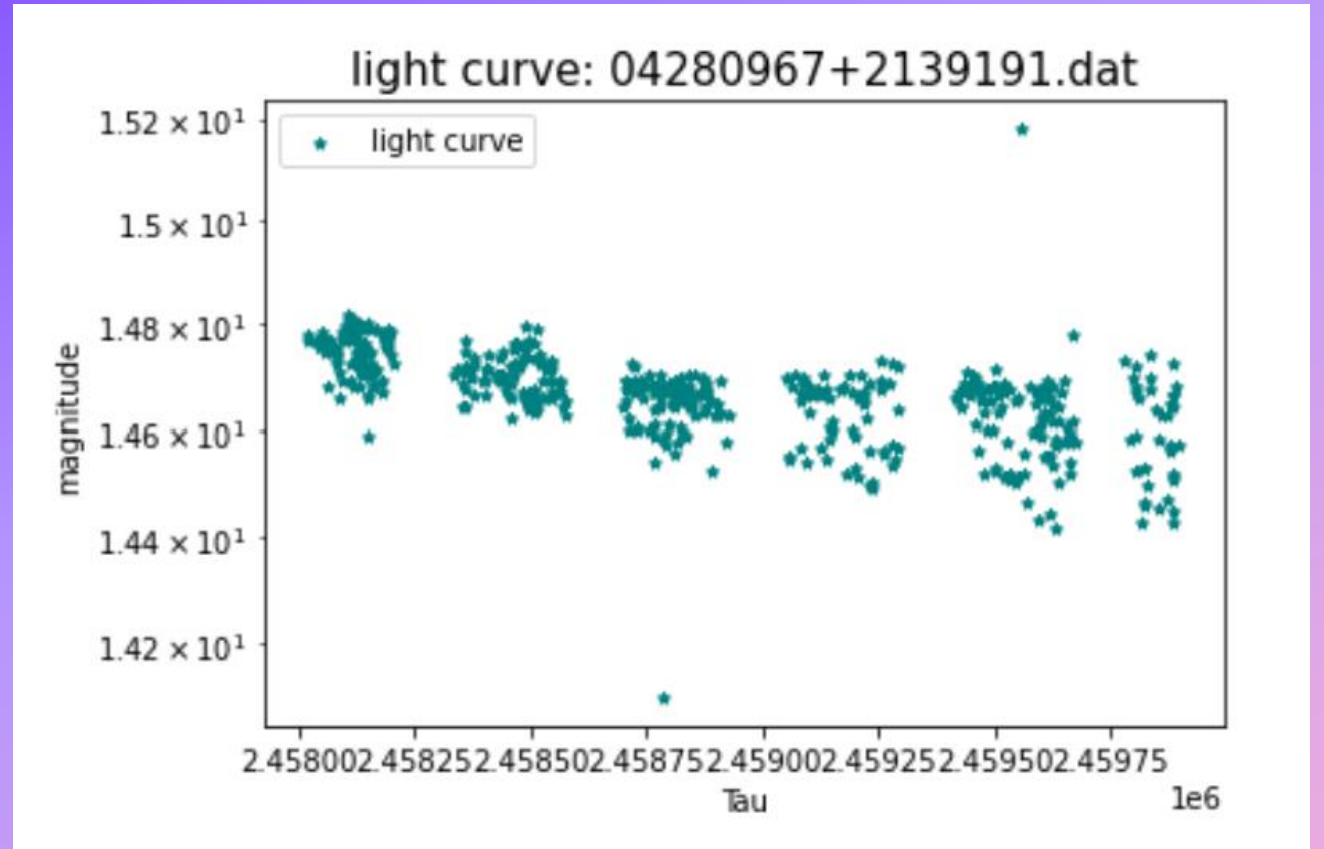
Samples Selection

- Data filtering → AGN candidates
- AGN variability → Stochastic
- Non-stochastic AGN
- Why?



Light Curves

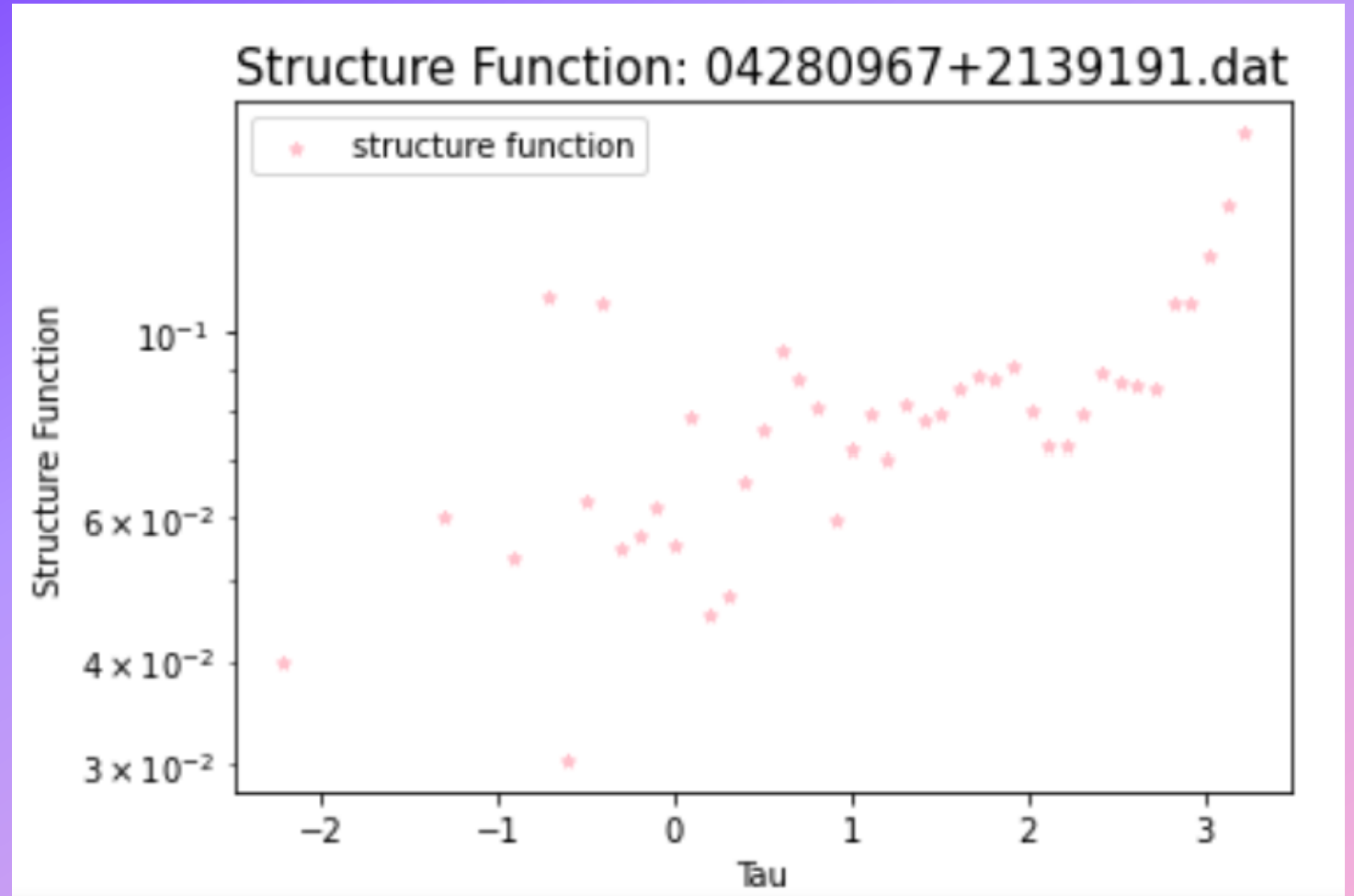
Follow Extended Source:
04280967+2139191



$$SF(\tau) = \sqrt{\langle [m(t + \tau) - m(t)]^2 \rangle} - \sigma_{noise}^2$$

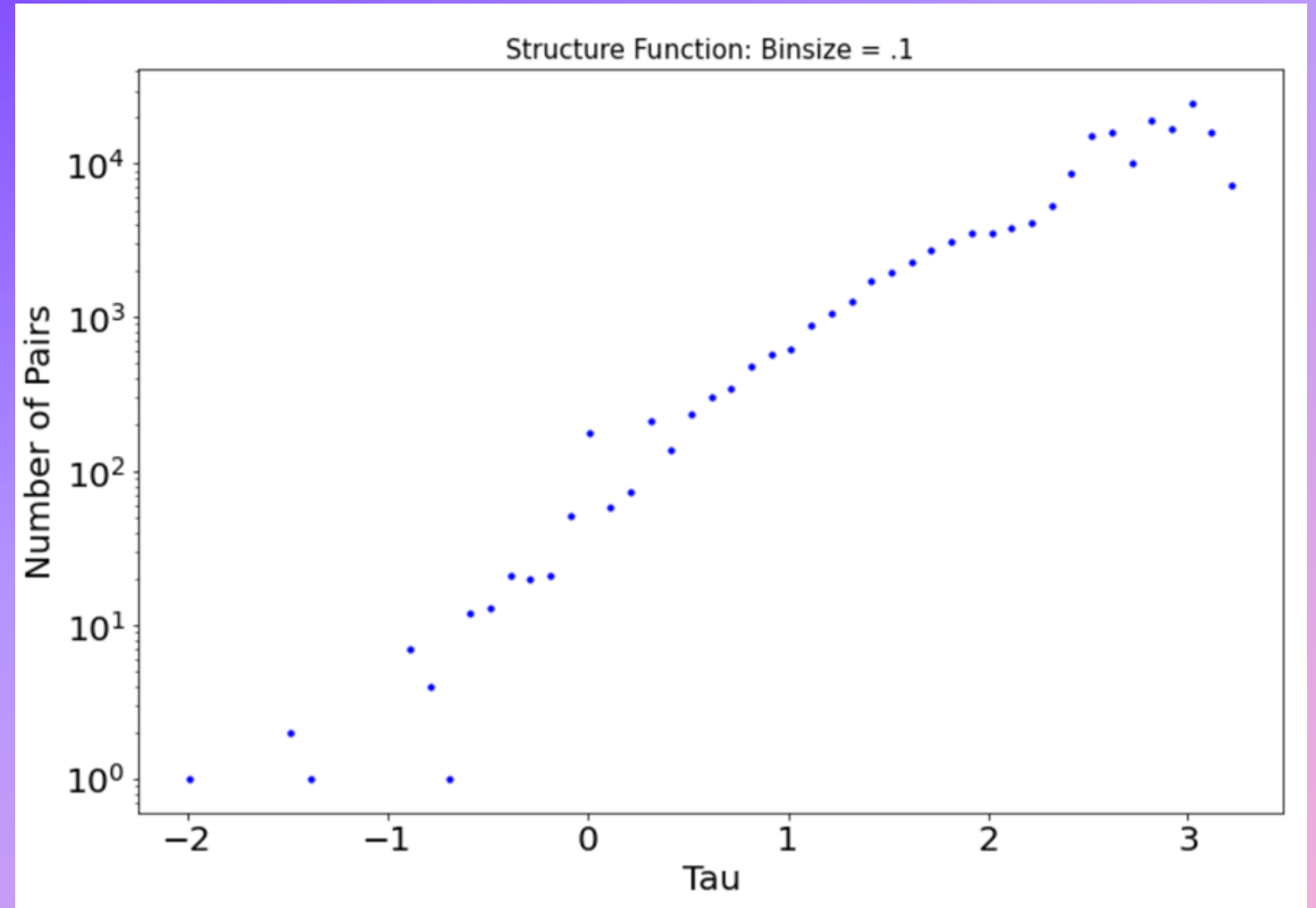
Structure Function

Follow Extended Source:
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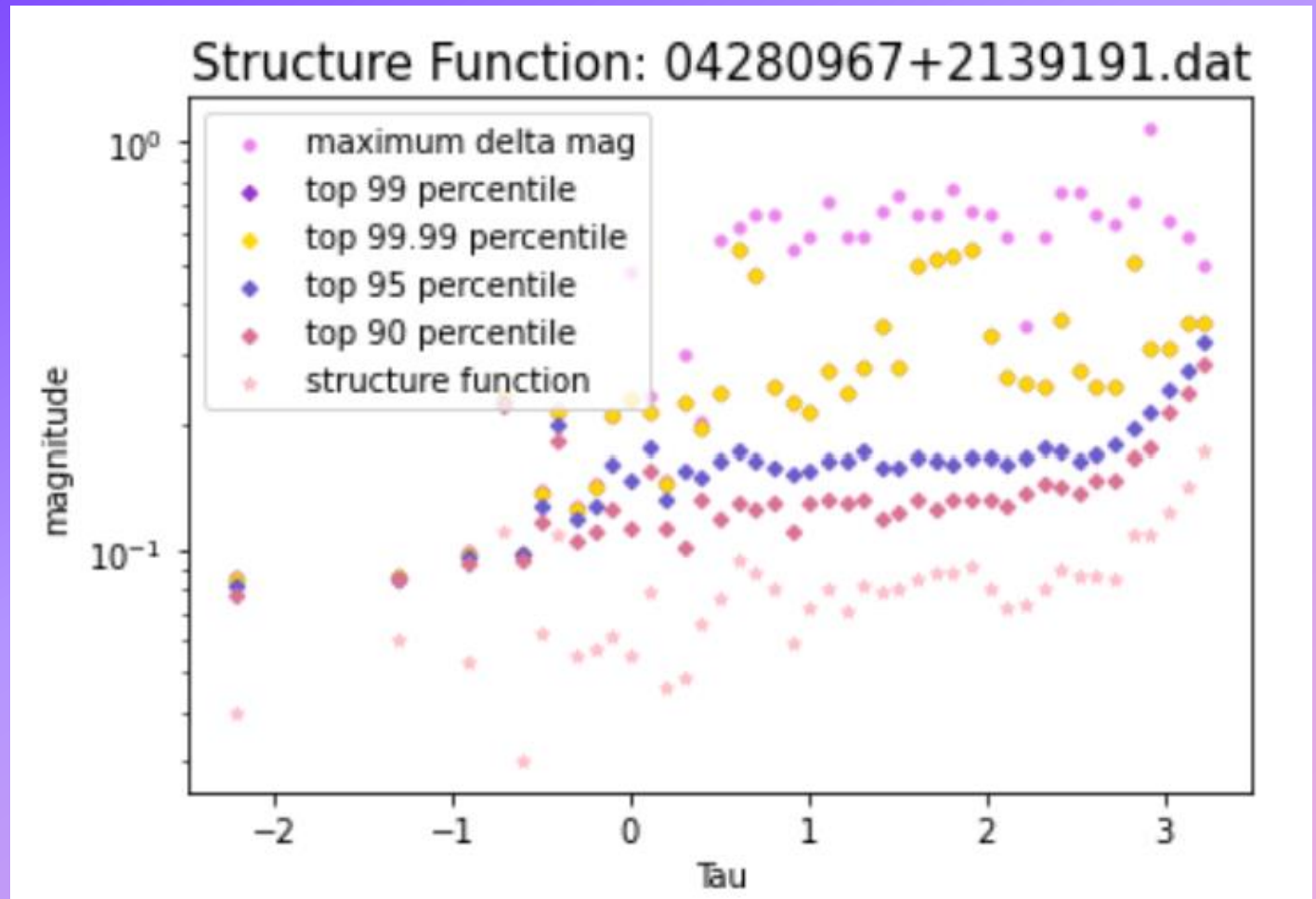
Structure Function—analysis of analysis

Follow Extended Source:
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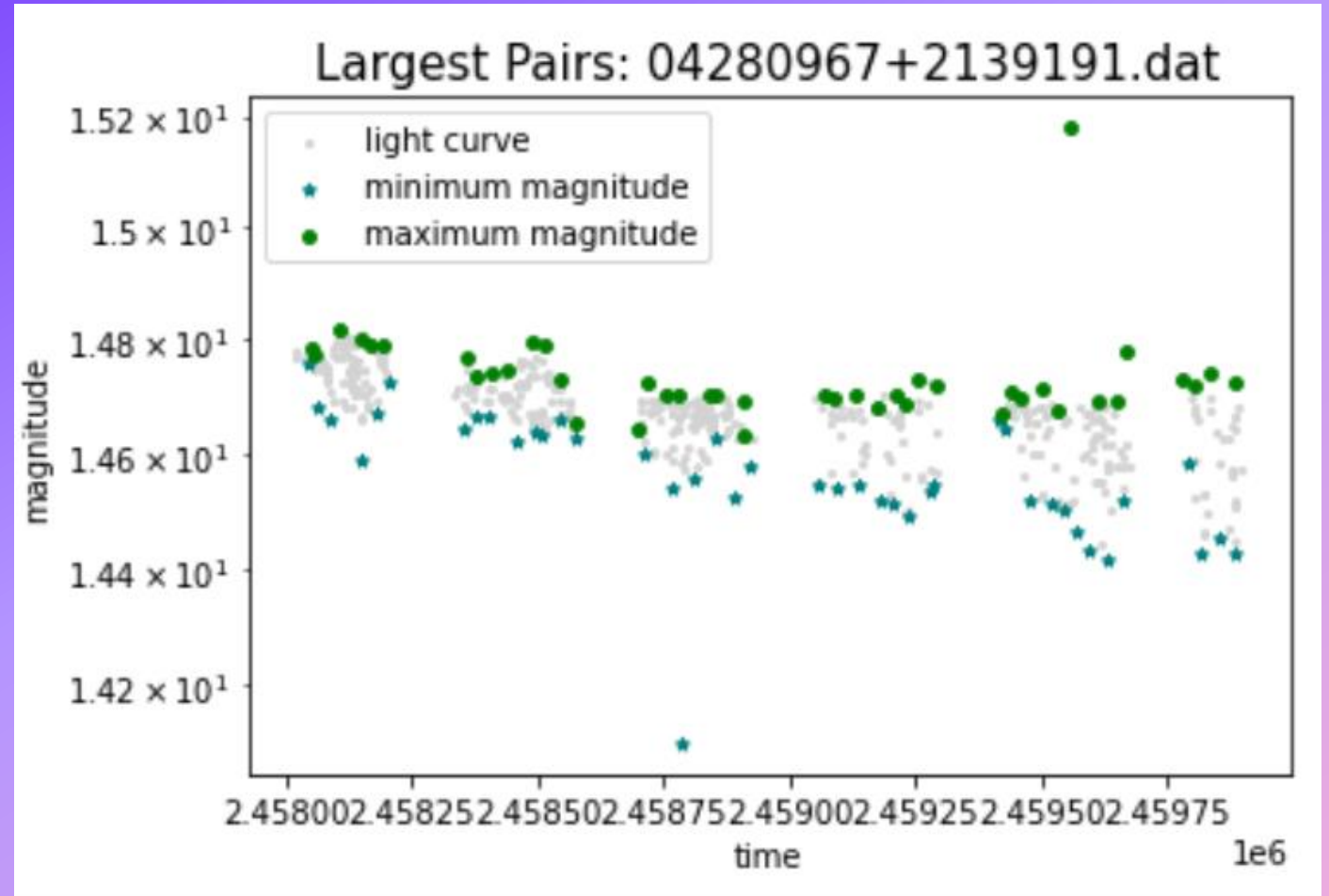
Structure Function – Percentile

Follow Extended Source:
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Light Curves— Outliers

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Summary

- Data filtering
- Light curve analysis
- Modified structure function
- Non-stochastic variability

```

item in obs_pars > .001
remove(item)
mag_err = obs_pars[0,0]
title('Parallel vs log Flux', fontsize=15)
scatter(log10(mag_err), flux_magnitude, s=.001)

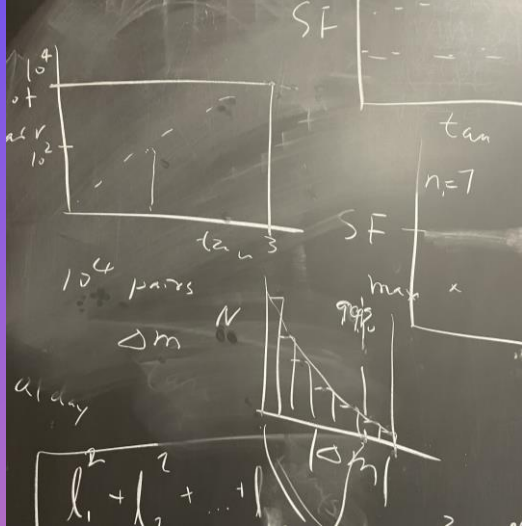
concatenate(date, dtype='datetime64[ns]', dtype='float64')
concatenate(cam, dtype='float64')
concatenate(mag, dtype='float64')
concatenate(mag_err, dtype='float64')
concatenate(flux, dtype='float64')
concatenate(FHM, dtype='float64')

Traceback (most recent call last):
  File "C:\Users\user\Scripts\ag_nuclei.py", line 33, in <module>
    mag_err = np.array(np.concatenate(mag_err, dtype='float64'))
ValueError: could not convert string to float:

mag_err = np.array(np.concatenate(mag_err, dtype='float64'))
#flux = np.array(np.concatenate(flux, dtype='float64'))
#flux_err = np.array(np.concatenate(flux_err, dtype='float64'))
#FHM = np.array(np.concatenate(FHM, dtype='float64'))

AttributeError: 'list' object has no attribute 'translate'

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THANK YOU

Good luck on your presentations!
Have a good academic year!
Thank you for the summer!

