

QPPs in AB Dor Flares Scale Identical to Solar and Stellar QPPs

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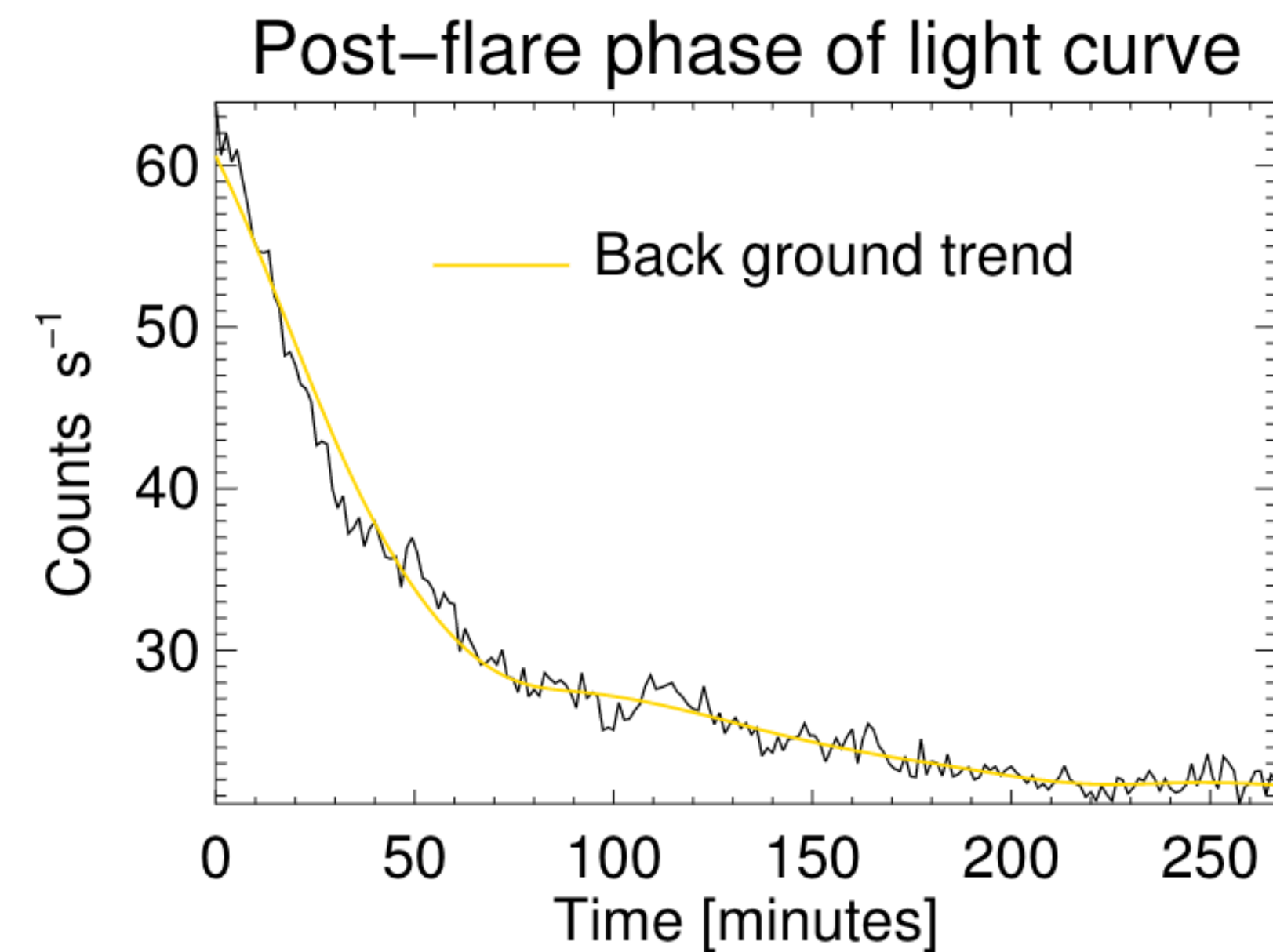
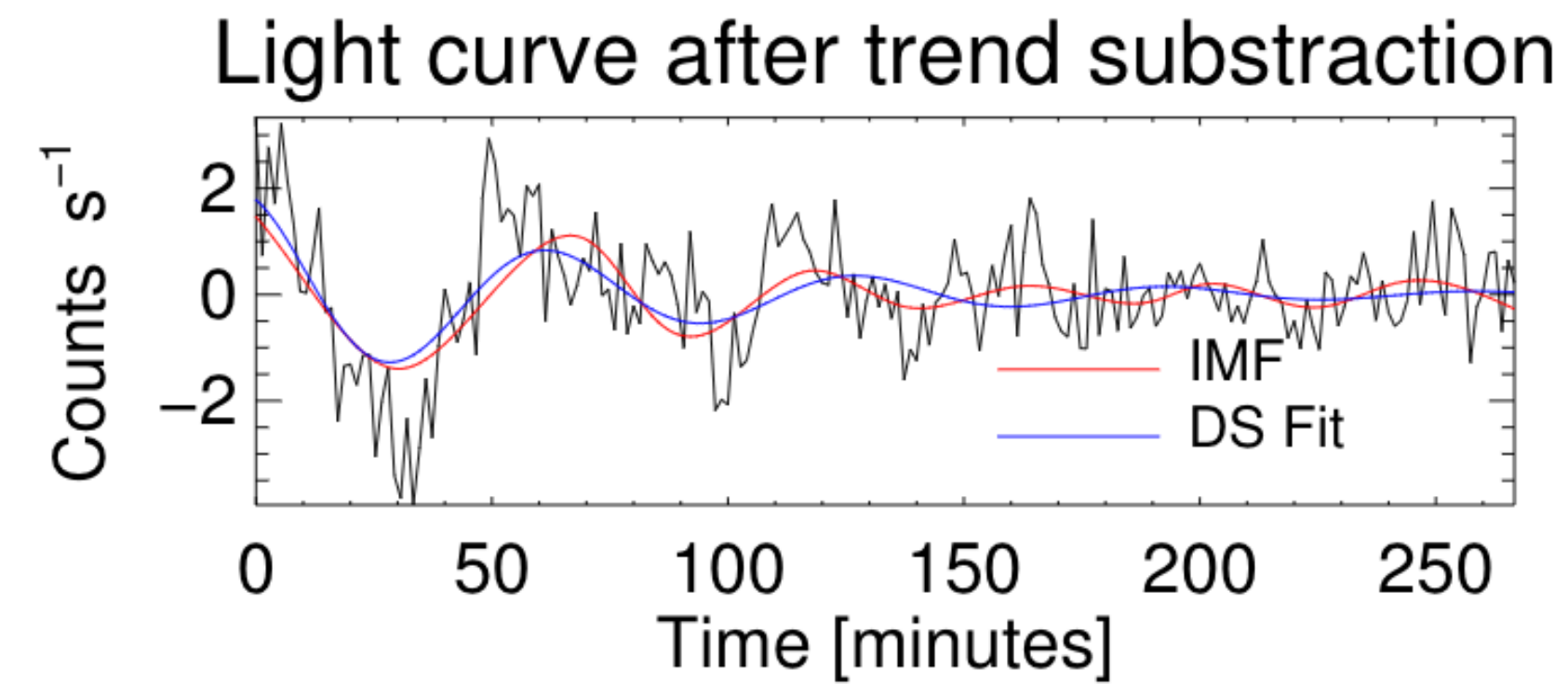
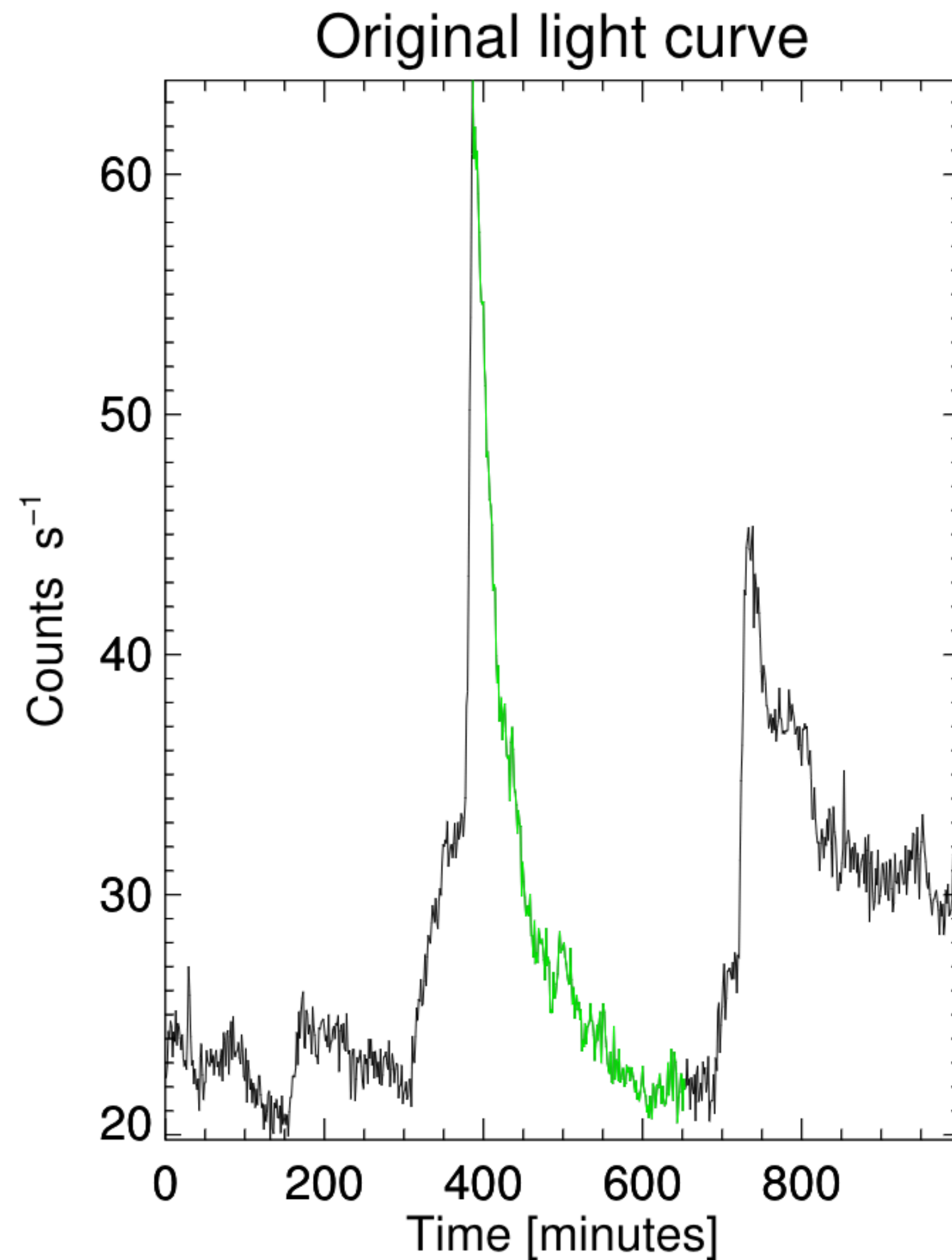
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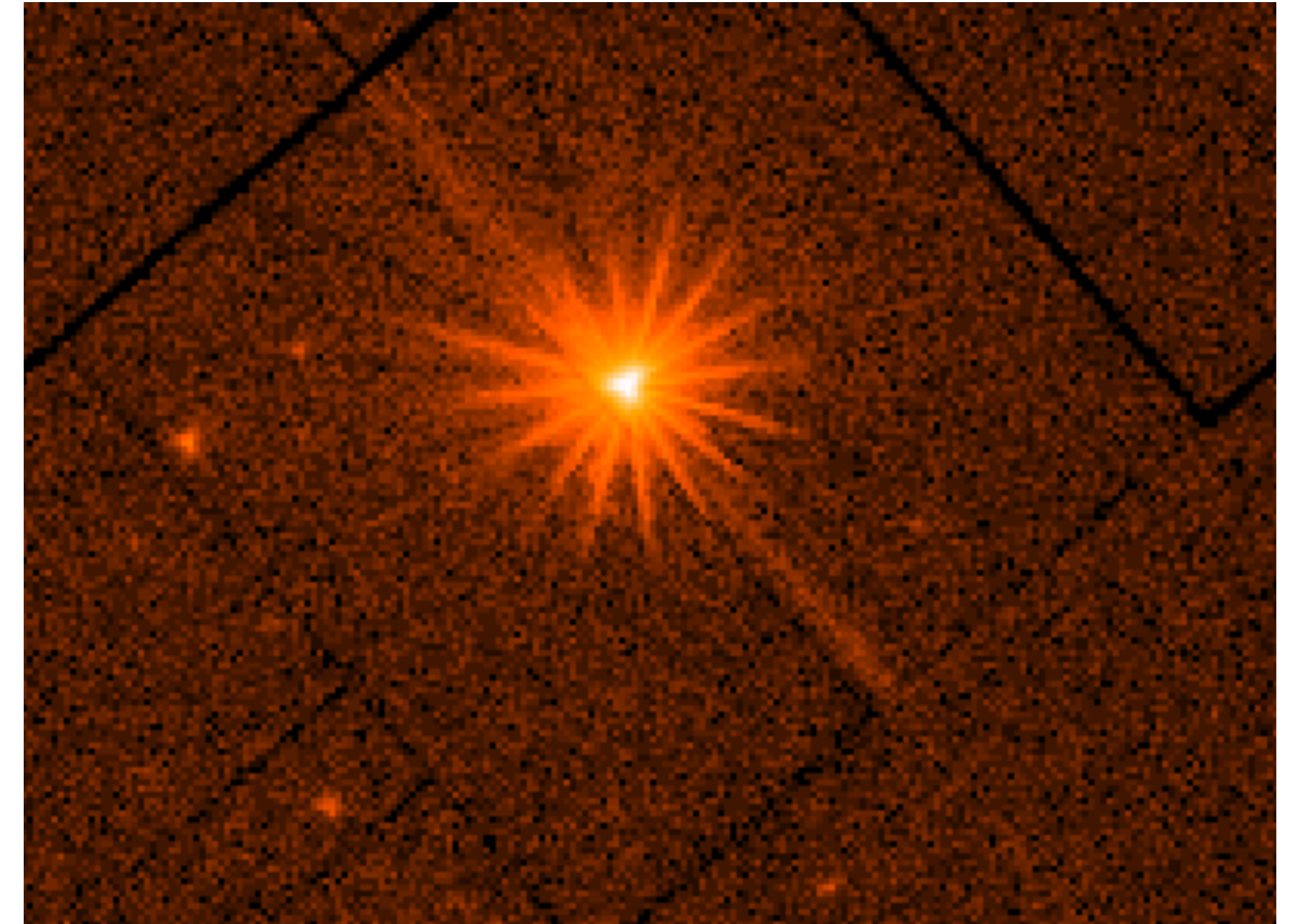
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Quasi-Periodic Pulsations (QPPs)



AB Dor A

- **Tertiary System** (AB Dor A, B, C, D)
- **Contributes 95% to Total Emission**
- **Rotates 50 times faster** than the Sun
- **Zero-Age-Main-Sequence Star**, spectral type K
- **It's young, magnetically active, fast rotating, flaring star.**



Comparing period and damping time of QPPs

AB Dor

0.1 - 15 keV
XMM-Newton

Solar

3 - 12 keV
RHESSI

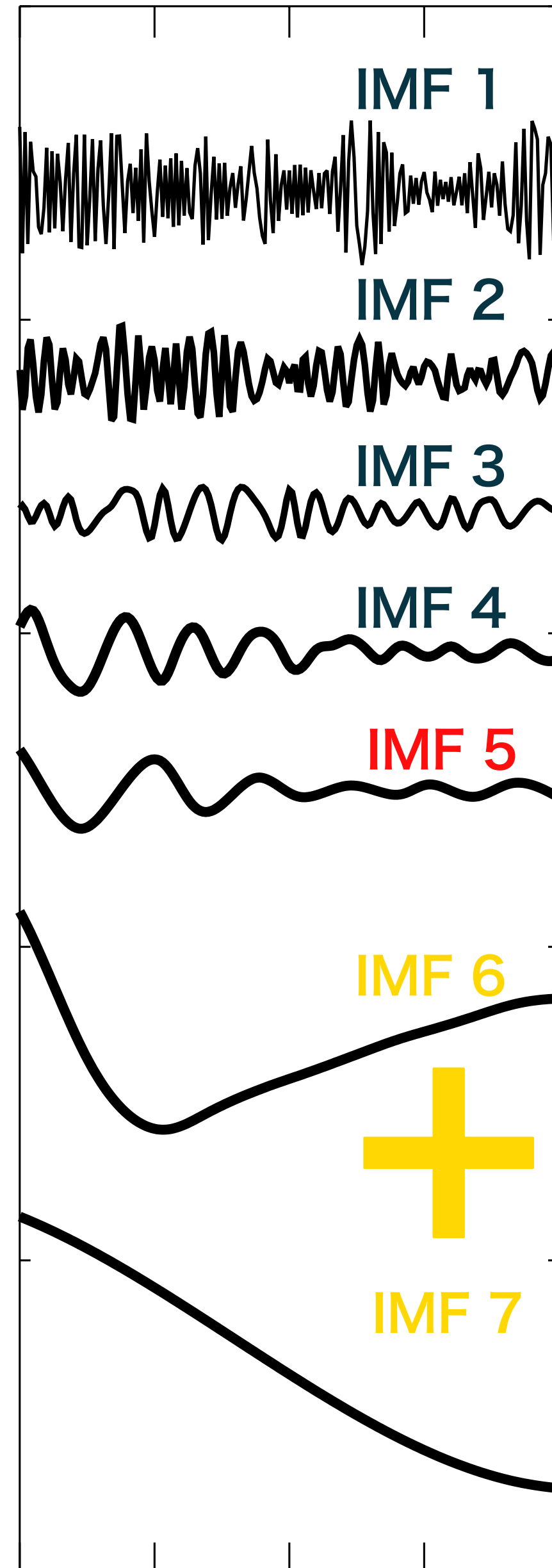
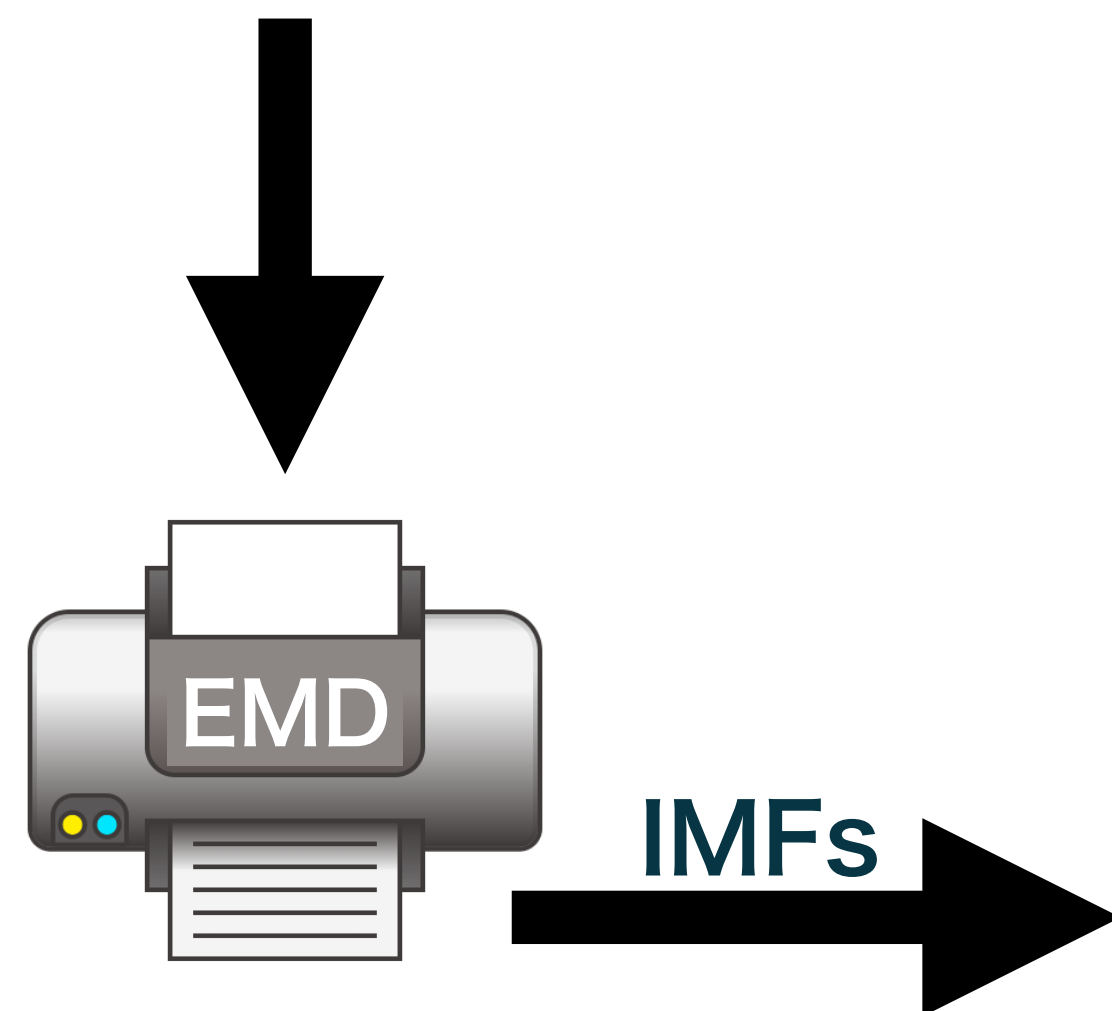
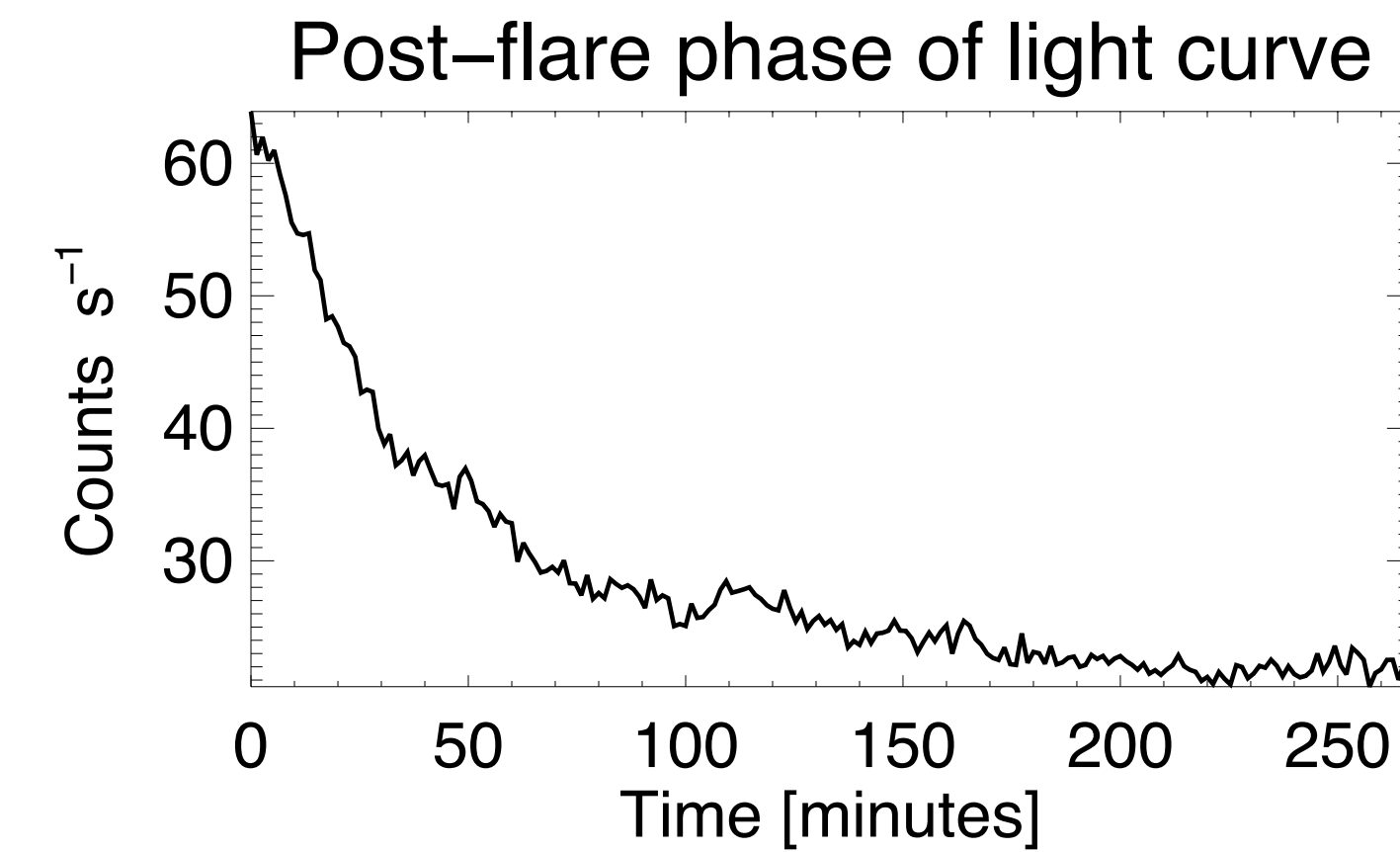
Stellar

0.3 - 2 keV
XMM-Newton

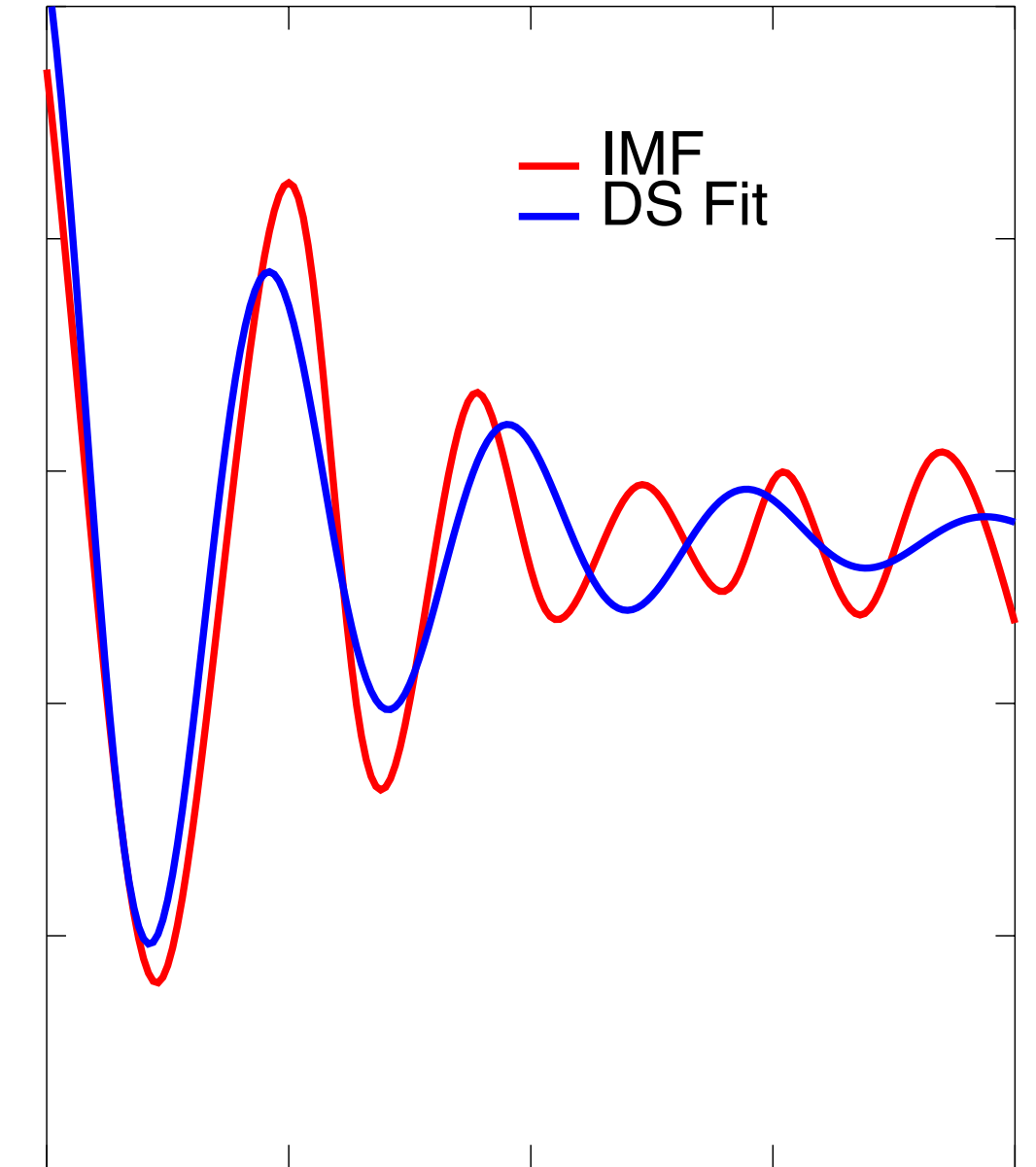
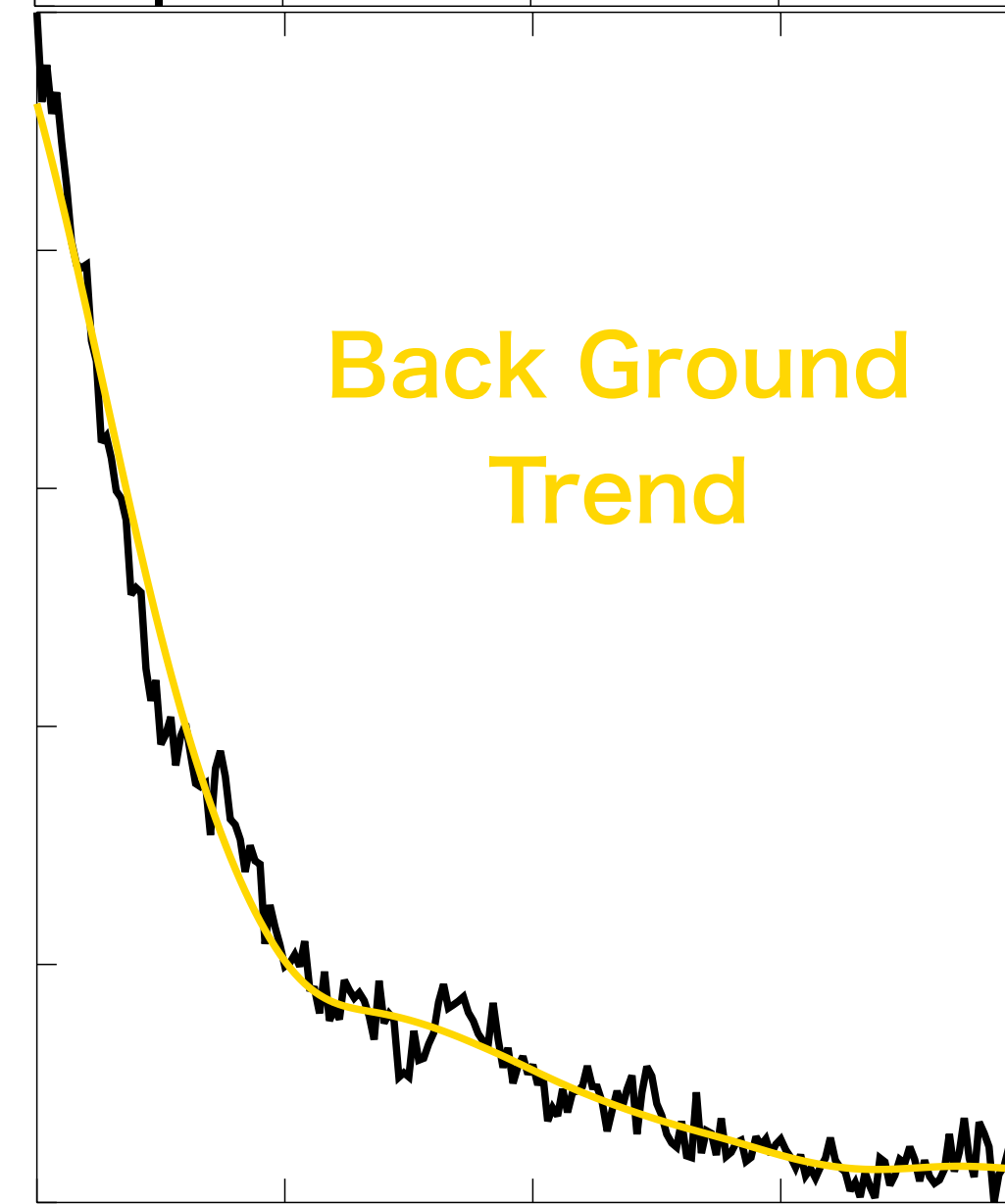
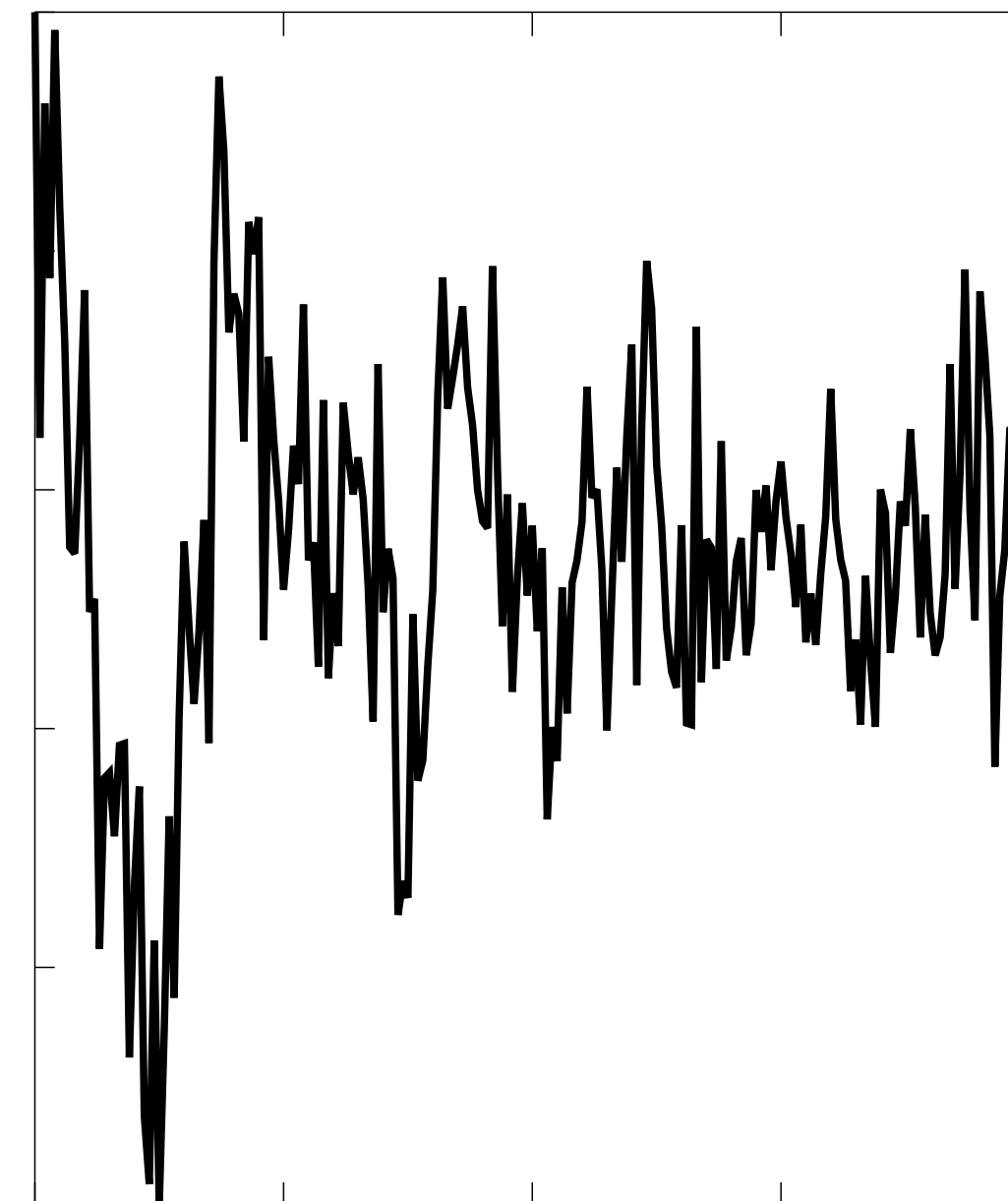
I. H. Cho et al (2016)

Comparison of Damped Oscillations in Solar and Stellar X-Ray Flares

Method



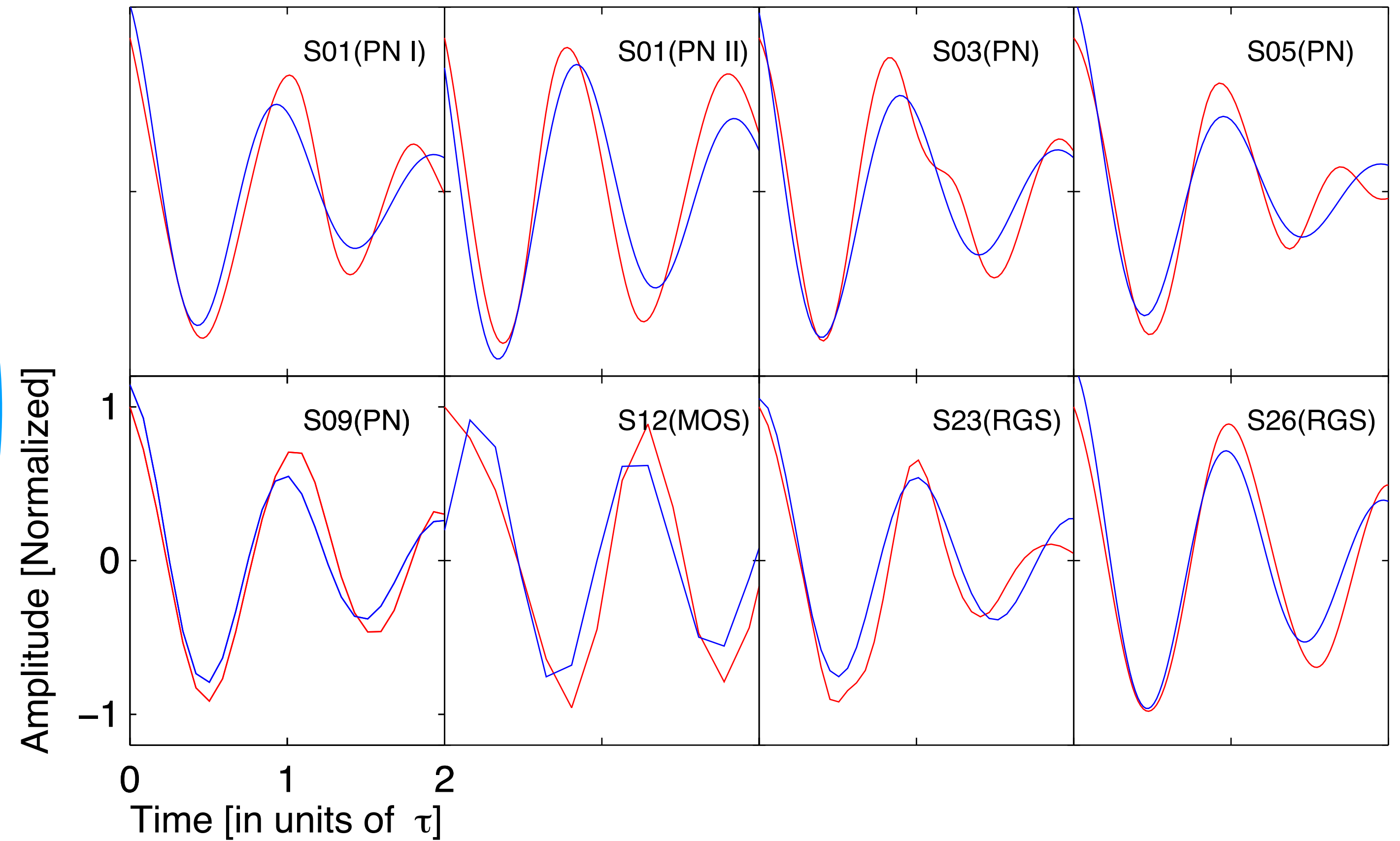
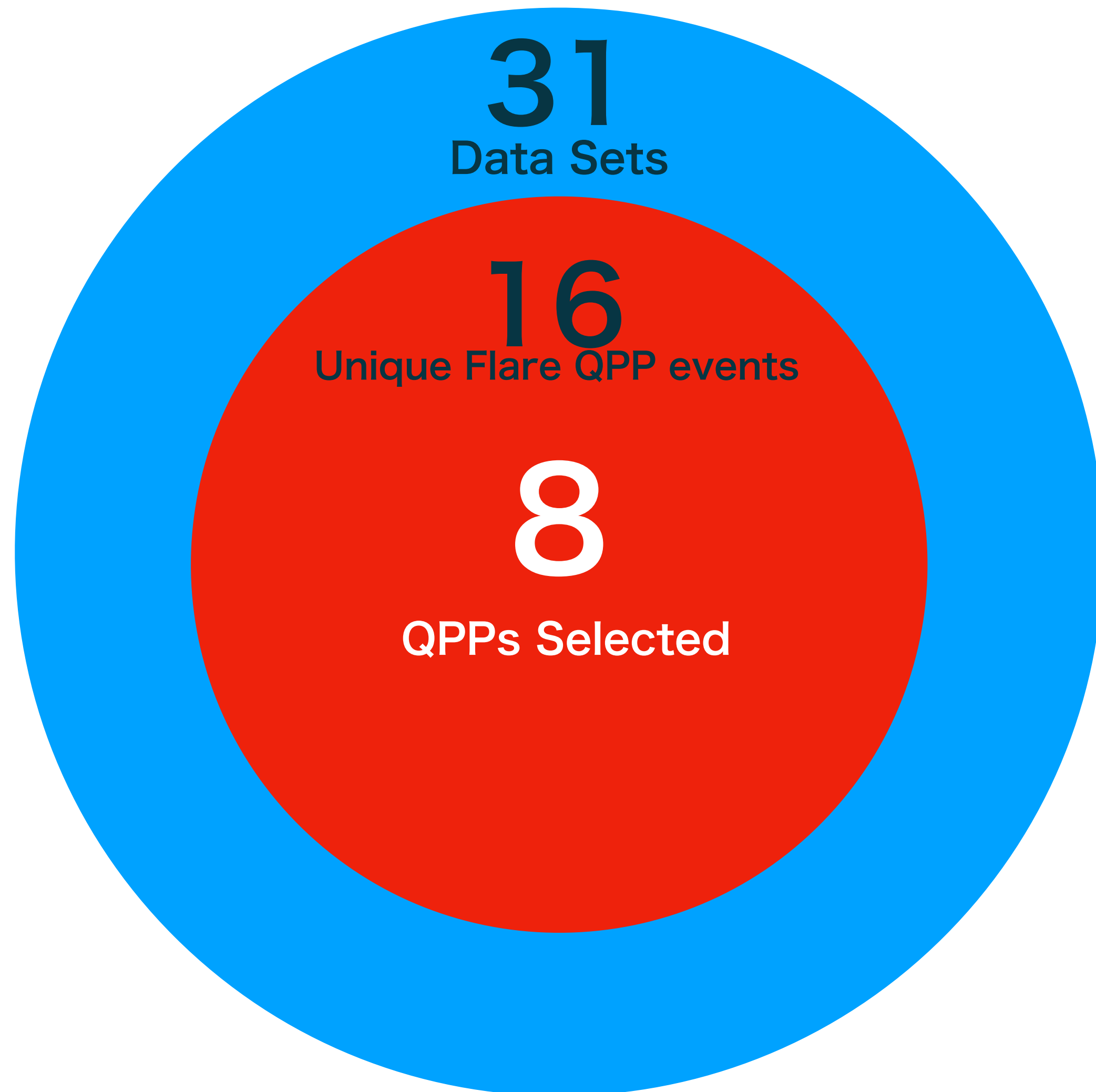
Trend Subtracted light curve



$$F(t) = A \exp\left(-\frac{t}{\tau}\right) \sin\left(\frac{2\pi t}{P} - \phi\right)$$

Damping Time τ Oscillation Period P

Results



Results

