Searching narrow-line Seyfert 1 galaxies in southern hemisphere

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Optical spectrum of narrow-line Seyfert 1 galaxy

HS 1747+6837B



The aim of my project

Create a new sample of narrow-line Seyfert 1 galaxies.

Improve the statistics of known sources and investigate their physical properties.

6dF Galaxy Survey



Searching NLS1s From 6dFGS

The 6dF Galaxy Redshift Survey collected 136304 spectra of variously classified sources.

Features: $600 \text{ km/s} < \text{FWHM}(\text{H}\beta) < 2200 \text{ km/s}$ 200 km/s < FWHM([O III]) < 1000 km/sFlux ratio [O III] λ 5007 / H β < 3 Strong Fe II multiplets





Redshift distribution for 171 NLS1 candidates



Optical spectra flux calibration

- Find some objects both on 6dF and SDSS.
- $\frac{6 dF(counts)}{SDSS(flux)}$ ratio curve (counts/flux)
- Combine all the ratio curves and calculate their average value to obtain a sensitivity curve (counts/flux).

• $\frac{6 dF(counts)}{sensitivity(counts/flux)}$ • 6dF (flux)

Relation between Mean flux at 5100 and Magnitude at B band



Summary

My work:

- Select 171 NLS1 candidates from 6dFGS
- \succ Flux calibrate the optical spectra in the sample

Further study:

- Solution Classify radio and γ -ray sources in the sample, find their radio and γ -ray counterparts, and reobserve them.
- Calculate the central black hole mass and Eddington rate.

Thank you for your attention!