

# Spectral study of an dd Seyfert 1: H0557-385

## **Goals:**

- 1) study the absorption characteristics during the low state;
- 2) study the Fe complex during the low state (estimate the size of the production region);
- 3) optional: do the same during the high state.

# Low state

- 1a) Extract a spectrum of the source, and fit the overall X-ray ( $E=0.3-10$ . keV) continuum.
- 1b) Using a simple power-law model, try to identify the major spectral features
- 1c) Model the cut-off at  $E \approx 5$  keV using partial covering models
- 1d) Model the residuals below  $\approx 3$  keV using warm components
- 1e) Estimate the distance (in units of gravitational radii) of the lines production regions from the central black hole (suggestion: use Virial theorem and assume the lines are Doppler broadened)

# Optional: high state.....

1a) Extract a spectrum of the source, and fit the overall X-ray ( $E=0.3-10$ . keV) continuum?

1b) Using a simple power-law model, try to identify the major spectral features?

1c) Model the cut-off at  $E \approx 5$  keV using partial covering models?

1d) Model the residuals below  $\approx 3$  keV using warm components?

1e) Estimate the distance (in units of gravitational radii) of the lines production regions from the central black hole (suggestion: use Virial theorem and assume the lines are Doppler broadened)?

# H0557-385

## References:

Longinotti et al. 2009 (<http://arxiv.org/abs/0810.0918>)

Ashton et al. 2005 (<http://arxiv.org/abs/0810.0918>)

Quadrelli et al. 2003 (<http://arxiv.org/abs/astro-ph/0310248>)

## Source INFOs:

Classification: Seyfert 1.2

Z=0.03387

M=2.2x10<sup>7</sup> M<sub>⊙</sub>