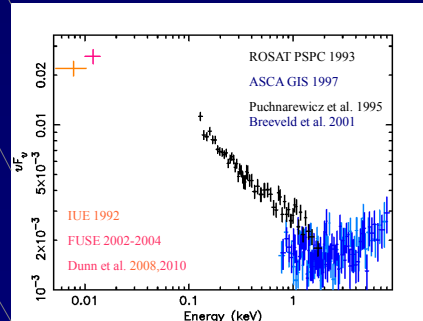
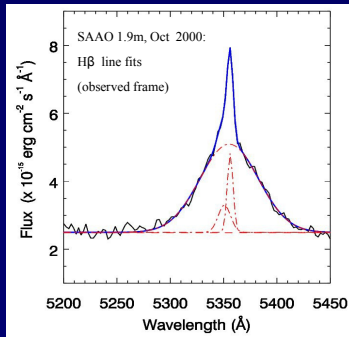


# The story of Seyfert galaxy RE J2248-511: from intriguingly ultrasoft to unremarkably average

*Rhaana Starling (Leicester), Chris Done, Chichuan Jin (Durham) et al.,  
2014, MNRAS 437, 3929*

For further information contact: rles1@le.ac.uk

This nearby ( $z \sim 0.1$ ) AGN has a high mass,  $\sim 10^8 M_{\text{Sun}}$ , and broad optical emission lines,  $\text{FWHM} > 3600$  km/s,  
*like Seyfert 1s...*

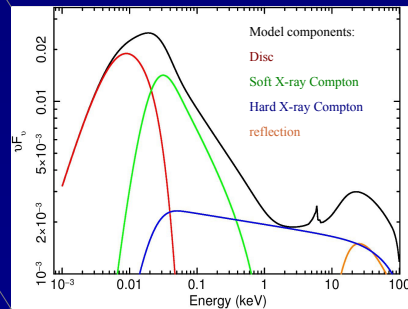
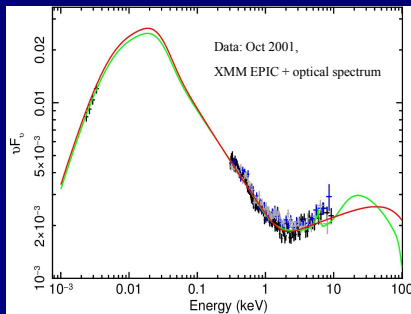


It also has a very steep and variable soft X-ray excess,  
*like Narrow-line Seyfert 1s..*

## How should we classify it?

We obtained four further epochs of data, now ensuring simultaneous X-ray and optical observations, spanning seven years and using *XMM-Newton*, *Swift*, SAAO 1.9m and the Danish Telescope.

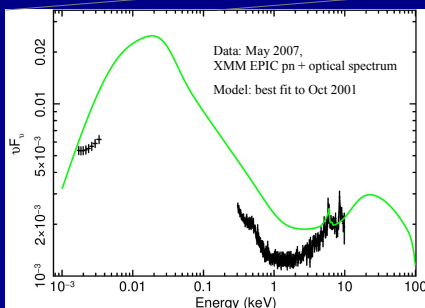
The brightest epoch is well described by the physical model *optxagnf* of Done et al. (2012) ...



...with "typical" parameters for  $10^8 M_{\text{Sun}}$  broad-line AGN (Jin et al. 2012).

$$L/L_{\text{Edd}} \sim 0.2$$

Other epochs show a flux deficit.



This can be explained by the same underlying continuum, plus a major absorption event.

**Conclusion:** RE J2248-511 is an average broad-lined Seyfert 1 galaxy, which appears variable due to transient absorption events.

*Why was this AGN EUV-selected and termed ultrasoft?*

We find no measurable intrinsic X-ray column, and it is seen through a Galactic absorption 'hole'. This low column line-of-sight has given us a unique EUV to soft X-ray view of an otherwise unremarkable BLS1.