X-ray spectral properties of NLS1s in the 6dFGS

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Outline

>Introduction

Sample selection

Conclusion

Introduction

Narrow-line Seyfert 1 galaxies (NLS1s)

X-ray spectrum

Simple NLS1s (S-NLS1s) 2-10 keV spectra do not strongly deviate from a single power-law continuum

Complex NLS1s (C-NLS1s)
Strong spectral variability
Evident features around Fe K-shell at 6-8 keV

Introduction

➢What is the difference between S-NLS1s and C-NLS1s?

Flux state? (Gallo 2006)

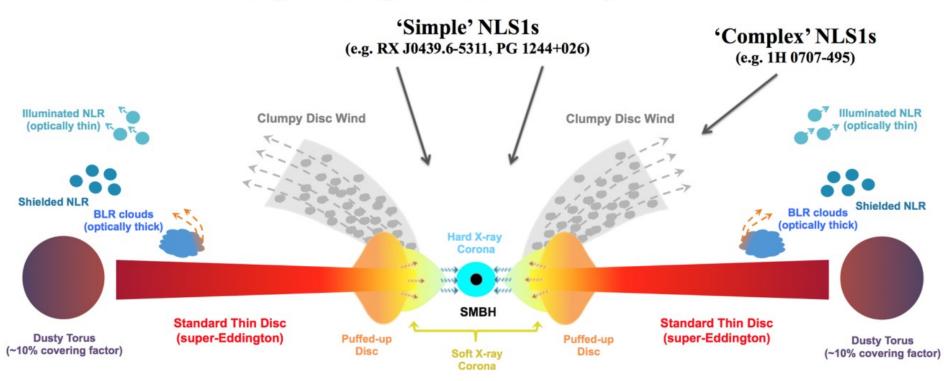
S-NLS1s are in a normal X-ray flux state.
 C-NLS1s are in a low X-ray flux state.

Introduction

➢What is the difference between S-NLS1s and C-NLS1s?

Inclination? (Jin et al. 2017)

Super-Eddington Narrow-Line Seyfert 1s



Sample selection

NLS1s in the southern hermisphere (Chen et al. 2018)

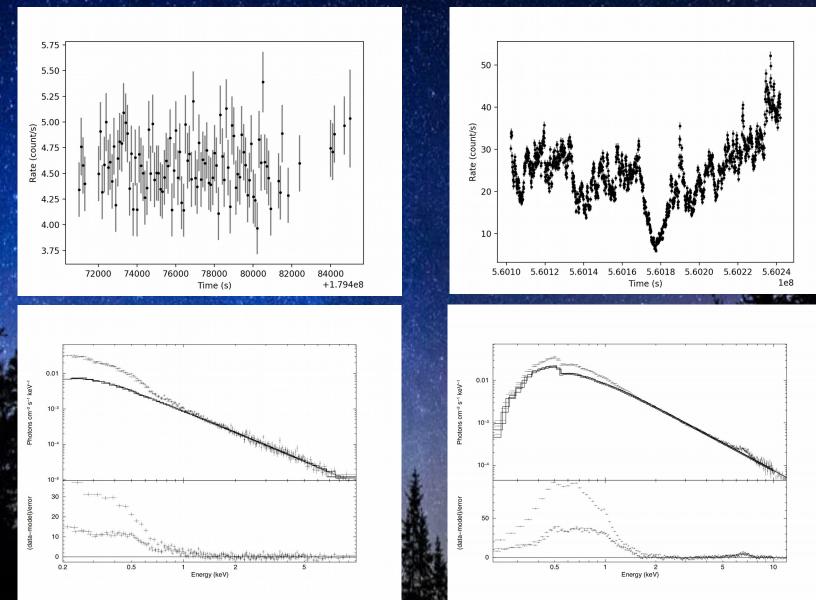
Cross-matching with XMM-Newton within 10 arcmins
Flux (0.2-12.0 keV) > 10⁻¹² erg s⁻¹ cm⁻²

11 NLS1s
5 S-NLS1s + 6 C-NLS1s

Sample selection

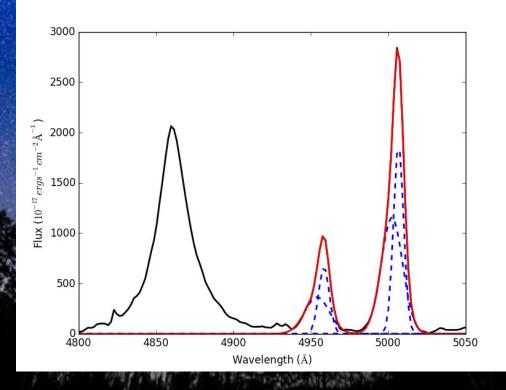
S-NLS1

C-NLS1



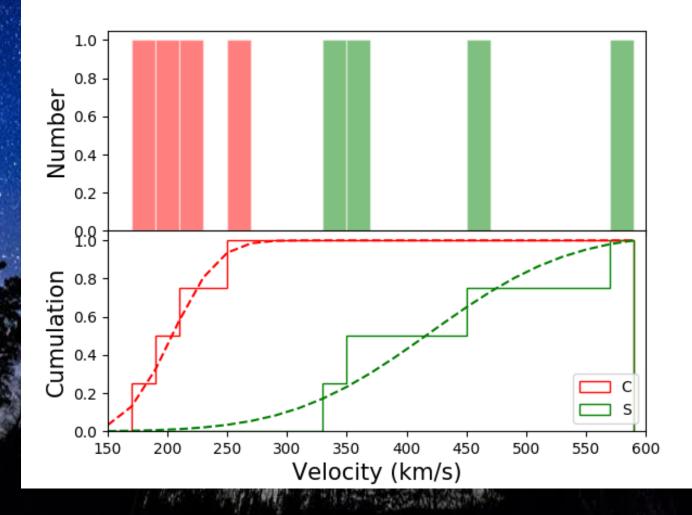
Sample selection

Optical spectroscopic observation
 Fit [O III] lines with 2 Gaussians
 The broad components are blueshifted compared to the narrow components



Conclusion

The distribution of relatively blueshift velocity



Conclusion

The wind is commonly launched from the accretion disk in NLS1s.
 The difference between S-NLS1s and C-NLS1s might be due to different inclination.

C-NLS1s are viewed at a large angle where the wind is weak. The X-ray spectral complexity and variability might be due to the ionization material and cool clumps in the wind.
 S-NLS1s are viewed at a small angle where the wind is strong. The ionization material and cool clumps might be blown away by the wind, thus resulting in the X-ray spectral simplicity.

Thank you for your attention!