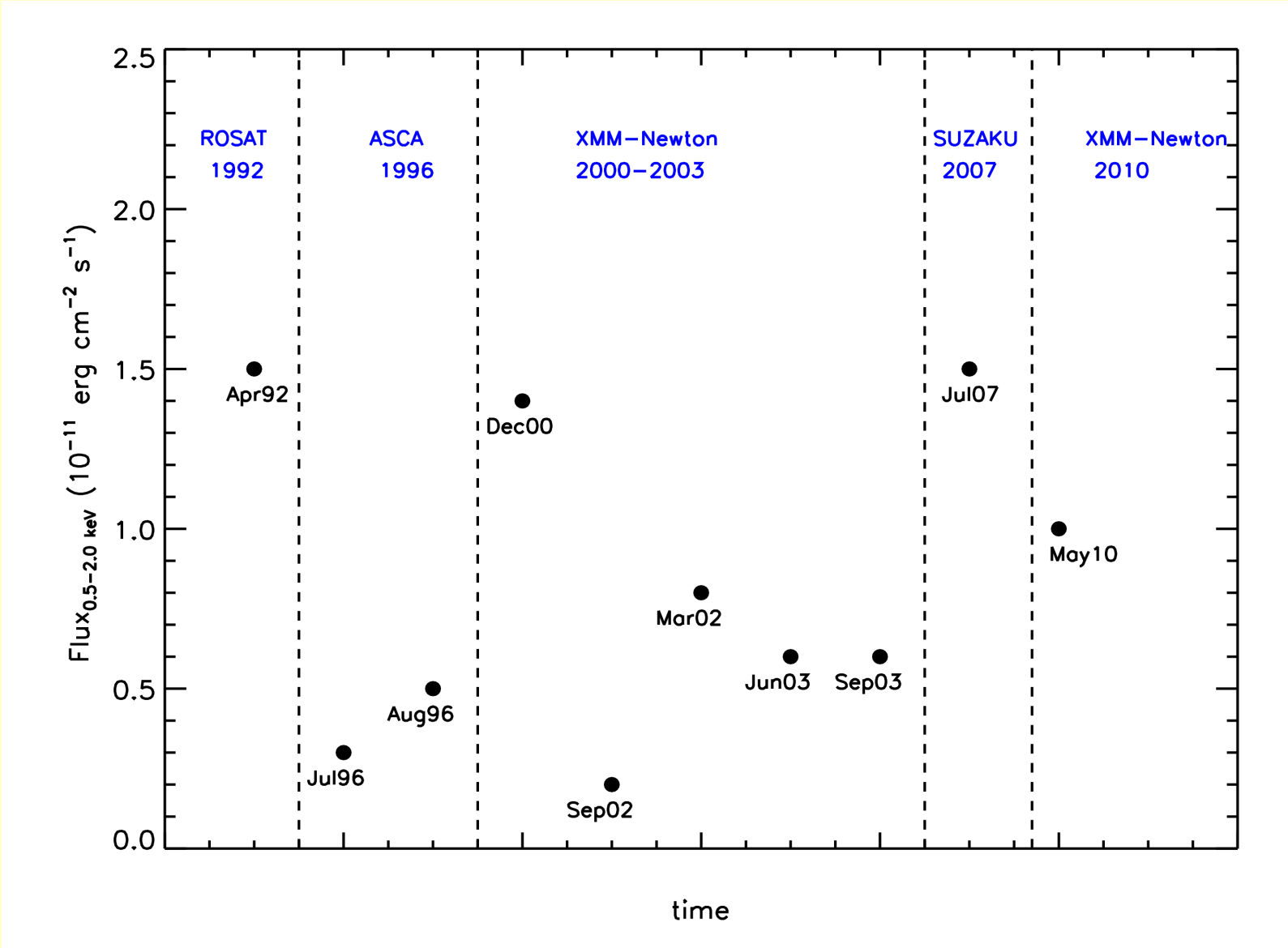
X-ray/UV observation of 1H0419-577

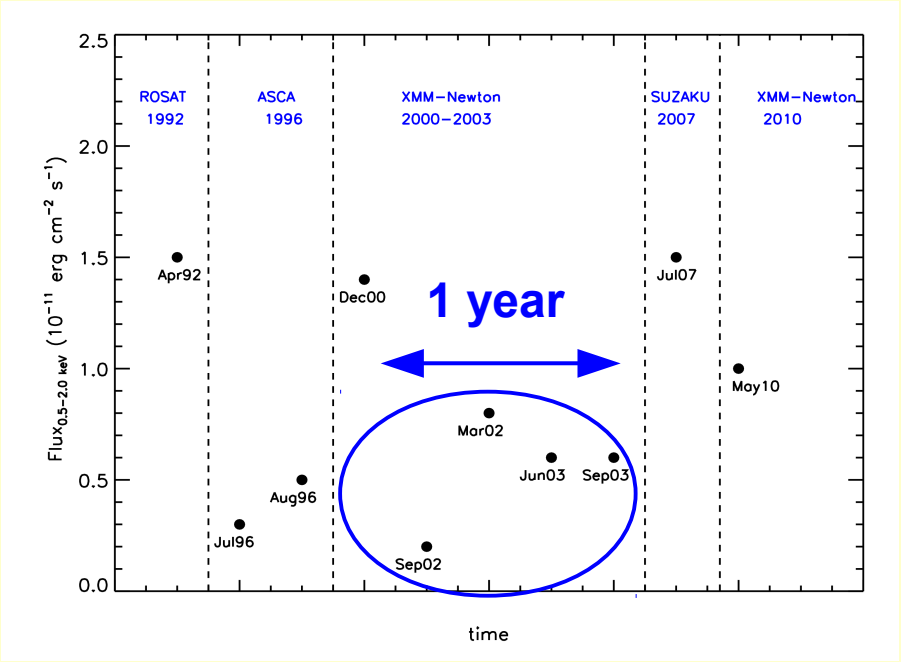
SRON
Netherlands Institute for Space Research

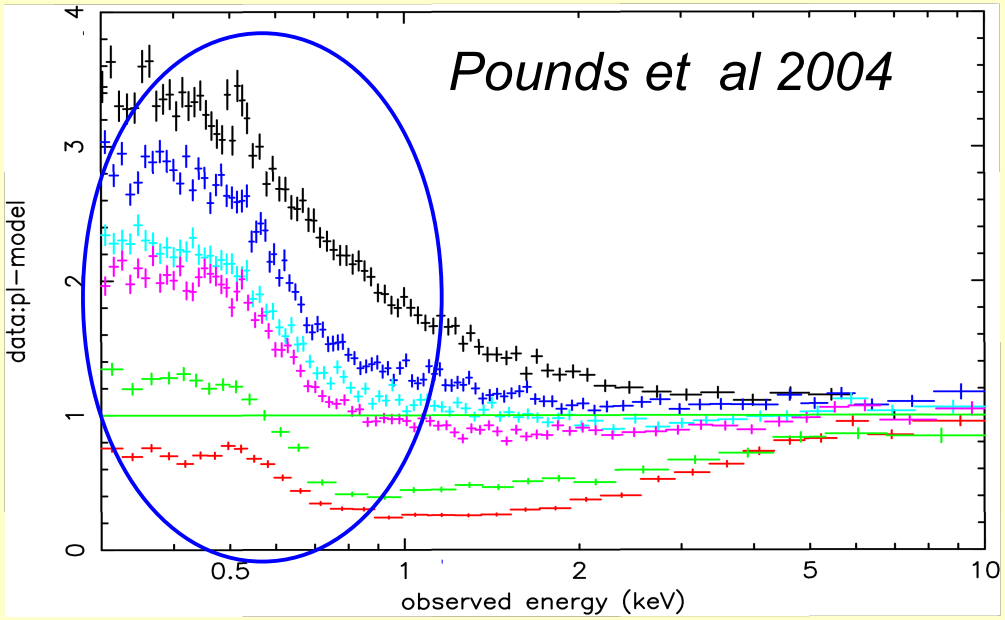
Di Gesu Laura, Costantini Elisa et al

1H0419-577: a peculiar Seyfert 1

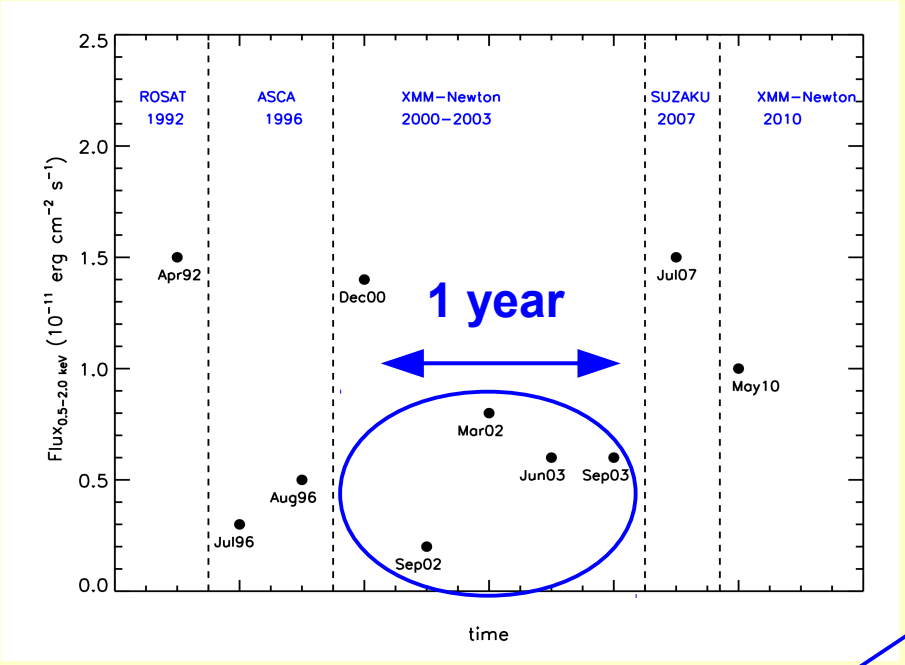


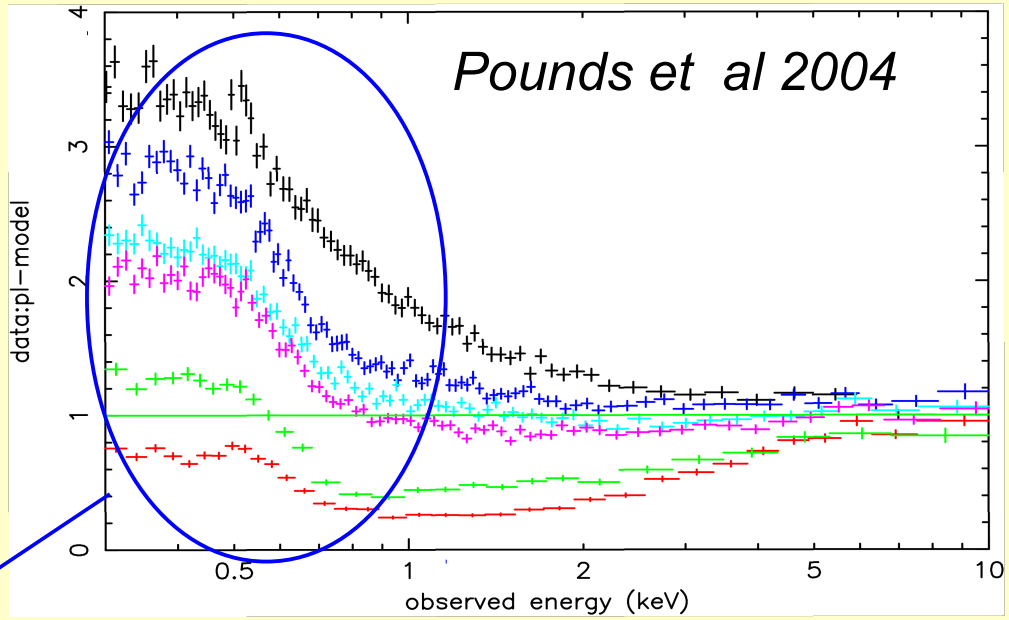
The X-ray variability





The X-ray variability





Absorption based models (e.g. Pounds 2004, Turner 2009)

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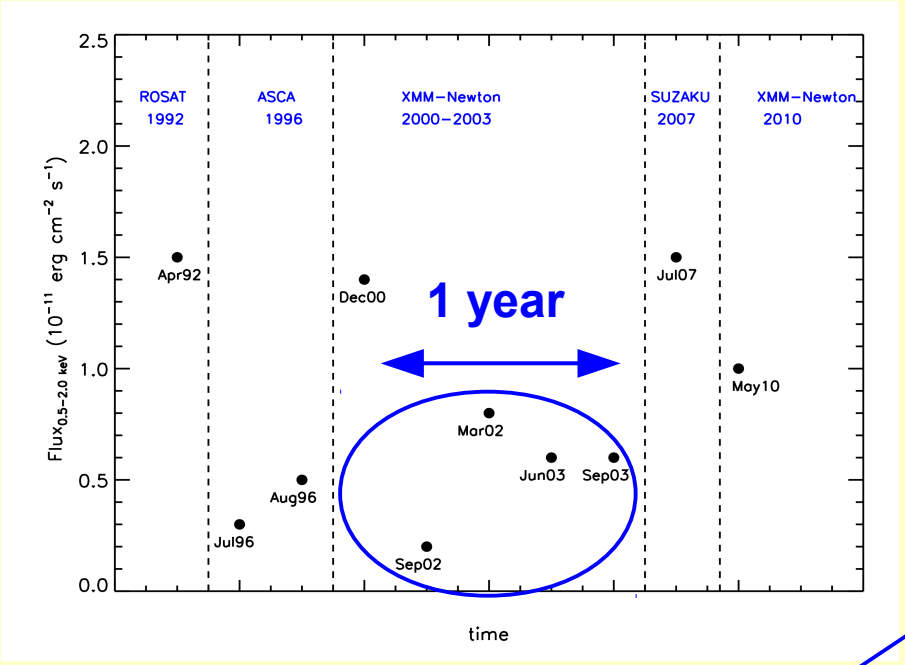
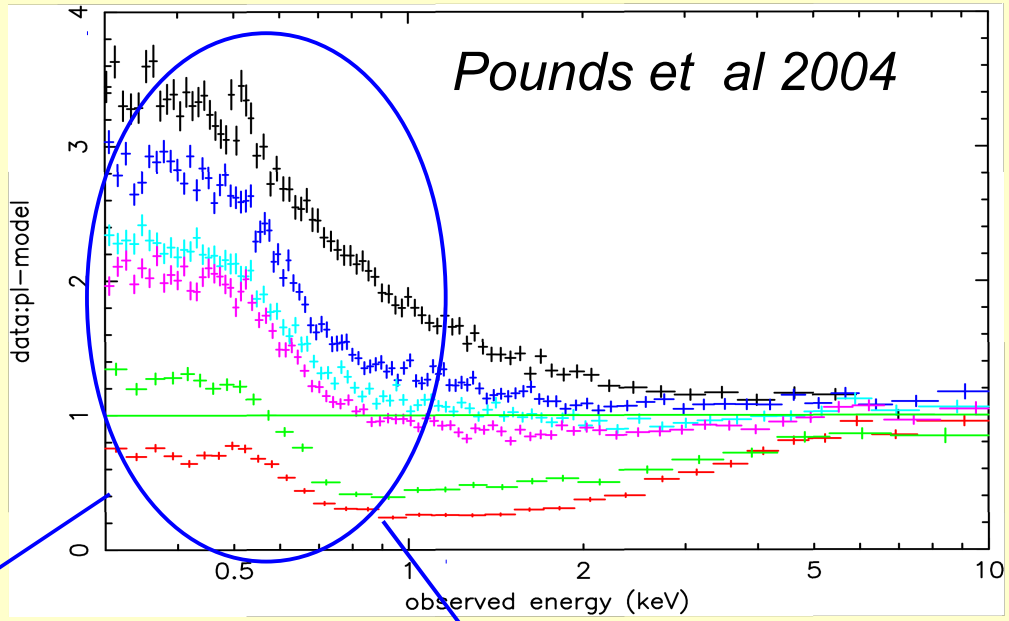
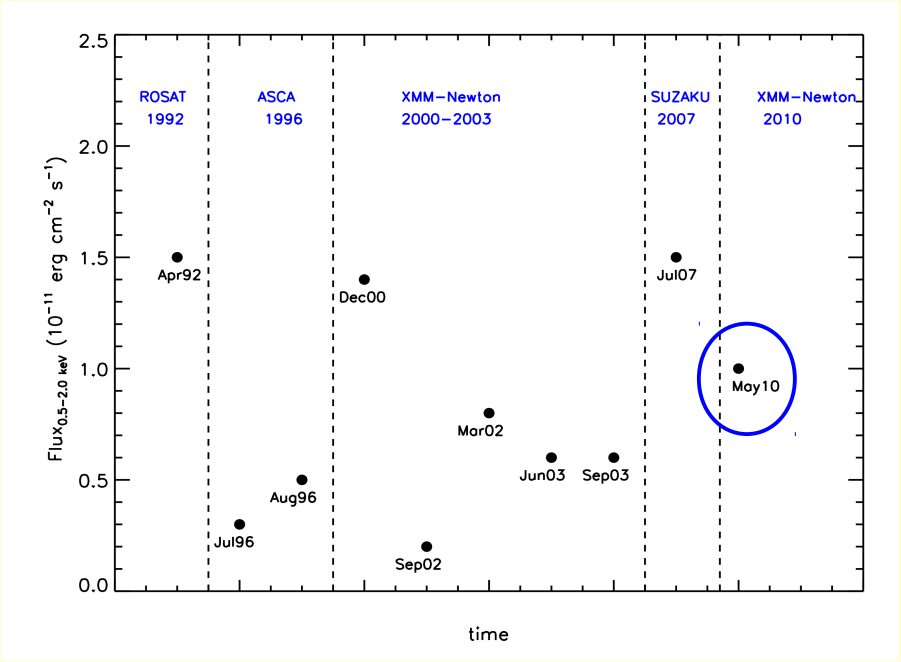




Absorption based models (e.g. Pounds 2004, Turner 2009)

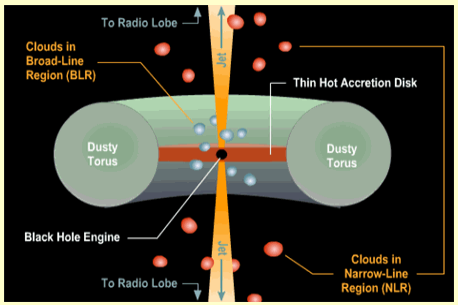
Reflection model (e.g. Fabian 2005)

An X-ray/UV campaign



Simultaneous

XMM-Newton
167 ks



HST/COS
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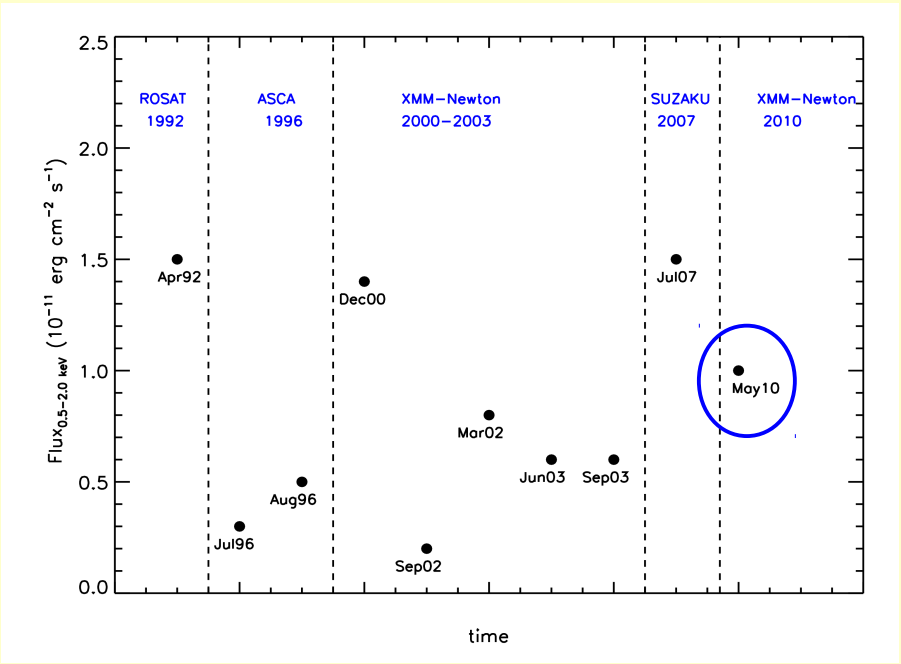

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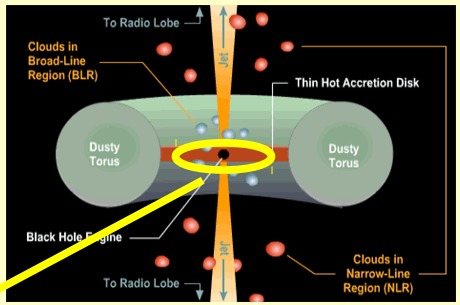

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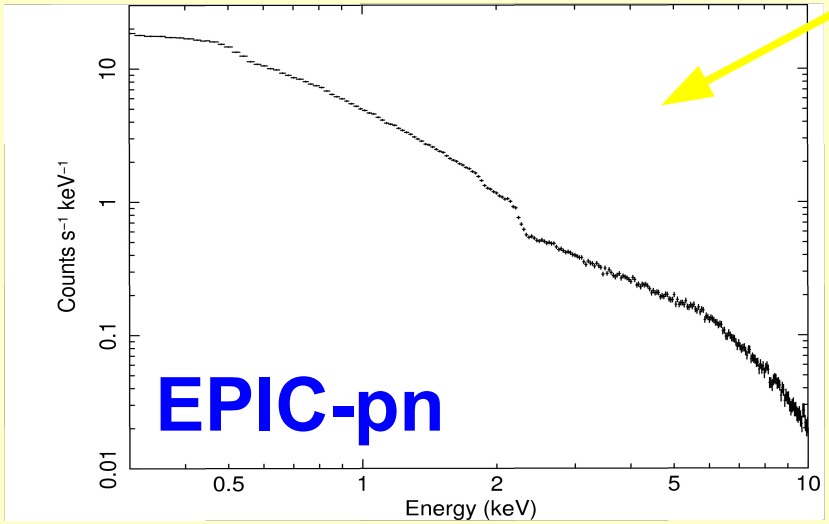
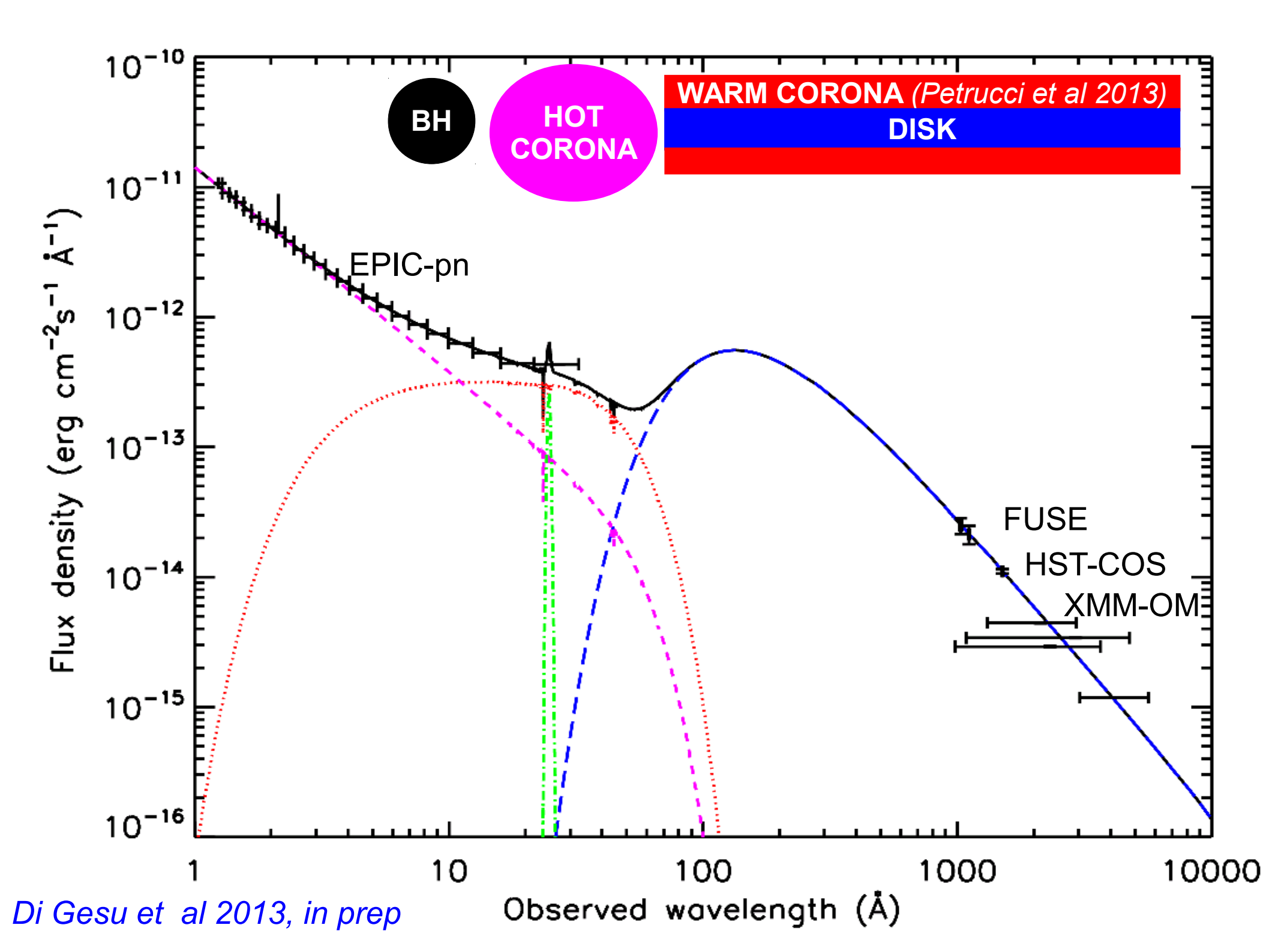
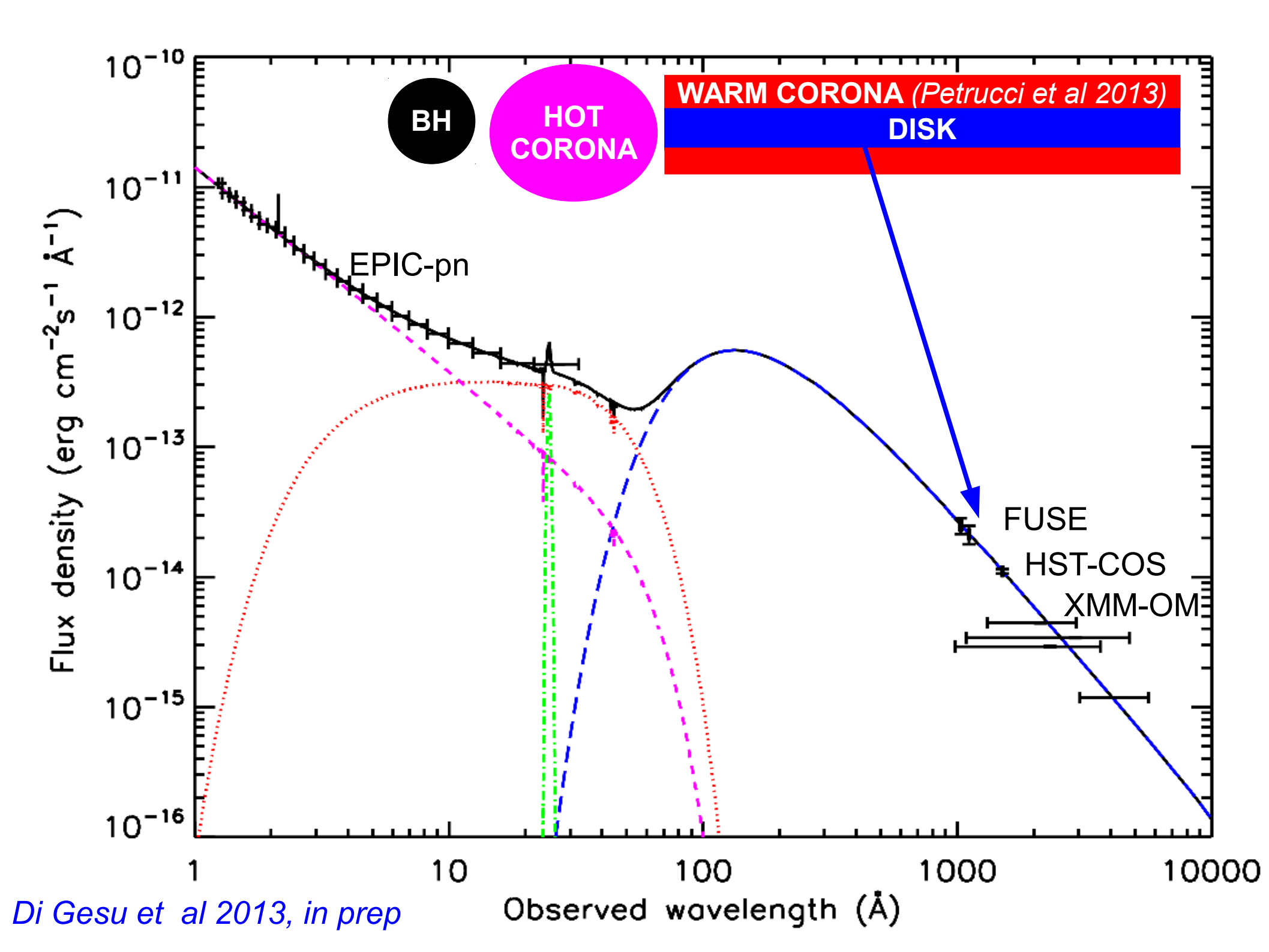




Di Gesu et al 2013, in prep



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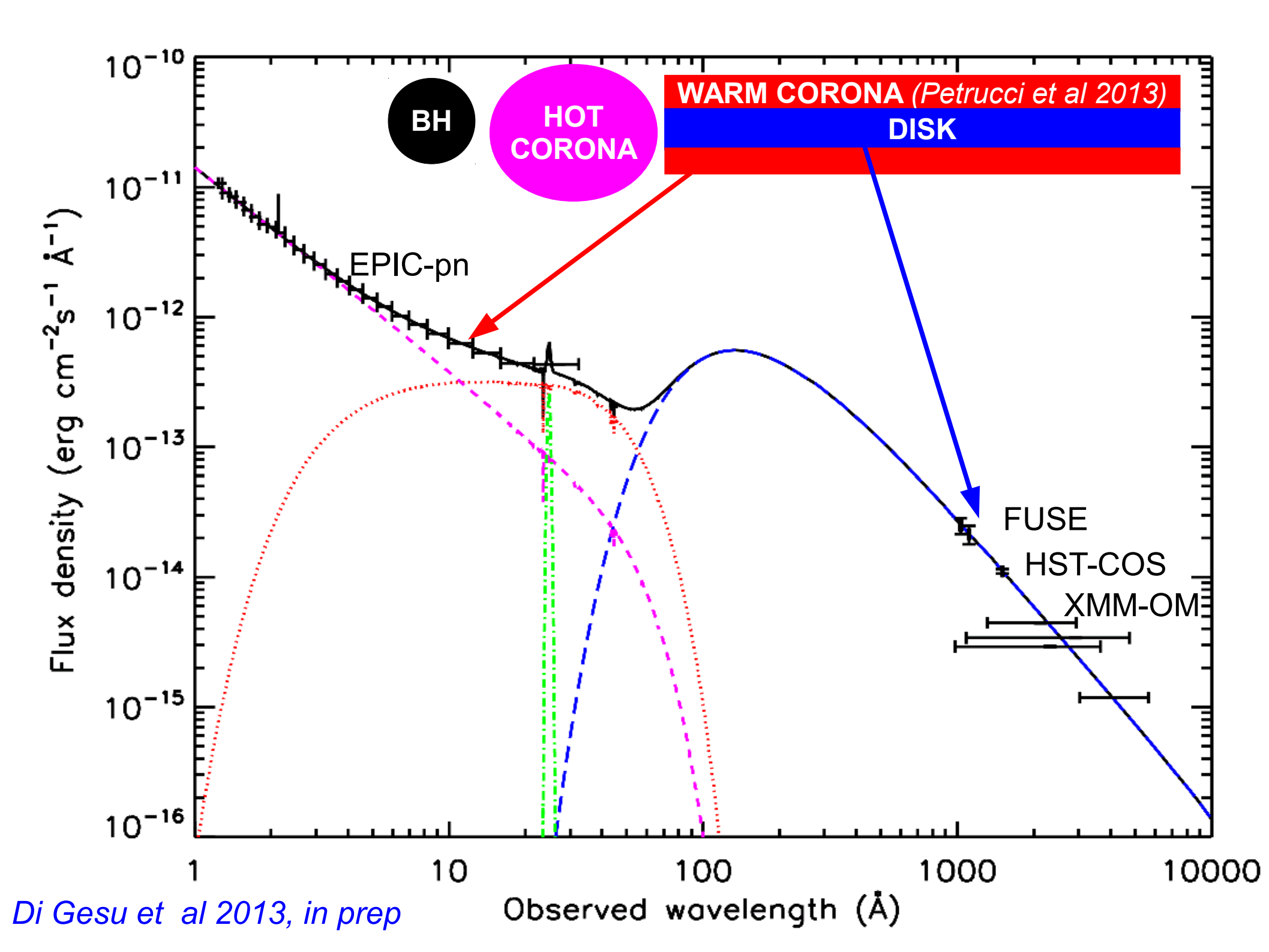

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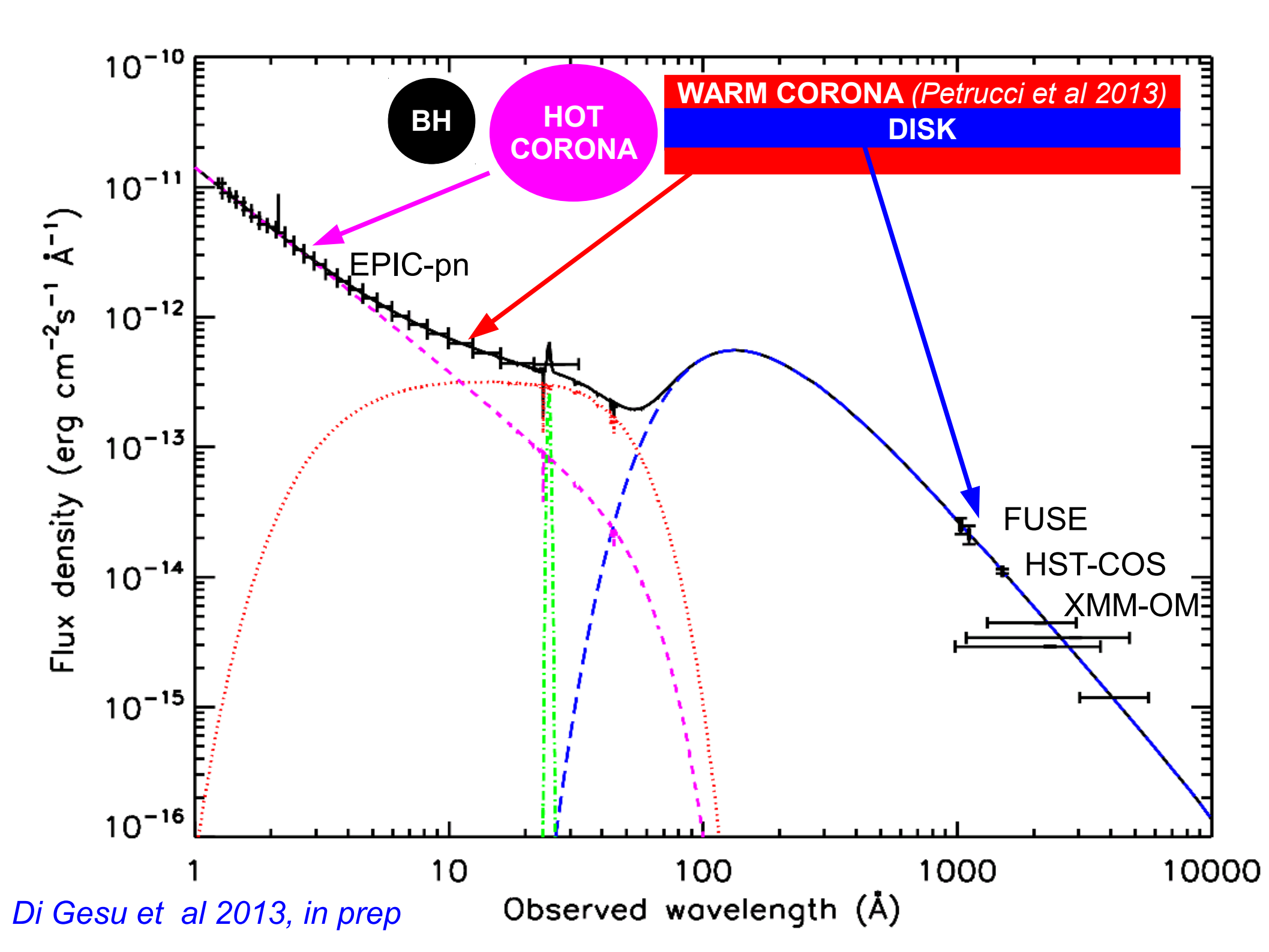
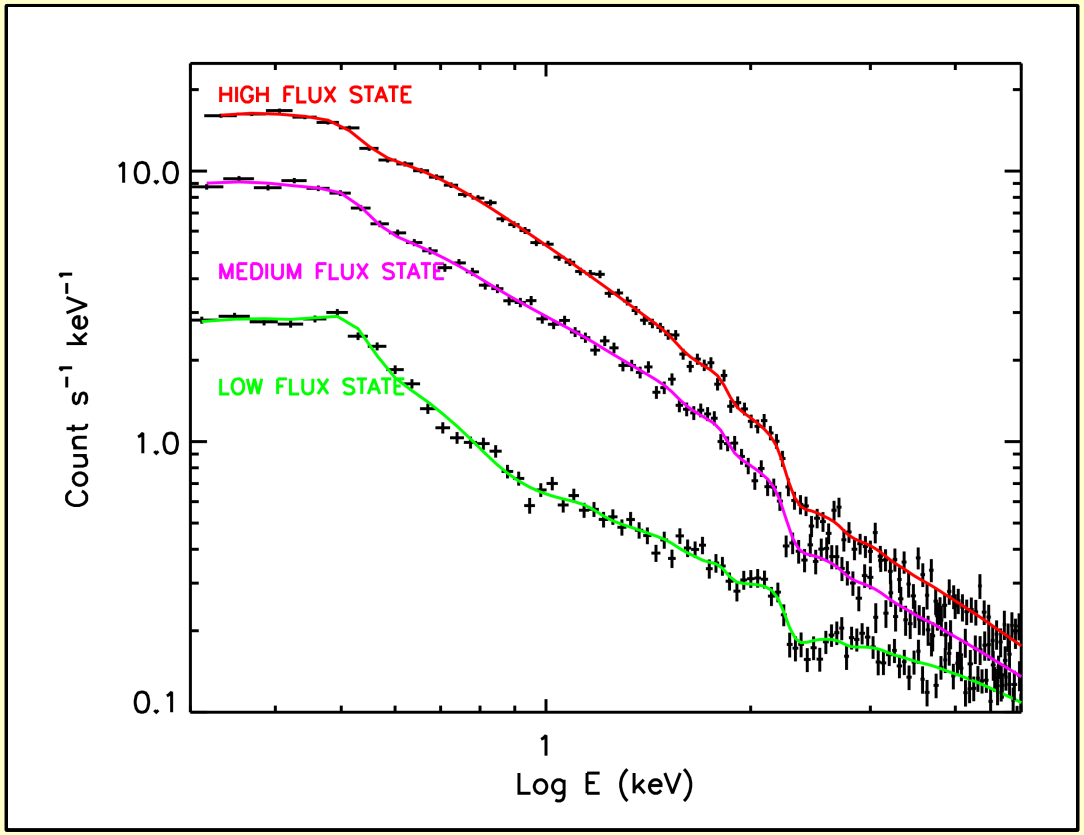


Di Gesu et al 2013, in prep

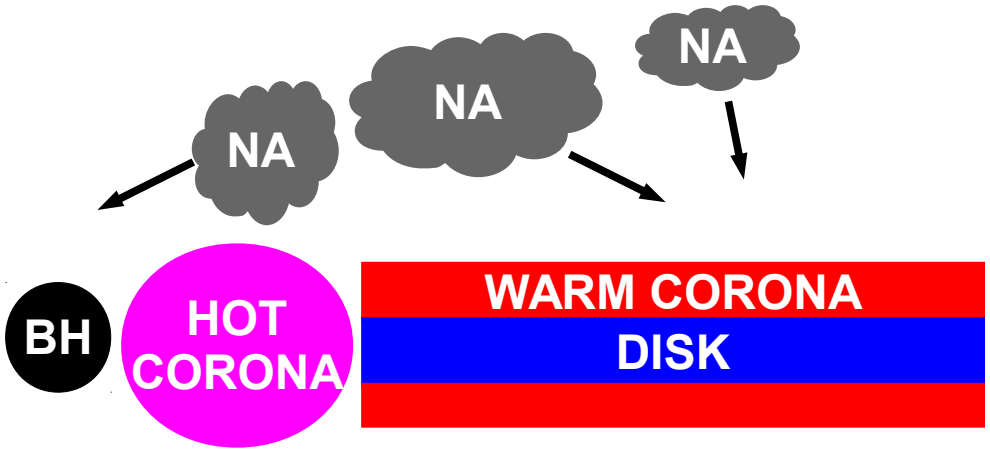
Fitting the variability:



HIGH STATE: Log$N_H \leq 20$ cm^2

MED STATE: Log$N_H \approx 22.0$; $C_V \approx 49\%$

LOW STATE: Log$N_H \approx 22.3$ $C_V \approx 94$



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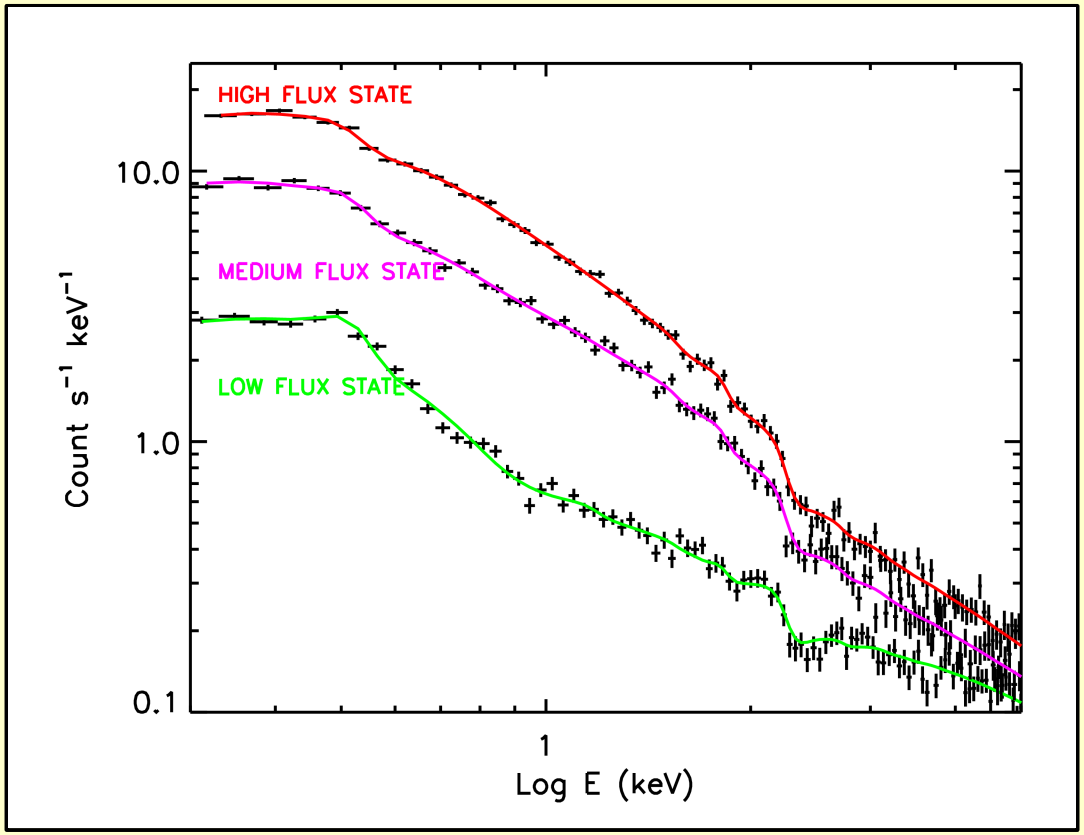

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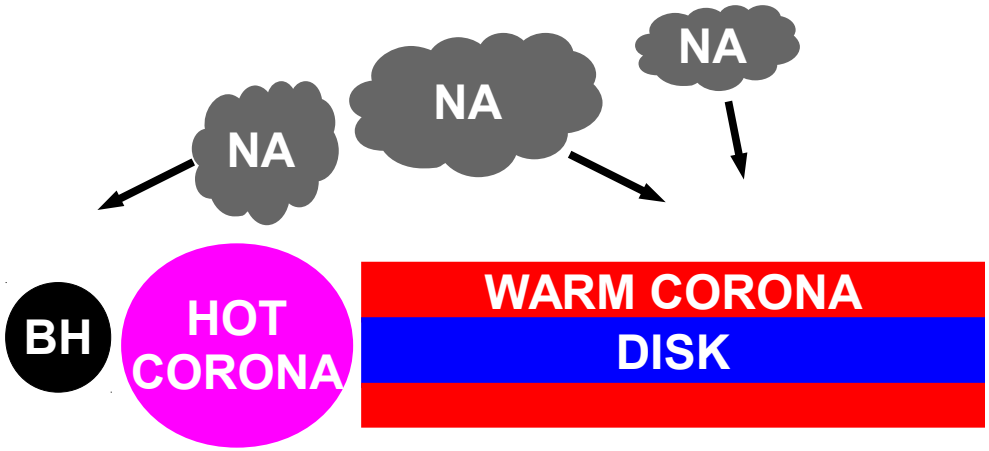
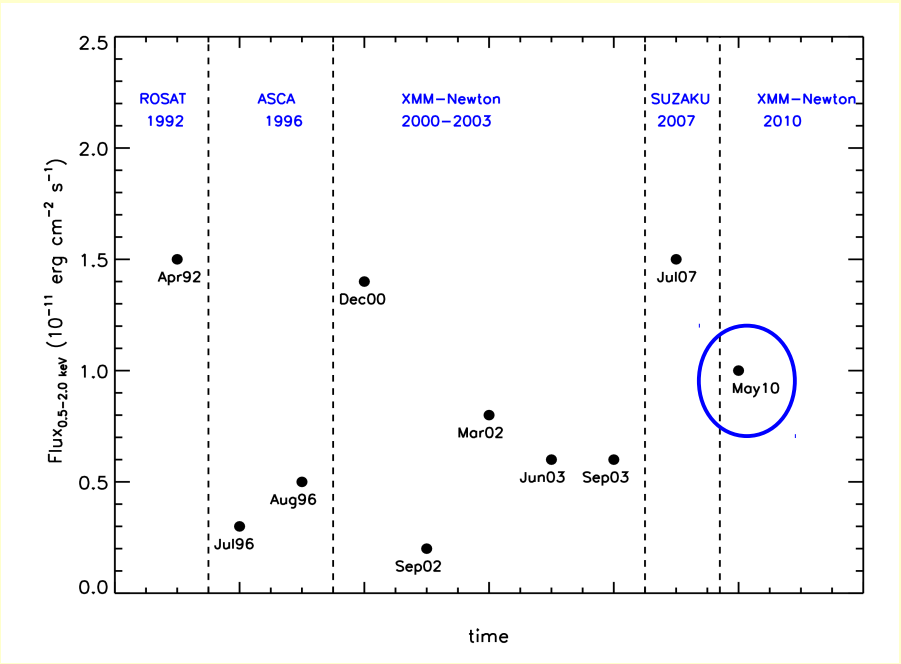


➔The obscuration explains almost all the variability.

An X-ray UV campaign



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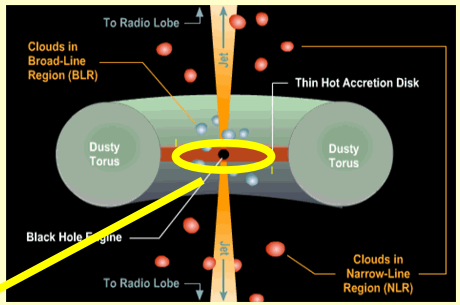

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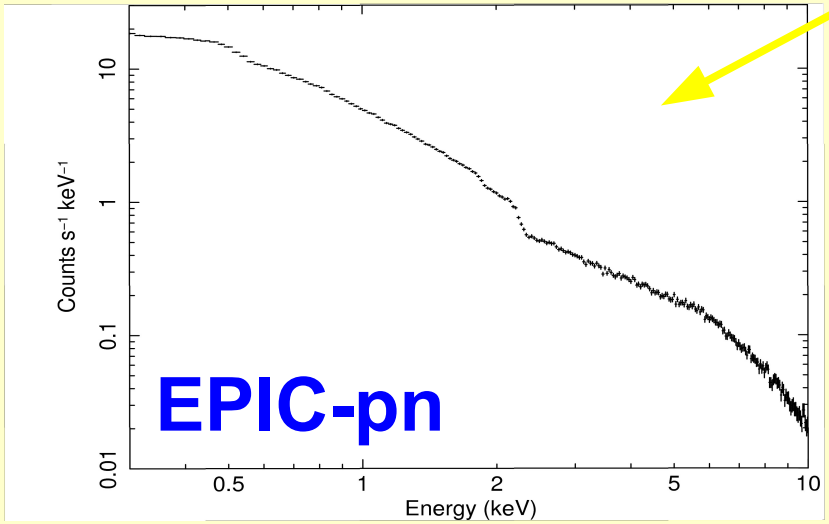

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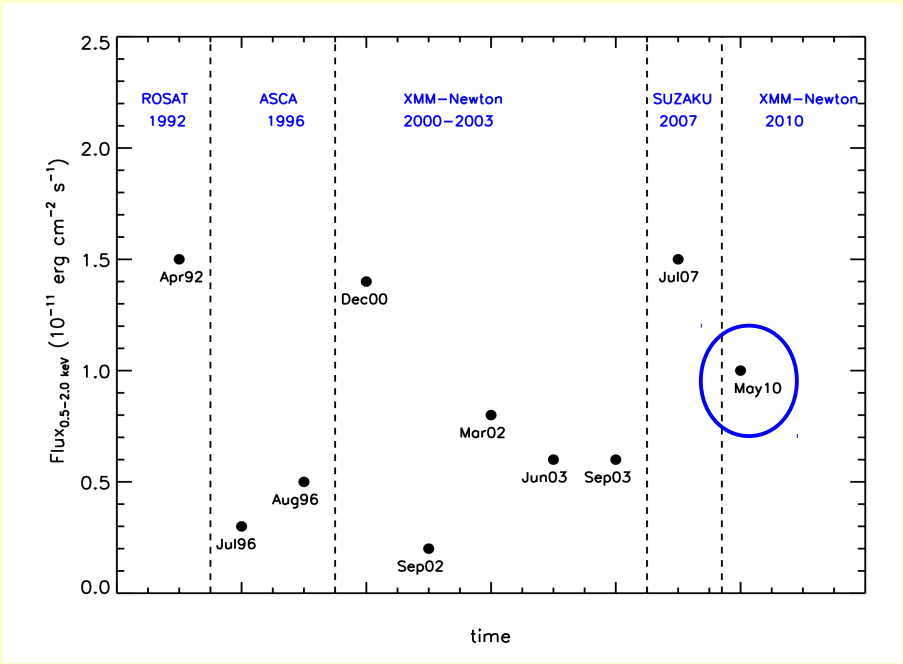

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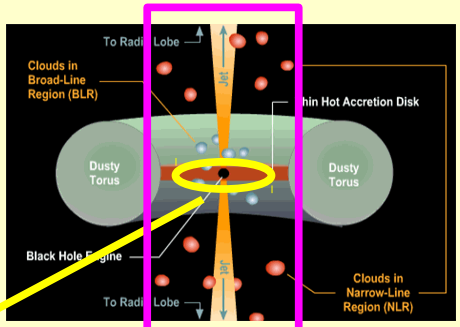
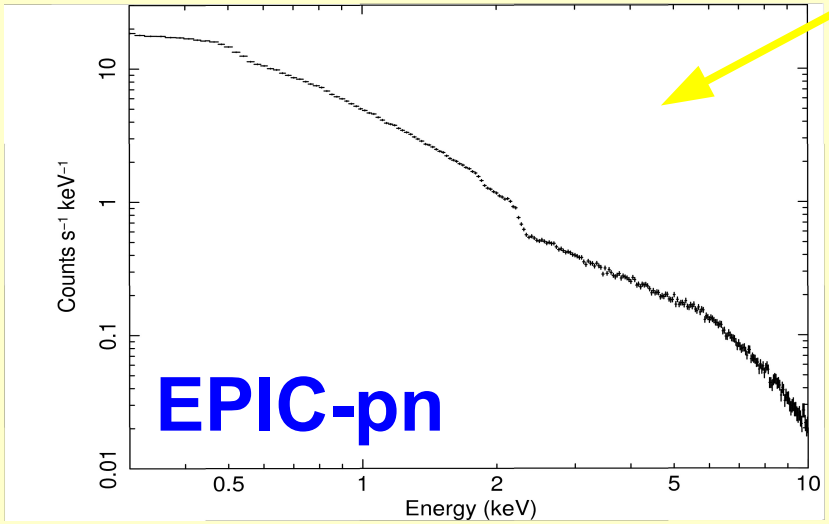
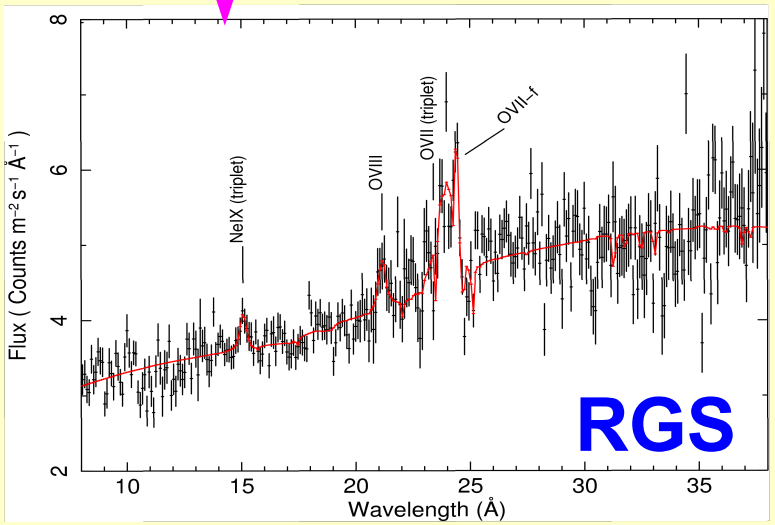
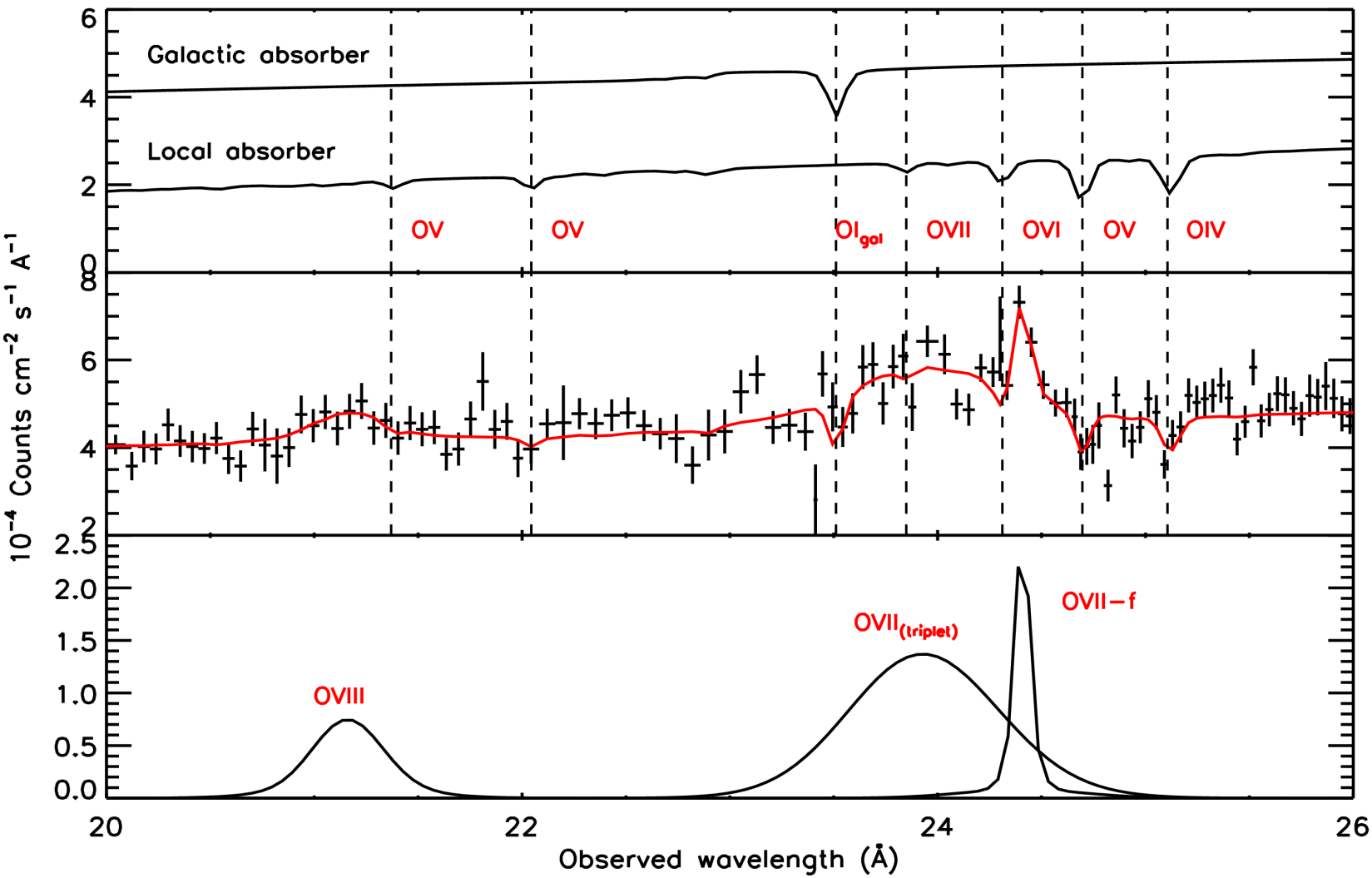




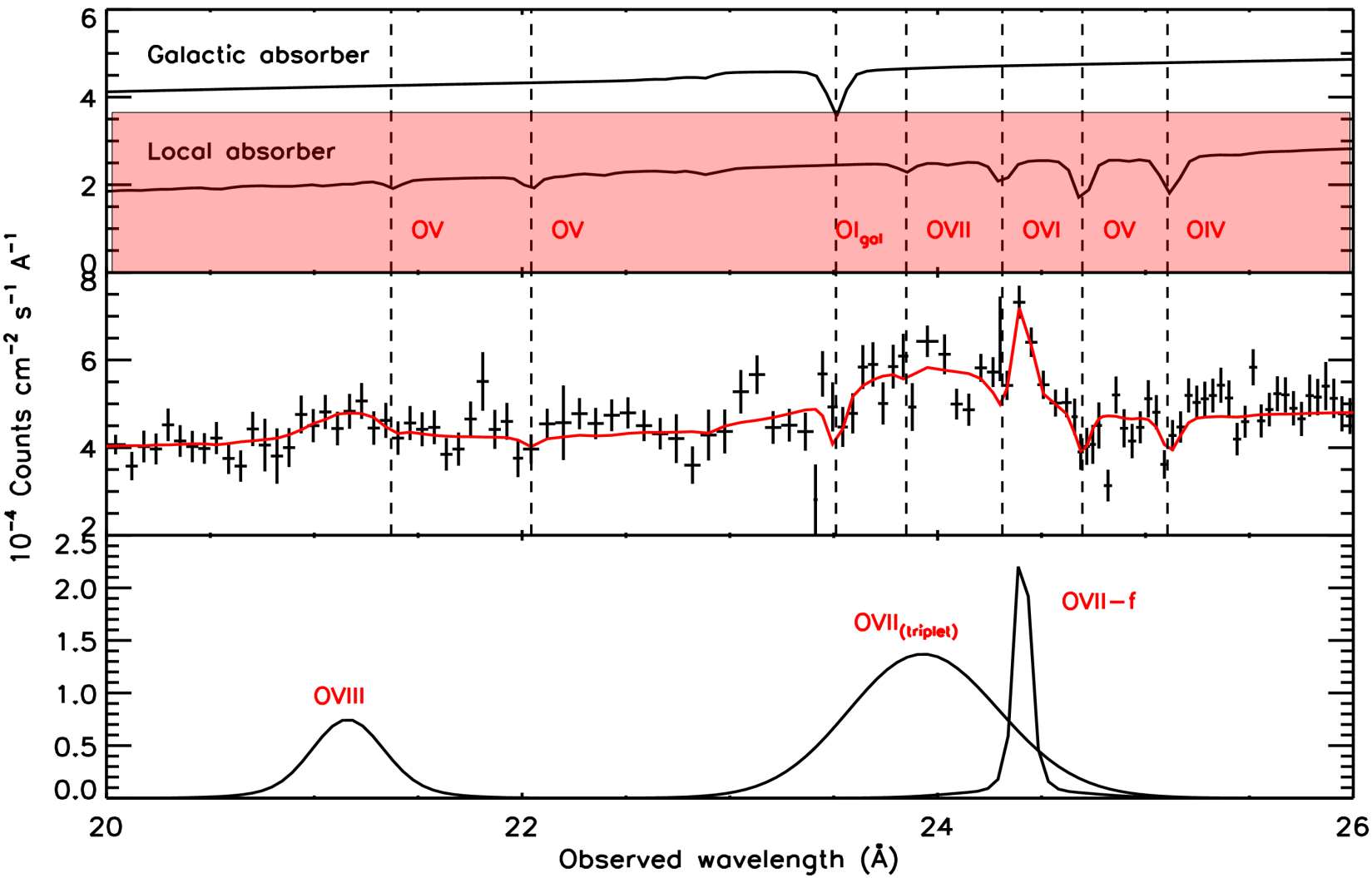


The RGS spectrum



Di Gesu et al 2013, submitted to A&A

The RGS spectrum



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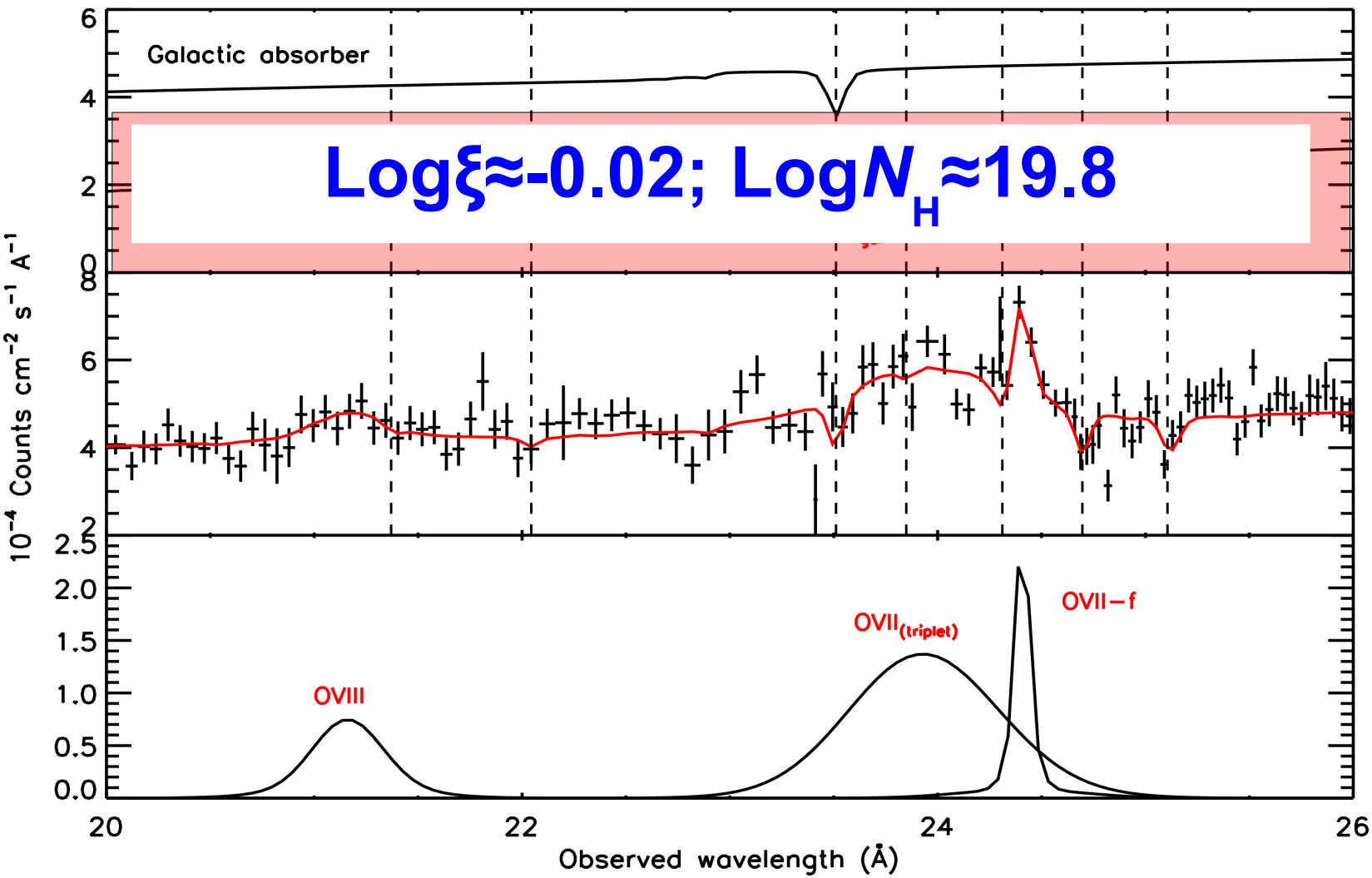

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The absorbing system

X-rays

$n_H < 25\ cm^{-3}$

Log $N_H \approx 19.8$

Log $\xi \approx -0.02$

220 km s^{-1}

$$d \geq \sqrt{\frac{L_{ion}}{n_H \xi}} \approx 4\,kpc$$

UV

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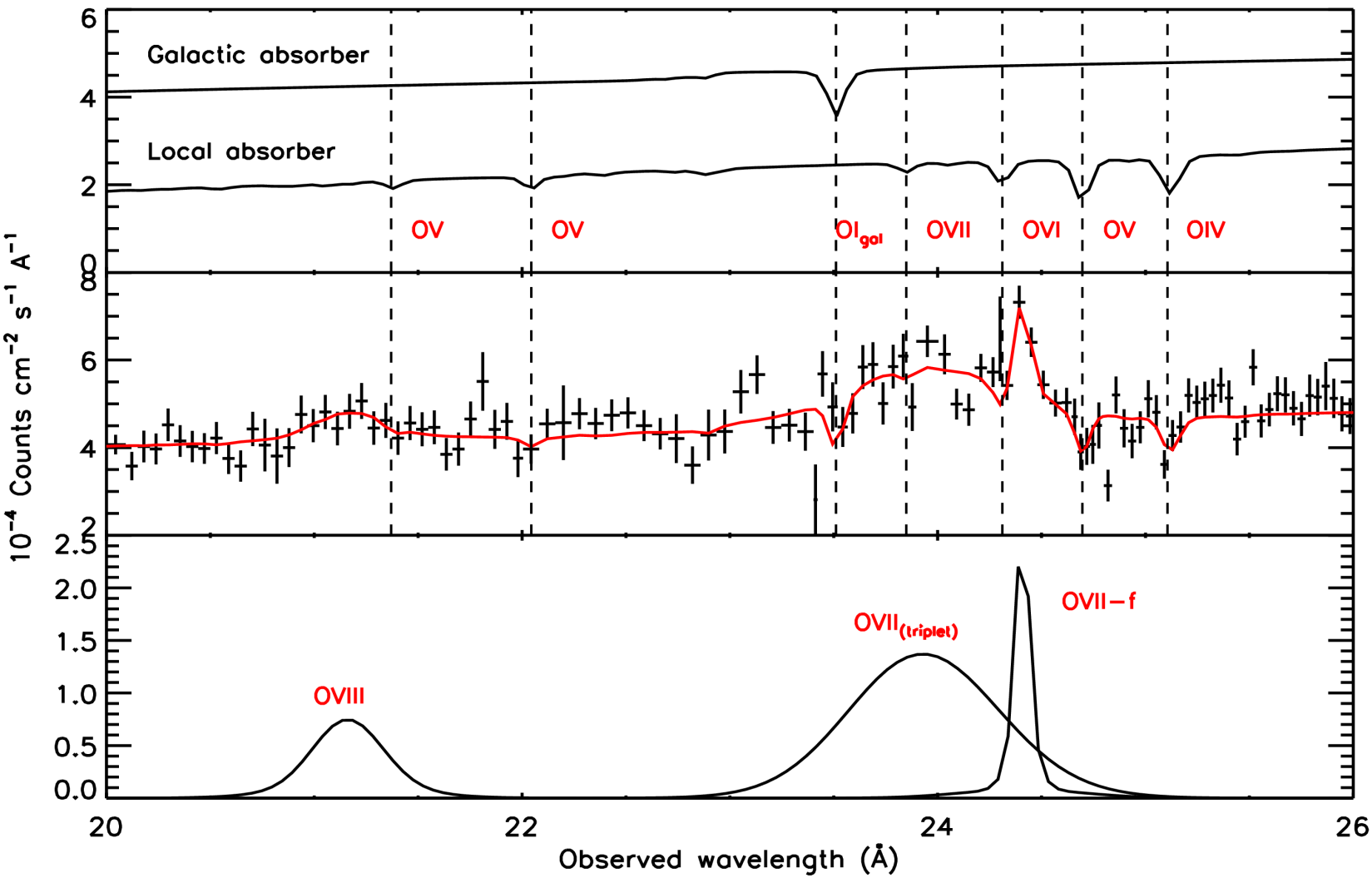
UV

→First example of a galactic scale X-ray absorber.

The RGS spectrum



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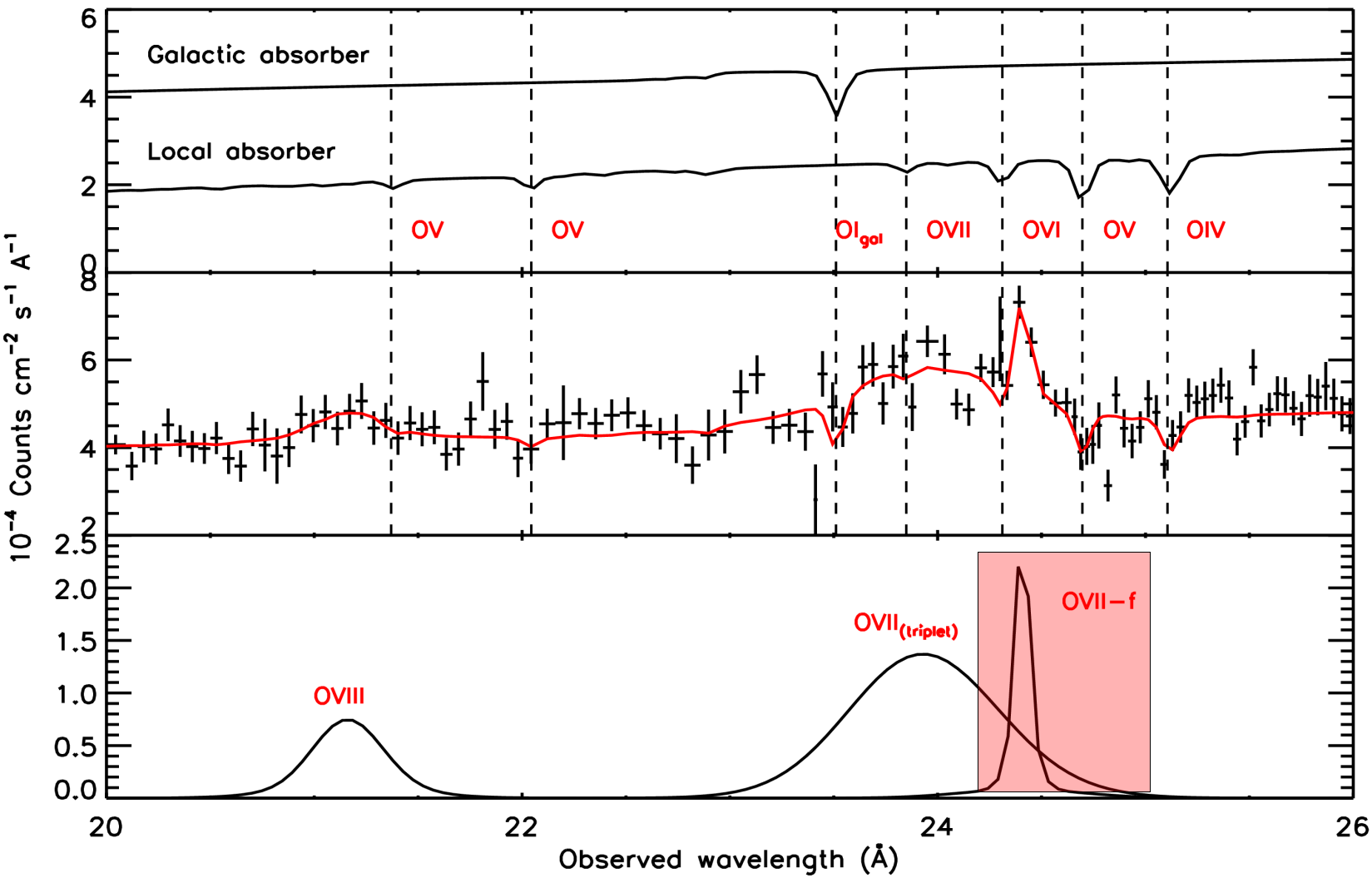

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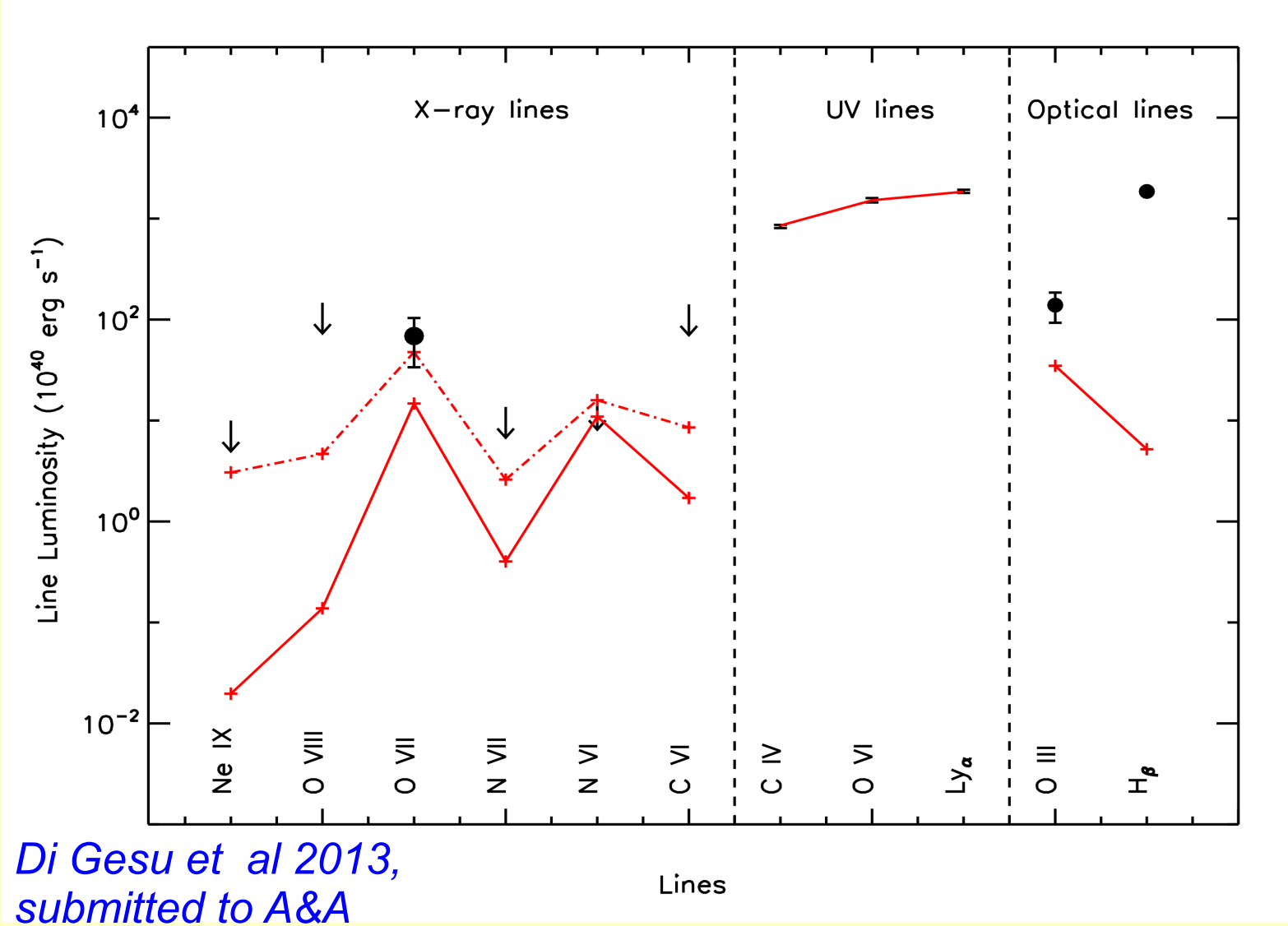
The NL emitting system



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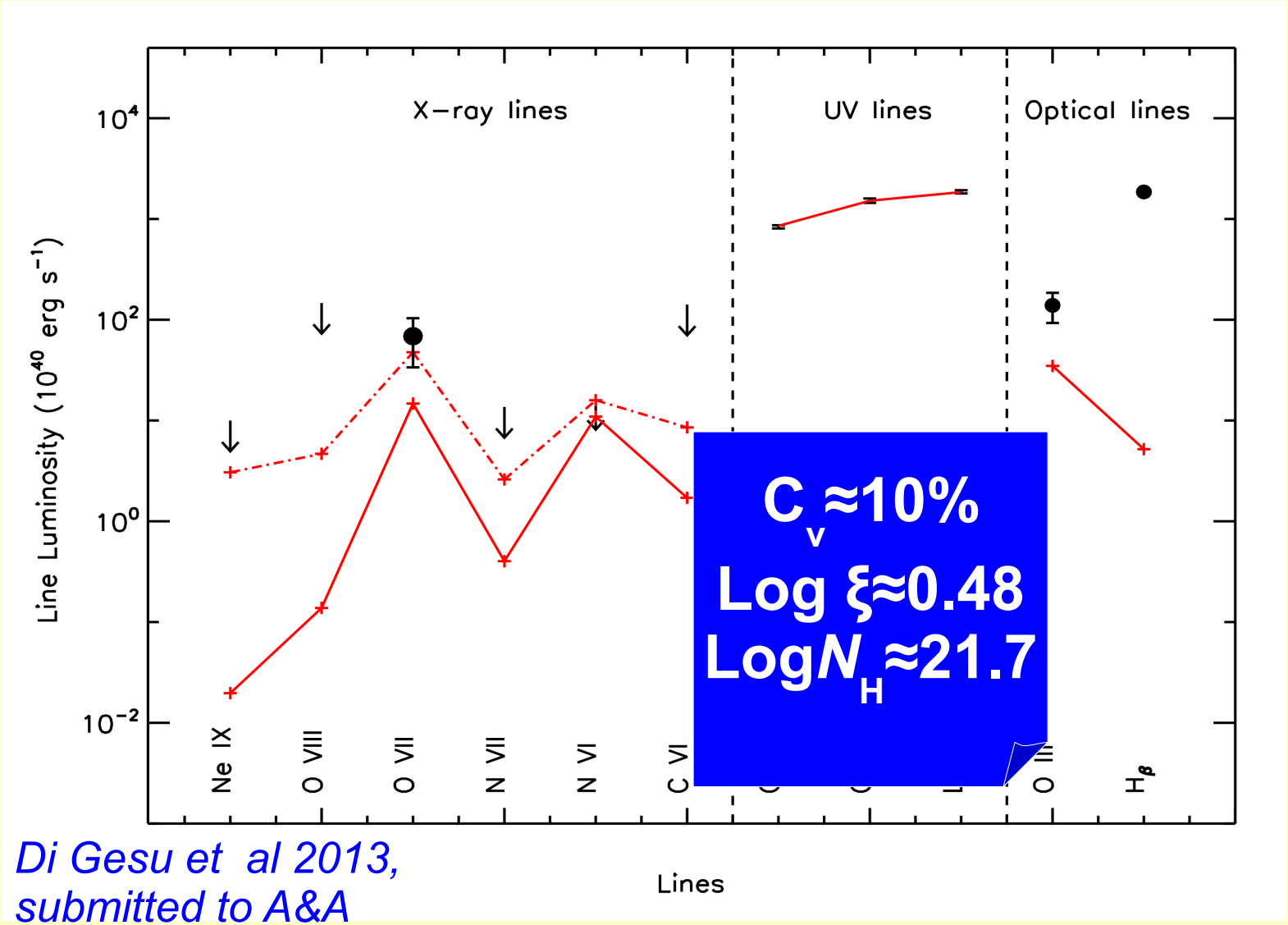
The NL emitting system



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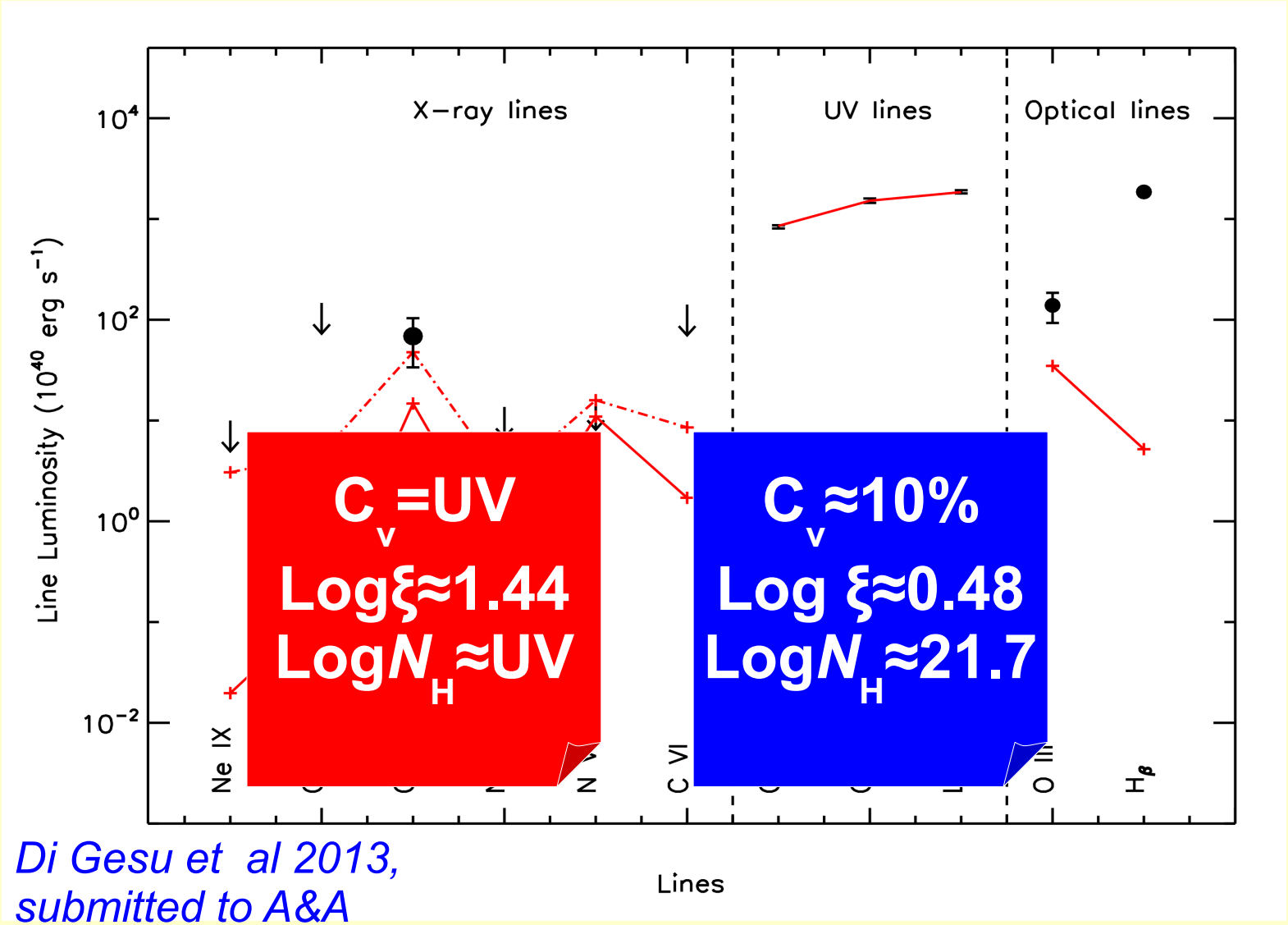
The NL emitting system



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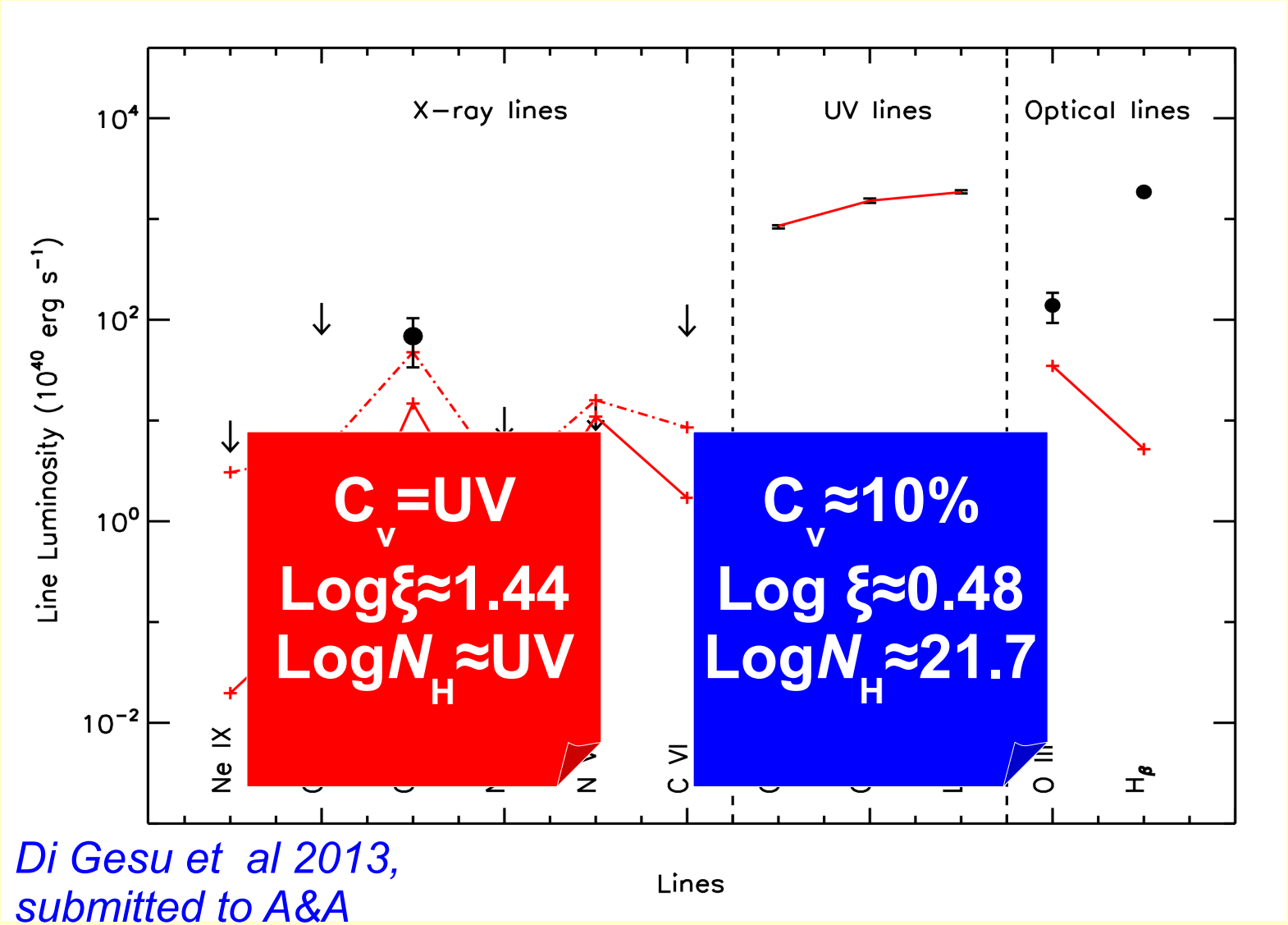
The NL emitting system



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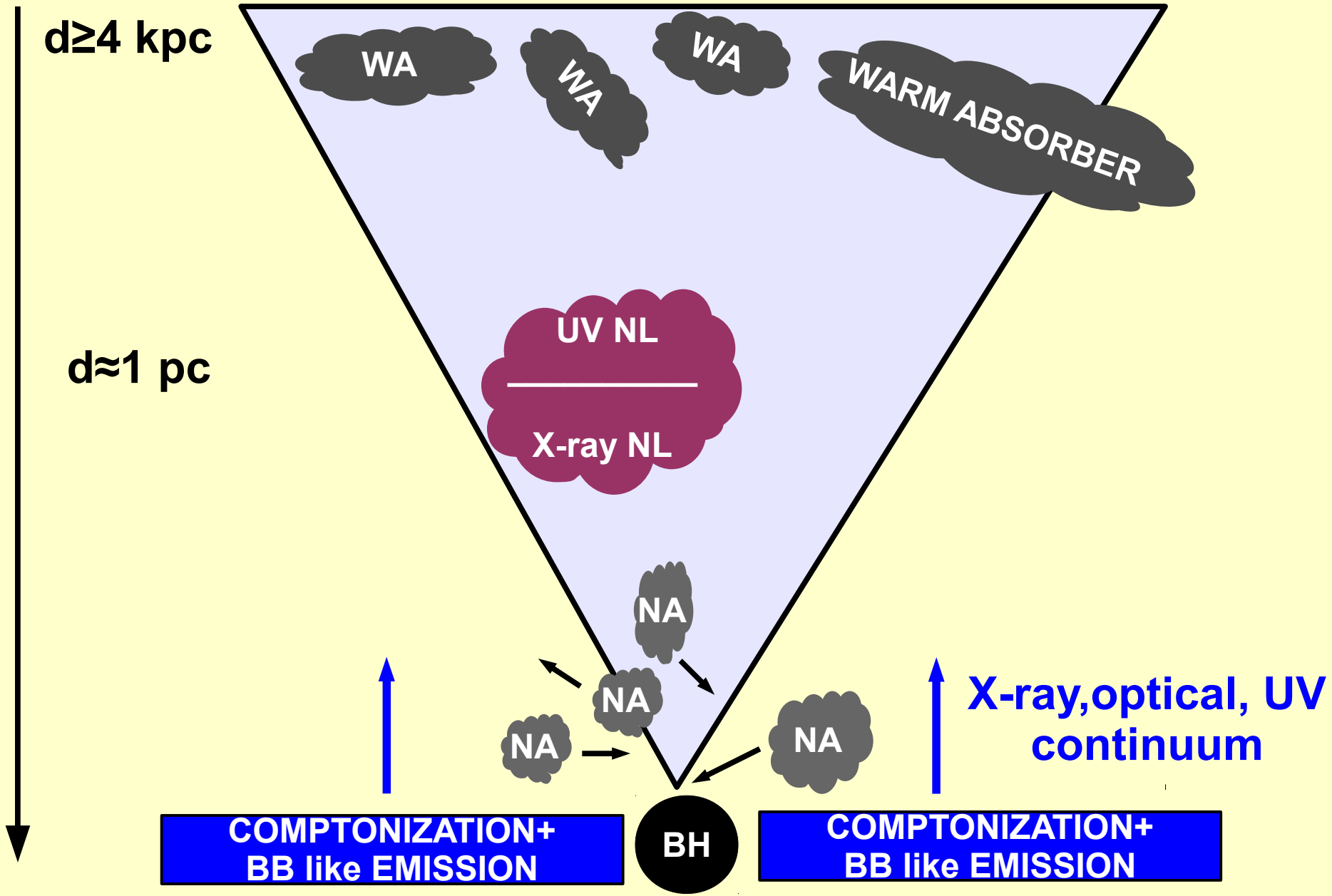
➔**UV and X-ray emitters are adjacent layers of the gas.**

A global picture



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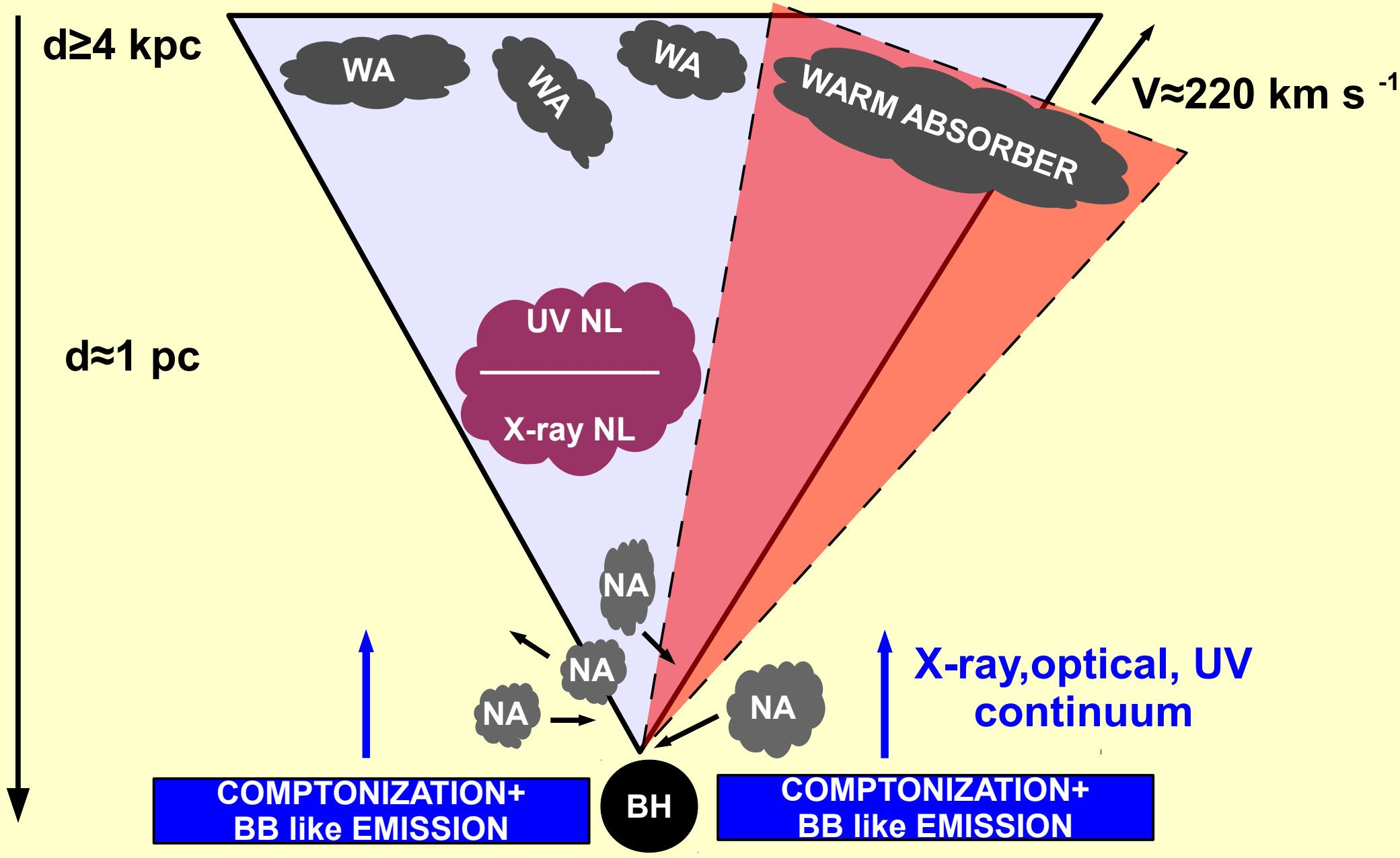

Summary

- **Present and past X-ray observation are well fitted by Comptonization plus neutral obscuration.**

- **Line emitting region stratified in ionization.**

- **Galactic scale outflow: first X-ray absorber detected so far away from the nucleus.**