

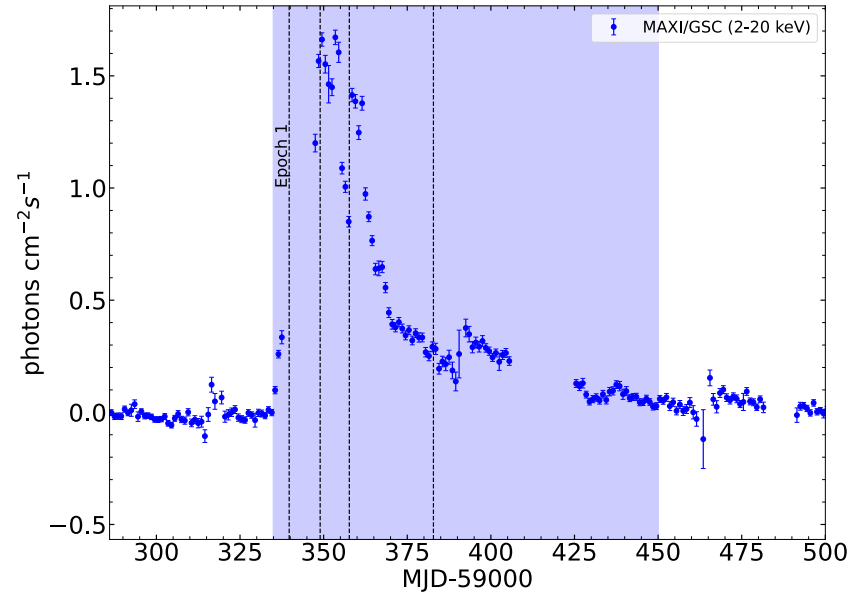
Characterizing the Reflection Spectrum
of
Maxi J1803-298
with NuSTAR and NICER

Oluwashina Adegoke

Cahill Center for Astronomy and Astrophysics
Caltech

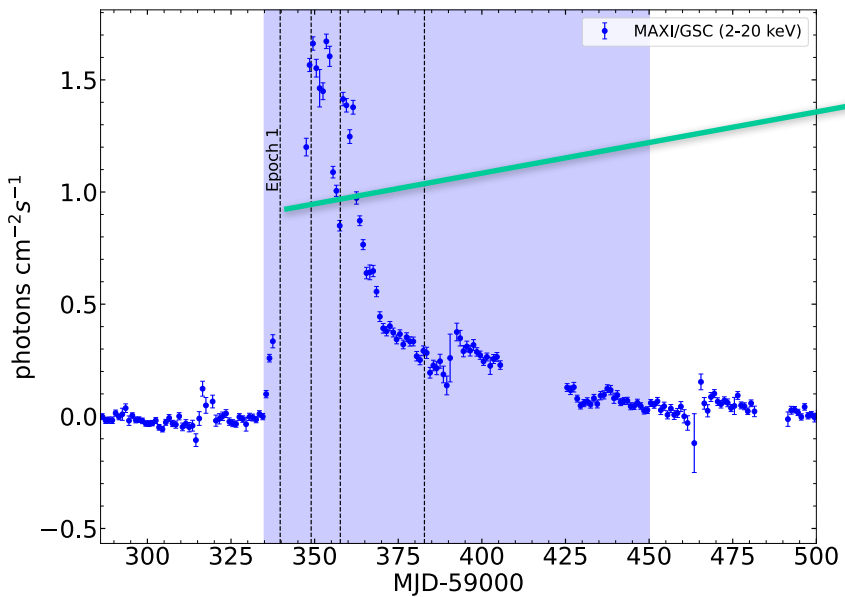
Light curves

MAXI light curves

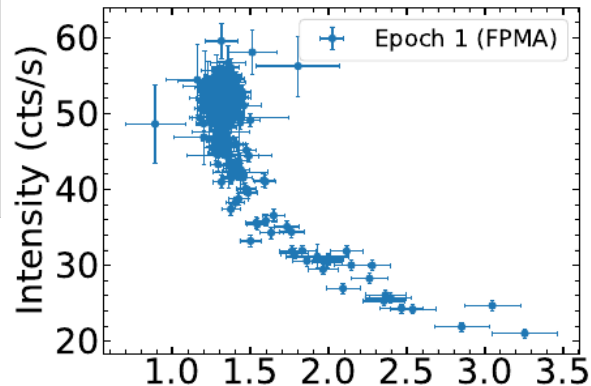
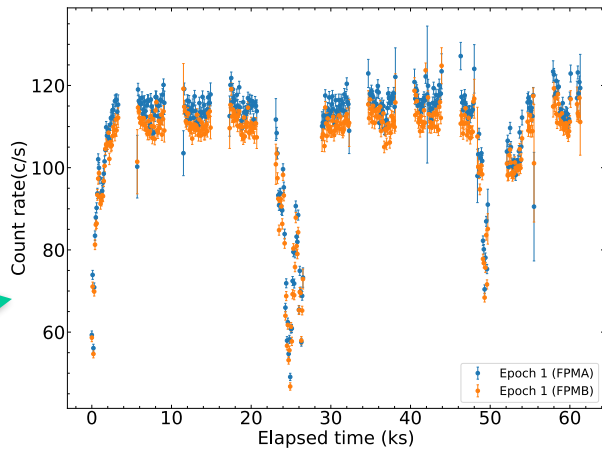


Light curves

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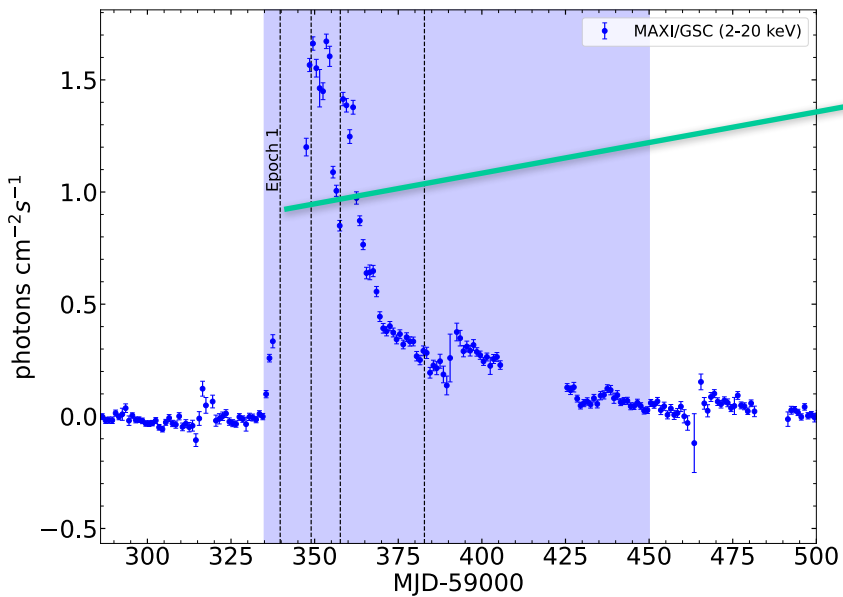


NuSTAR light curves/HR

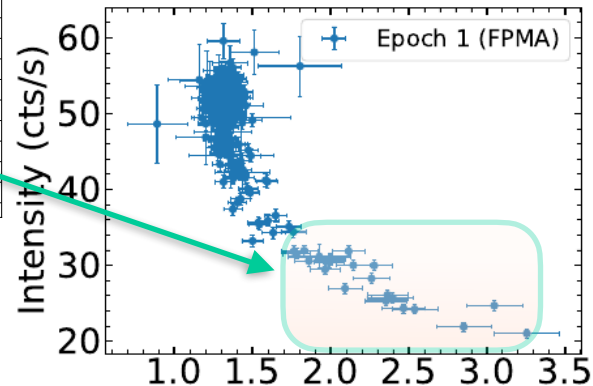
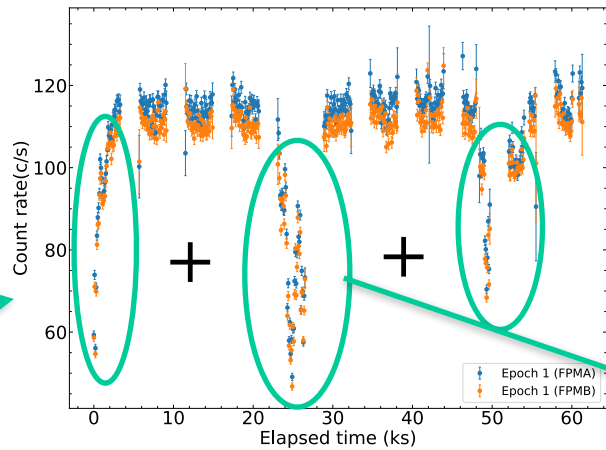


Light curves

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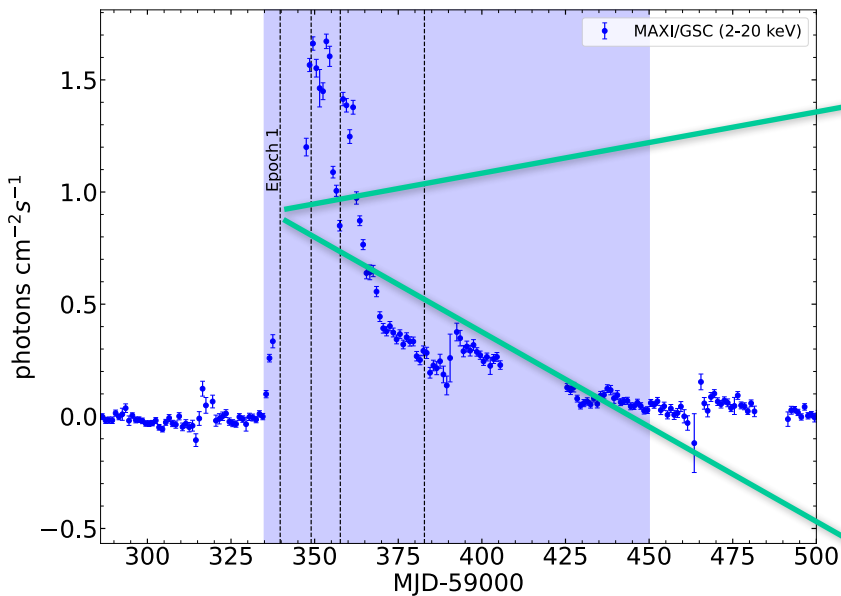


NuSTAR light curves/HR

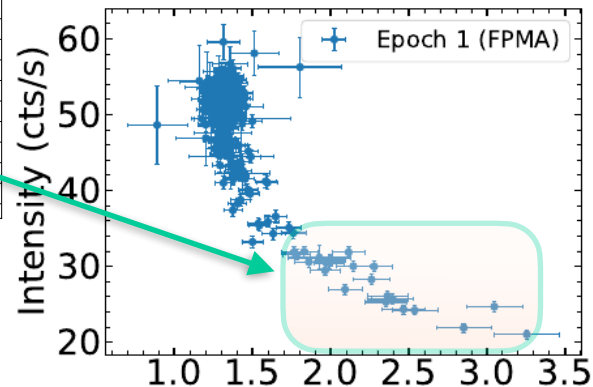
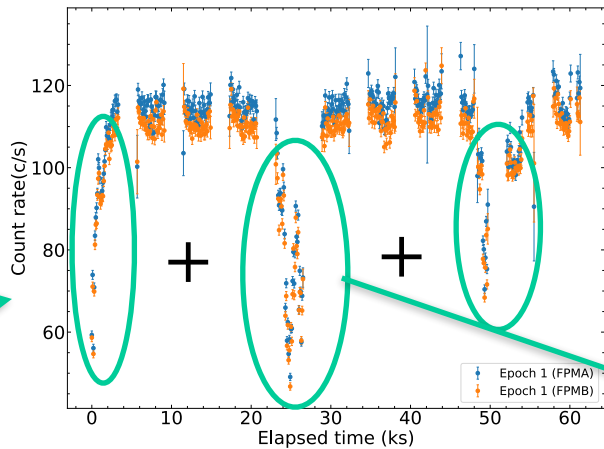


Light curves

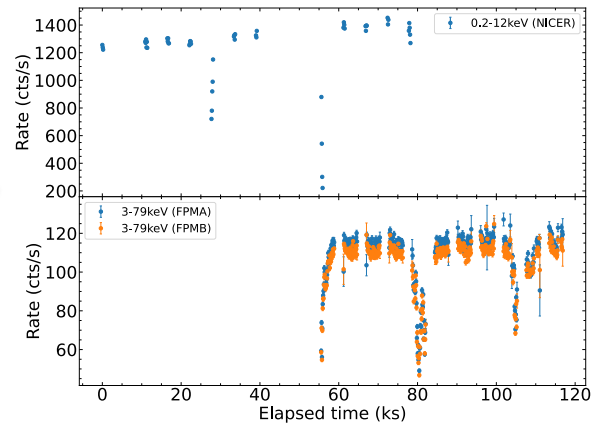
MAXI light curves



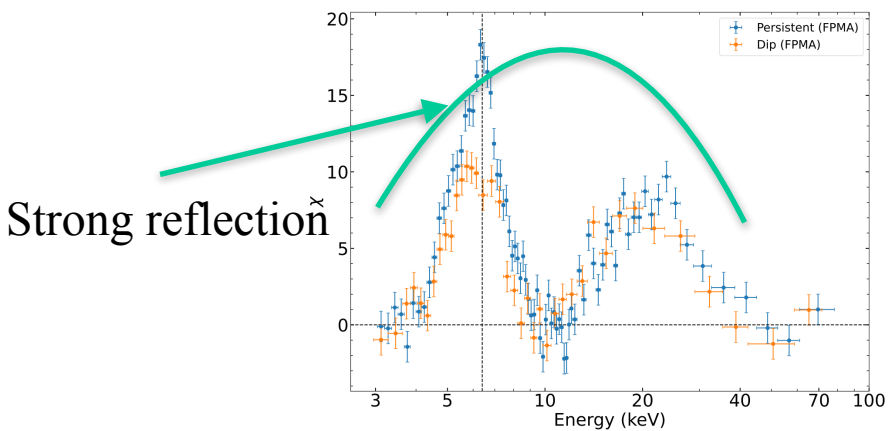
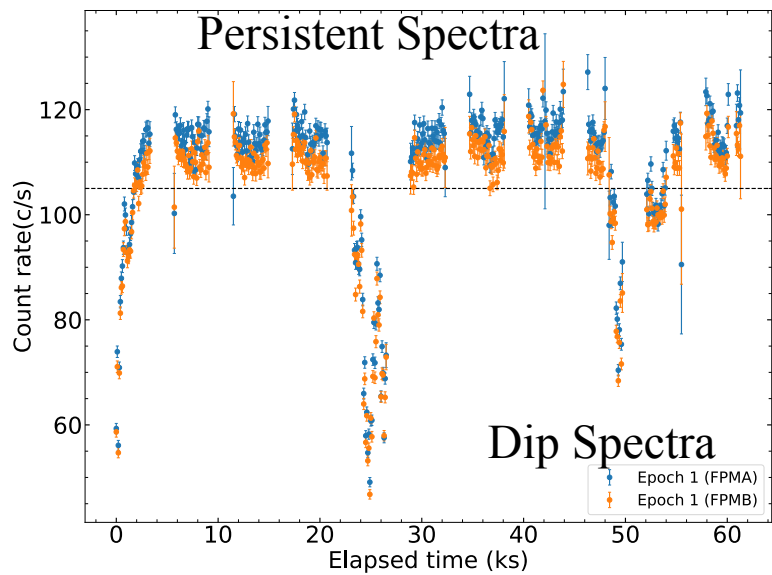
NuSTAR light curves/HR



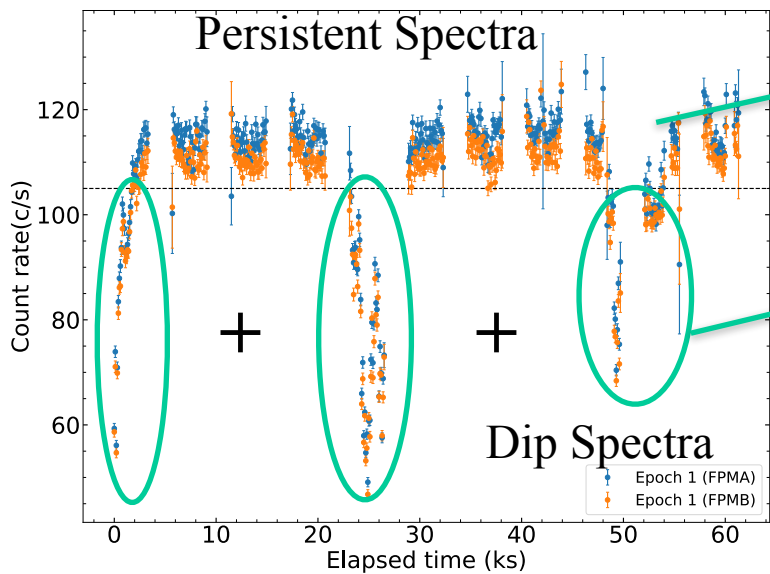
NICER/NuSTAR light curves



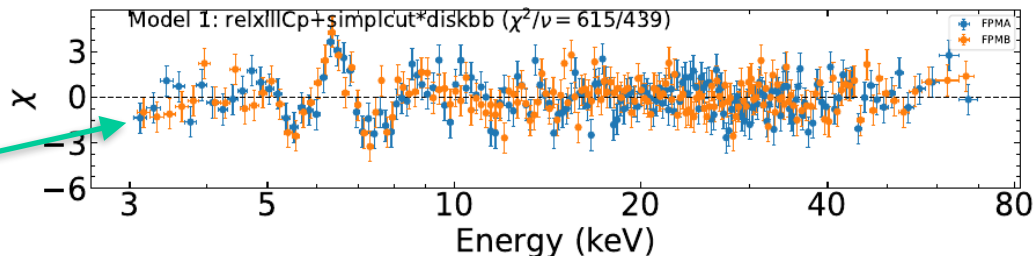
Spectral Analysis: NuSTAR



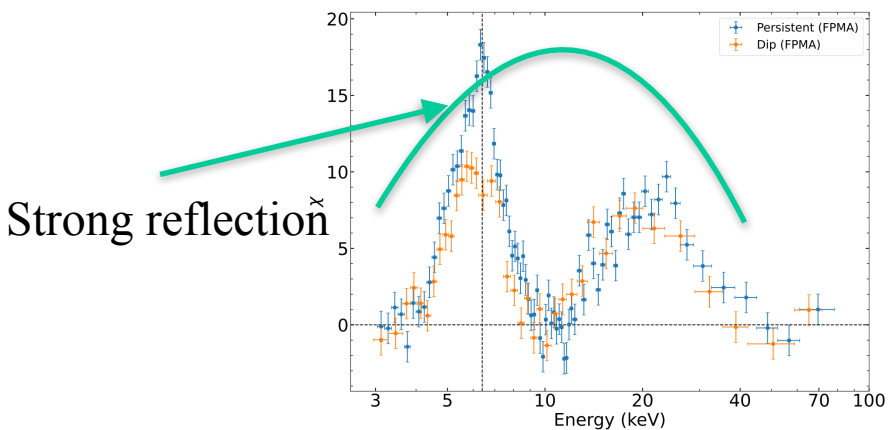
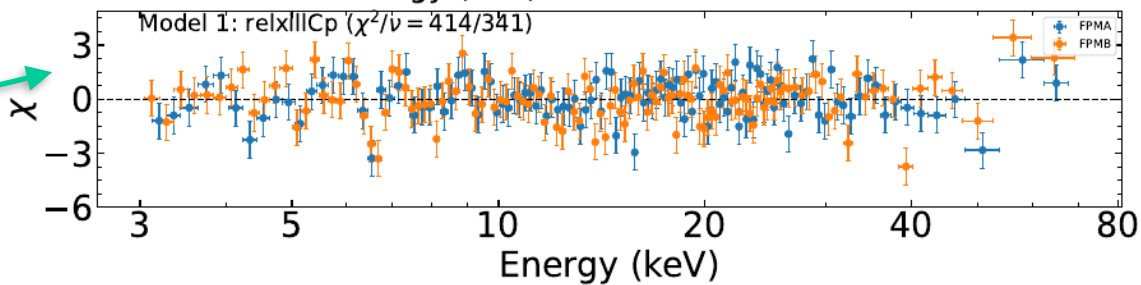
Spectral Analysis: NuSTAR



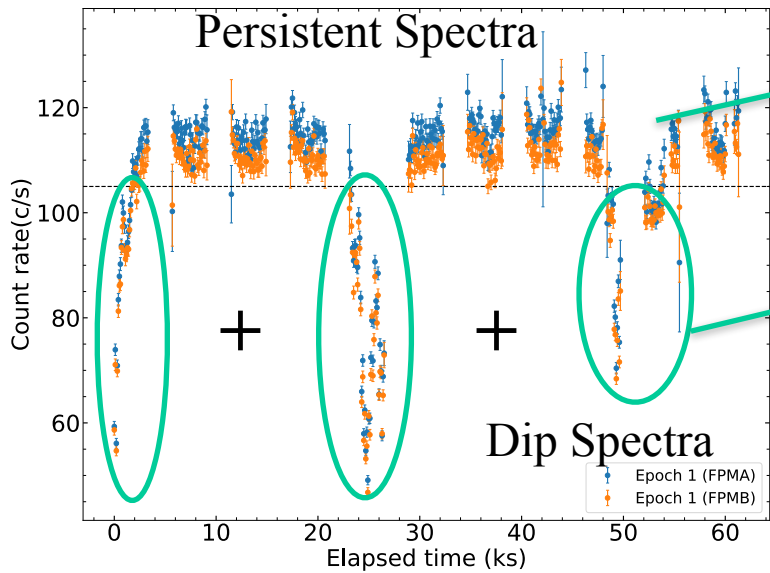
Persistent



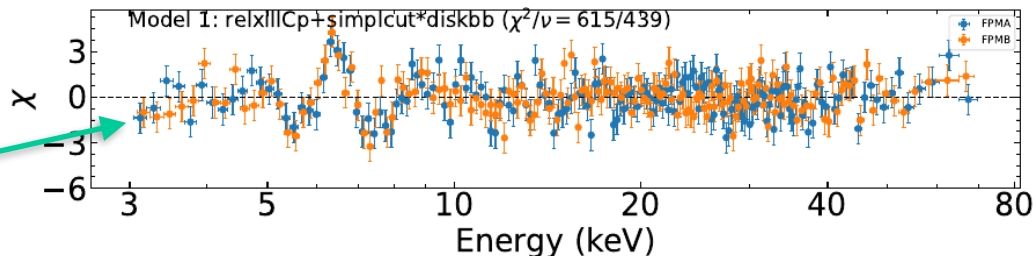
Dip



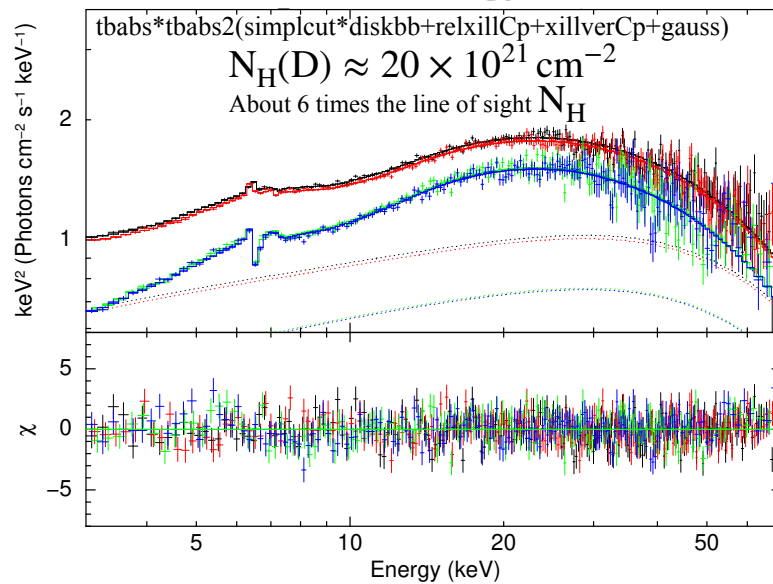
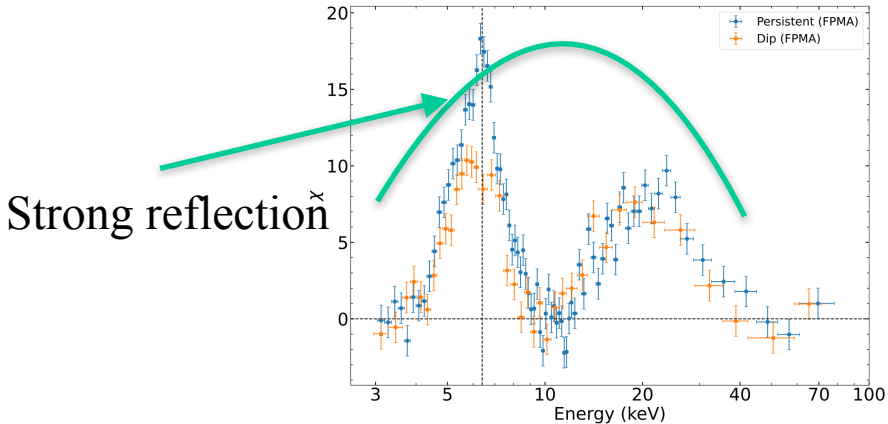
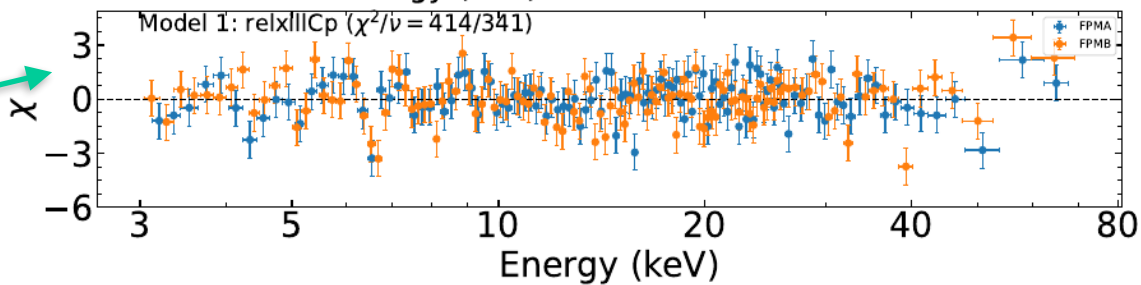
Spectral Analysis: NuSTAR



Persistent

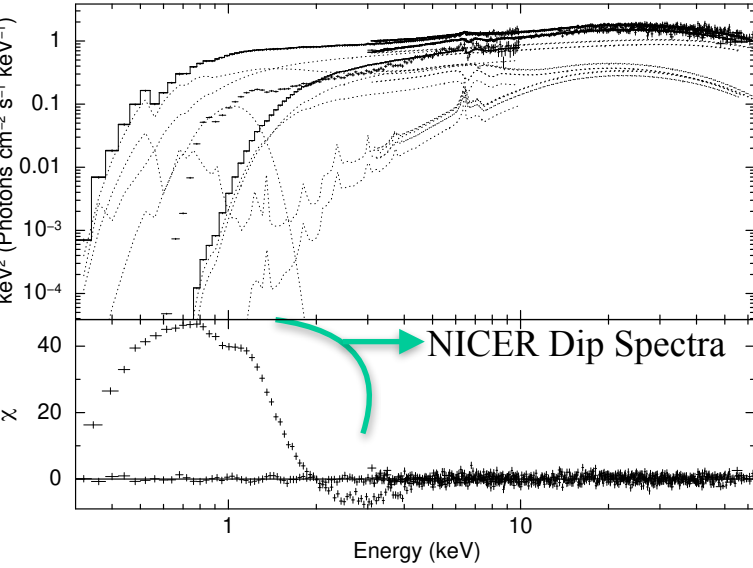


Dip

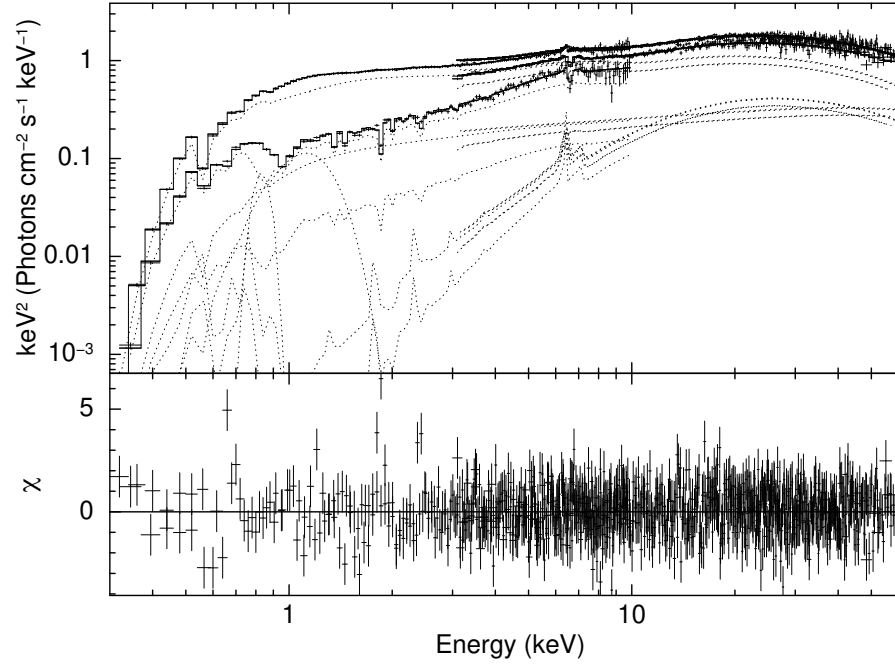


Spectral Analysis: NuSTAR/NICER

NuSTAR+NICER



NuSTAR+NICER with XSTAR



$$N_{\text{H}}(\text{D}) \approx 50 \times 10^{21} \text{ cm}^{-2}$$
$$\log \xi(\text{D}) \approx 2.1$$

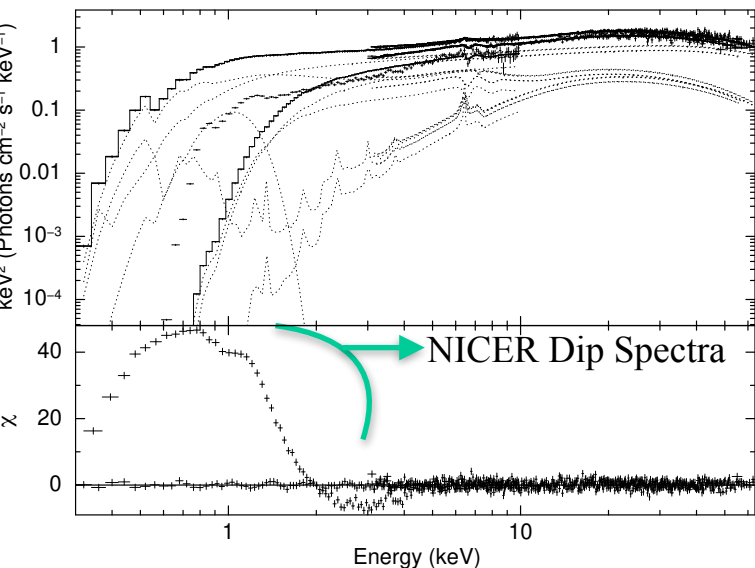
$$N_{\text{H}}(\text{P}) \approx 1.0 \times 10^{21} \text{ cm}^{-2}$$

$$i \approx 70 \text{ deg}$$

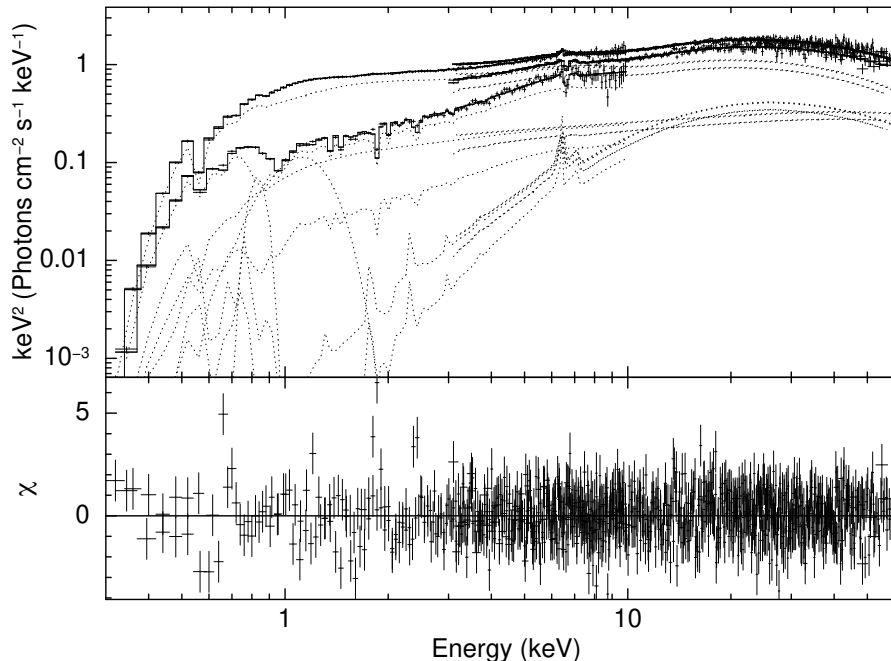
$$a^* \approx 0.99$$

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NuSTAR+NICER with XSTAR



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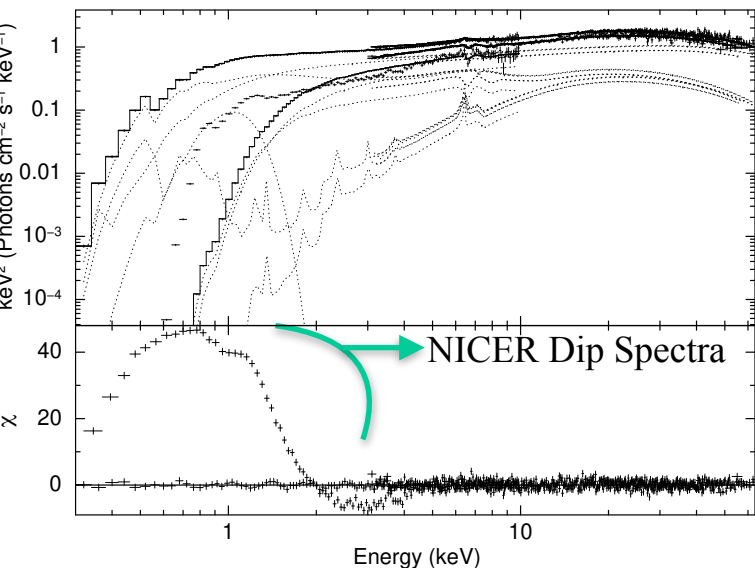
$$a^* \approx 0.99$$

Absorption line dips:

- Prominent absorption line in Dip Spectra at 6.61keV ($> 3\sigma$)
- If linked with He-like FeXXV, corresponds to velocity redshift $\sim 3800 \text{ km s}^{-1}$
- Possible absorption line in persistent spectra at 7.12keV ($< 1.5\sigma$)
- If linked with H-like FeXXVI, corresponds to velocity blueshift $\sim 7100 \text{ km s}^{-1}$

Spectral Analysis: NuSTAR/NICER

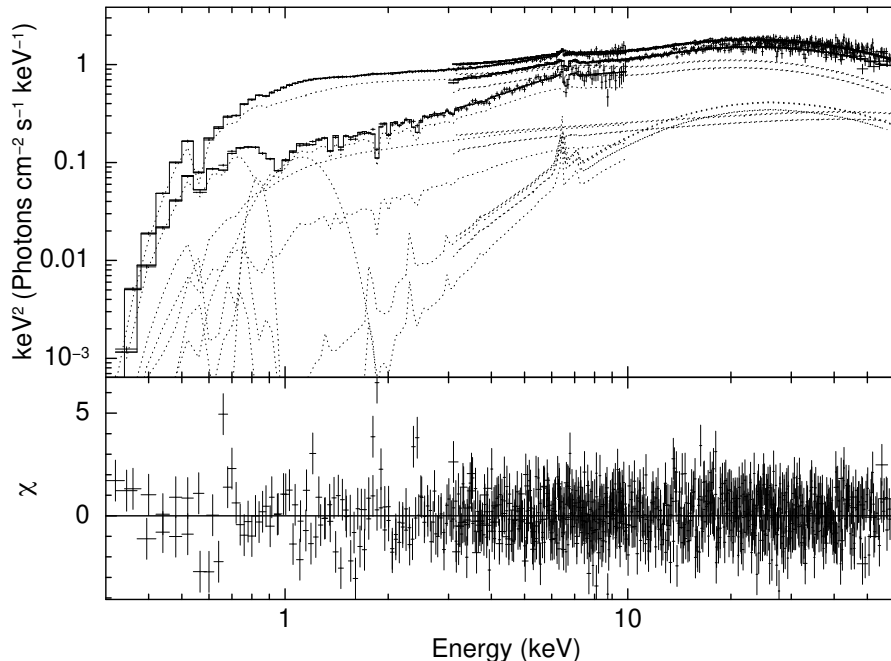
NuSTAR+NICER



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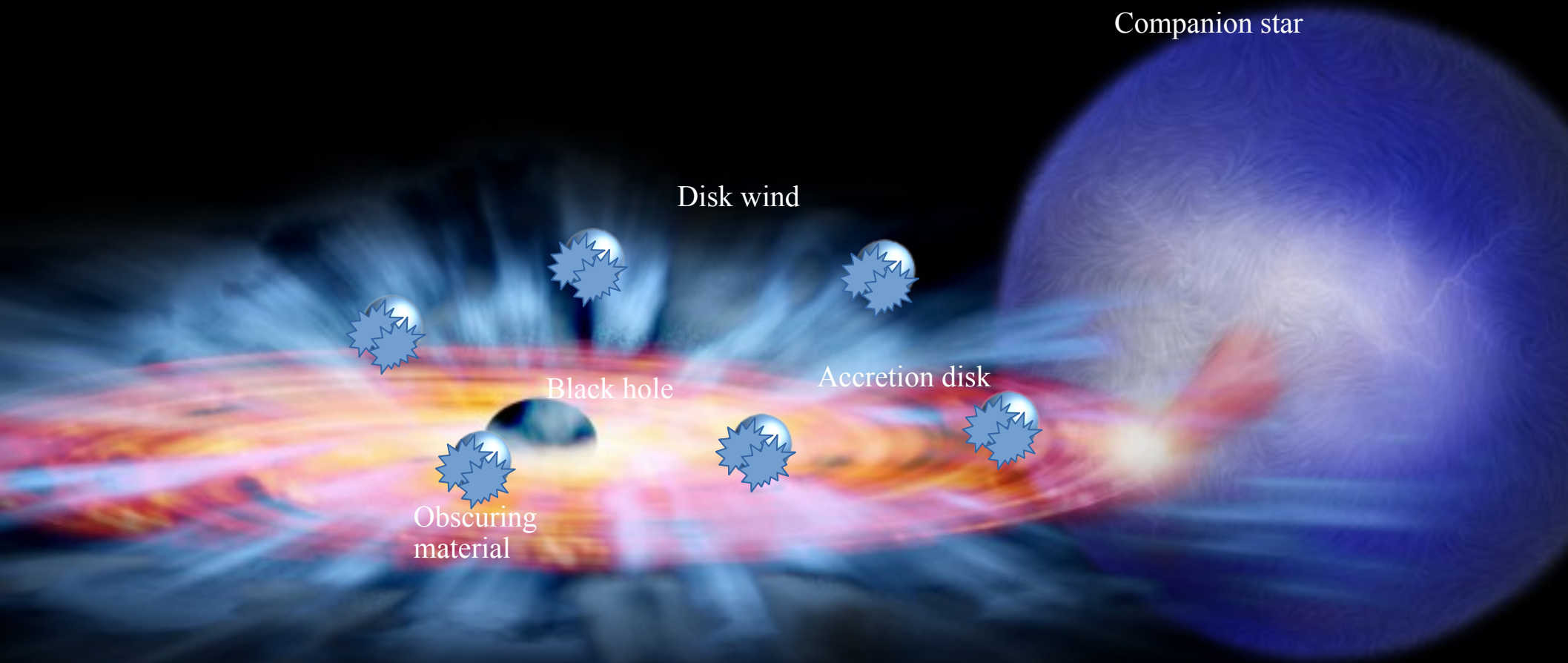
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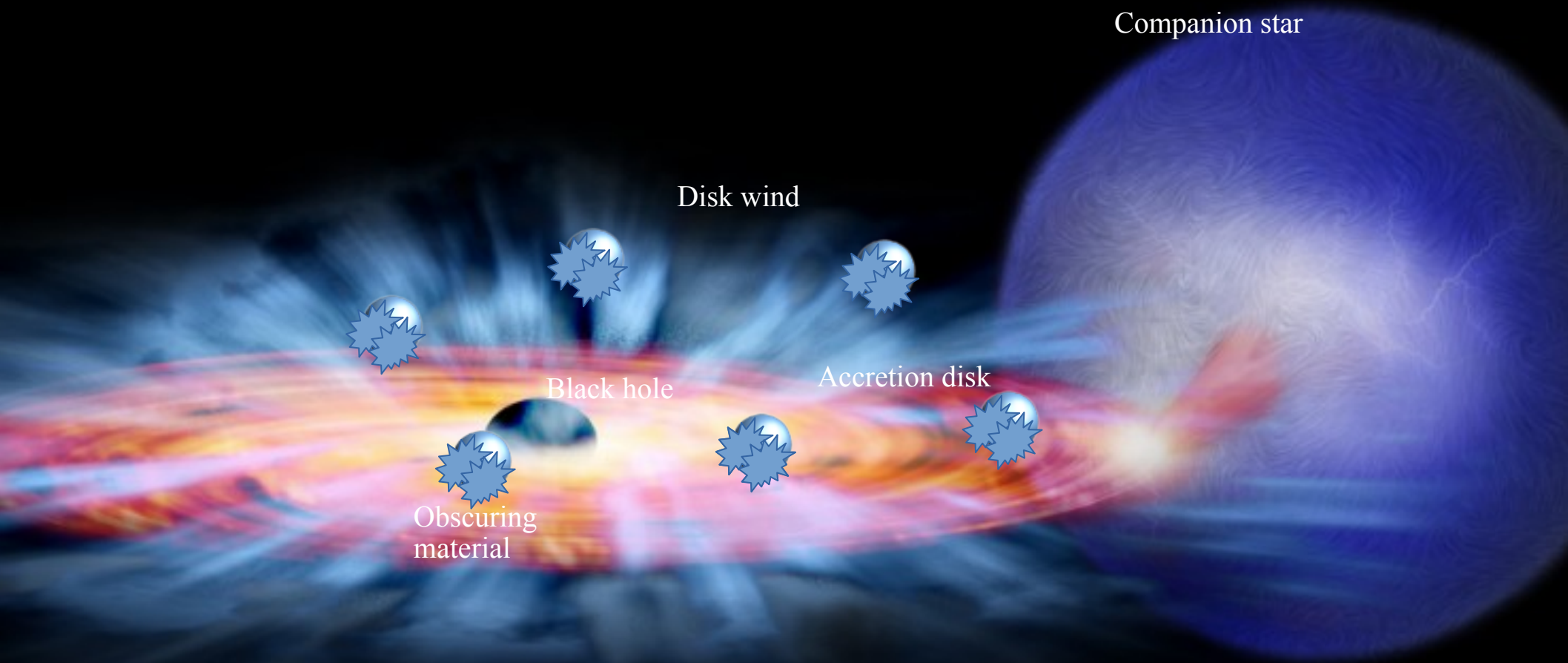
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Take away: Rapidly spinning, high inclination source with disk wind present and blobs of obscuring material intermittently coming along the line of sight causing the dips

The big picture



The big picture



Thanks!...