

Multi-wavelength properties of nearby AGN

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Introduction

- What are AGN?
- Previous work
- The surveys
- Areas of overlap
- Preliminary results
- Future work
- Problems

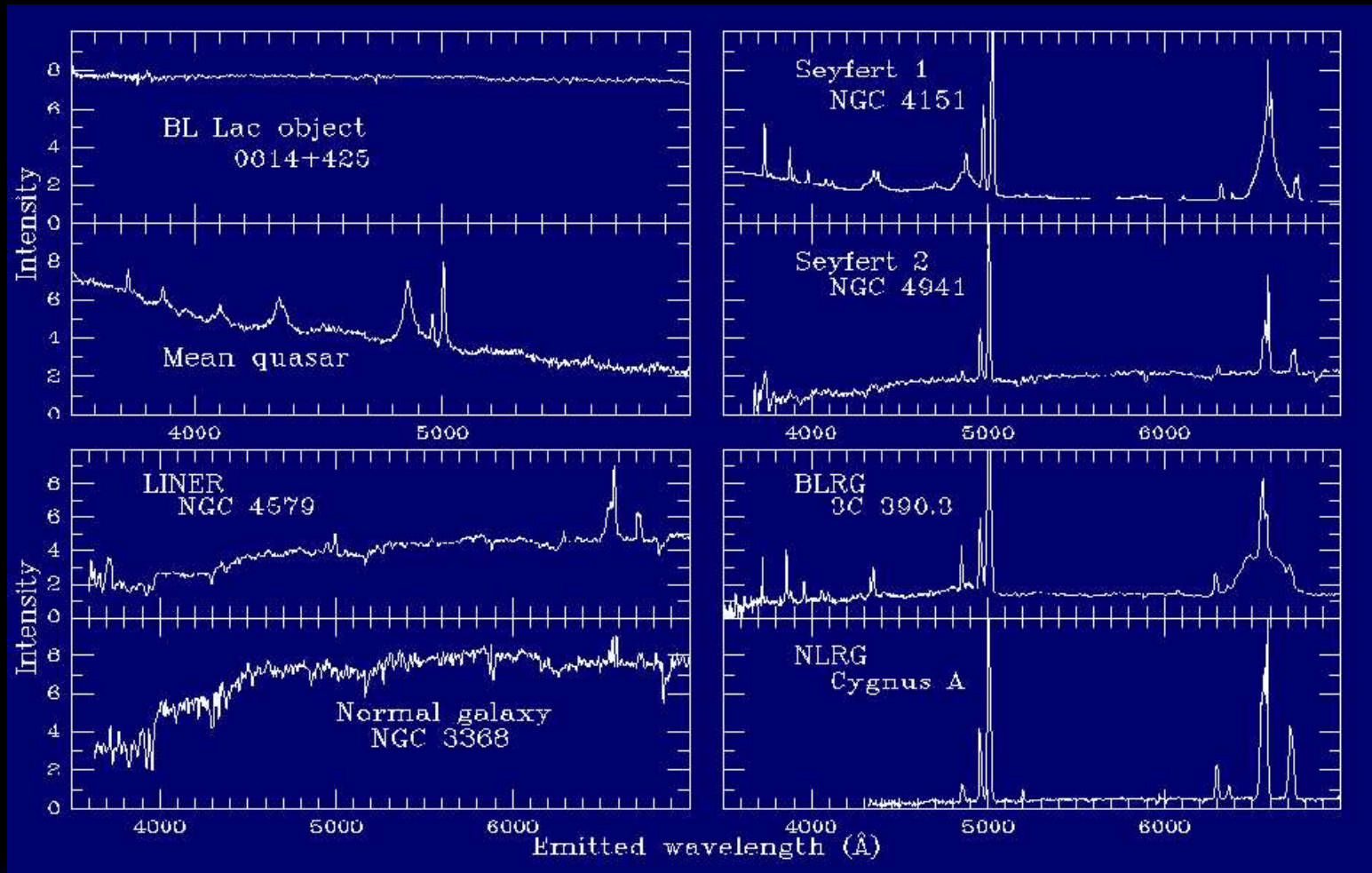
Previous work

- Obric et. al.
 - Properties of SSDS DR1 in ~8 other surveys
 - Only galaxies in general.
- Siebert et. al.
 - GALEX preliminary data vs. SSDS DR2
 - Stars and galaxies: general

AGN: Active Galactic Nuclei

- Nuclear emission \geq light from stars
- Powered by central black hole
- Broad emission line spectra
- Strong, broad line emission spectra
- ~15-20% of all galaxies

Distinguishing AGN



W. Keel, University of Alabama

Wide area surveys

SDSS Sloan Digital Sky Survey: optical

GALEX GALaxy Evolution eXplorer: UV

Spitzer/SIRTIF Spitzer Space Telescope: IR

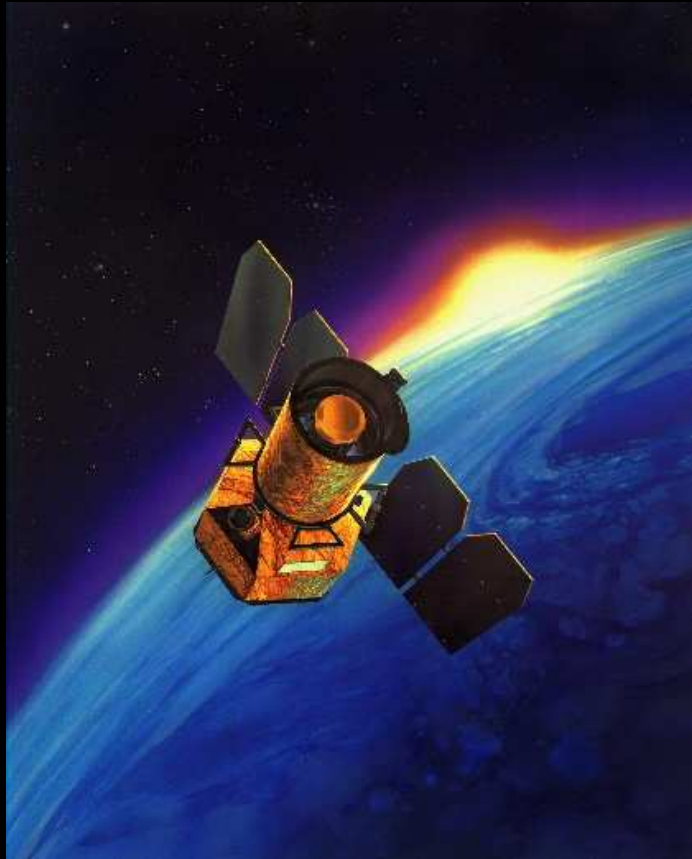
VLA/FIRST Faint Images of the Radio Sky at
Twenty-one centimeters

SDSS: Sloan Digital Sky Survey



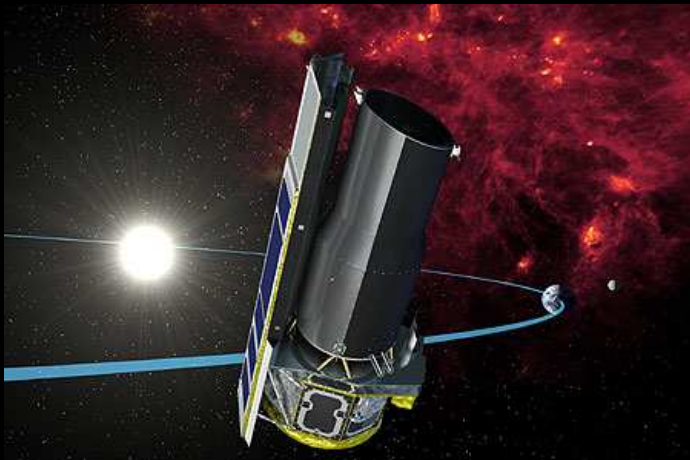
- Wavebands
 - u: 355.1nm
 - g: 468.6nm
 - i: 616.5nm
 - r: 748.1nm
 - z: 893.1nm
- Field of view: $\sim 2.5^\circ$
- Resolution: 0.4"
- Drexel is a partner

GALEX



- GALaxy Evolution eXplorer
- Wavebands
 - Far UV: 135 - 175nm
 - Near UV: 175 - 280nm
- Field of view: 1.2°
- Resolution: 5"
- GR1 available now, GR2 in October

Spitzer



- The final “Great Observatory”
- Wavebands
 - Near to Far IR: 3 - 180 microns
- Field of view: $\sim 5.2'$
- Resolution: $\sim 1.2''$
- First release SWIRE data available

VLA/FIRST

- Faint Images of the Radio Sky at Twenty-one centimeters
- The Very Large Array, New Mexico
- Wavebands
 - 21cm Hydrogen transition
- Northern sky ++
- Resolution: 5"
- Survey complete: all data available

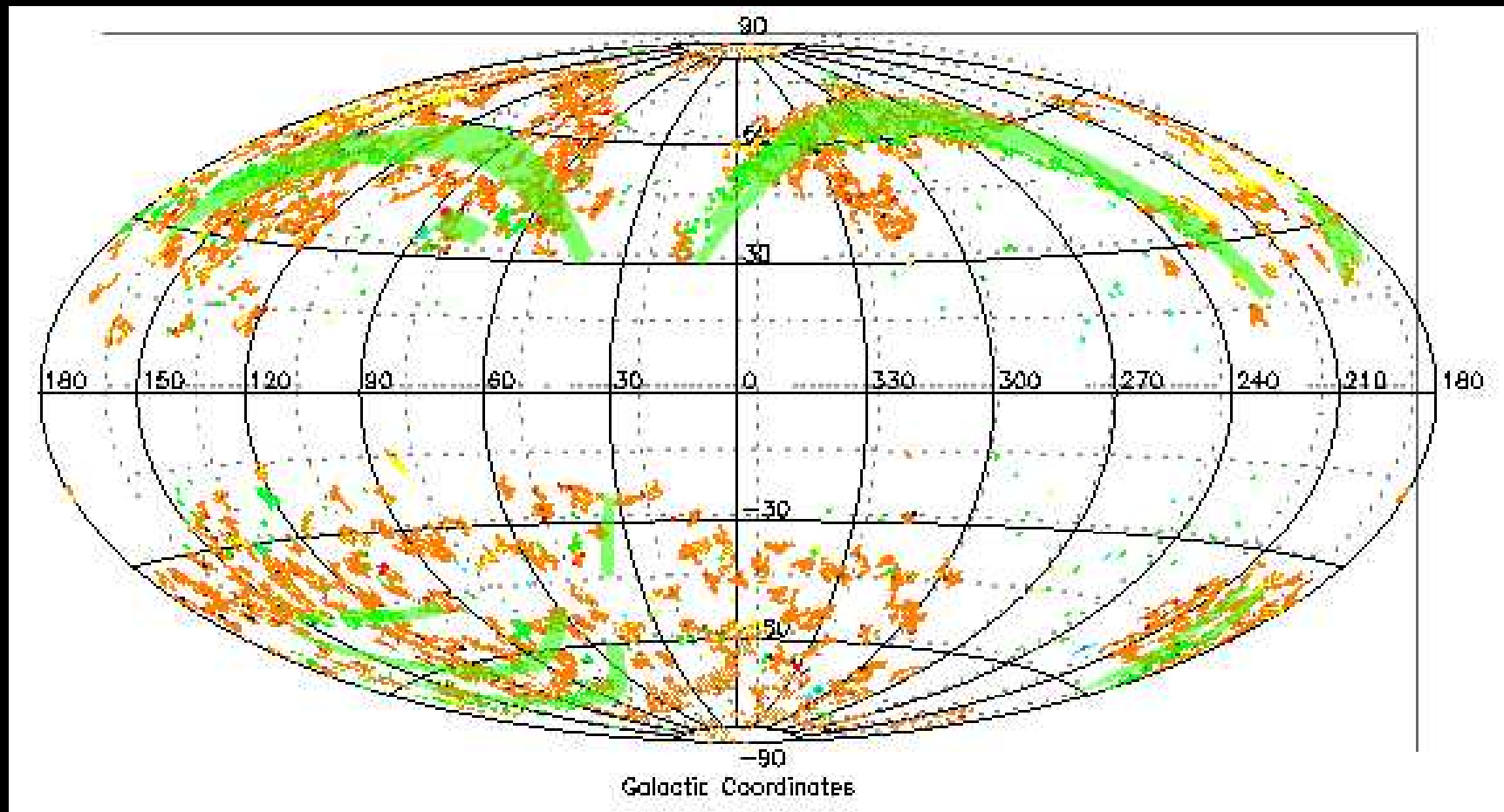
A few others

2MASS 2-Micron All Sky Survey: all data available, low sensitivity

XMM-Newton Small-field x-ray: some serendipitous sources

Swift Gamma-ray, all-sky survey in the works, first release 2006

Observational overlap



Results

- GALEX/SDSS galaxy overlap: 27733
- FIRST/SDSS galaxy overlap: 14103
- All three together: ~500

Problems?

- GALEX
 - New database/bad software
 - Equal search criterion = different results?
- Spitzer
 - No good large-area search tools
 - Their own optical images

Future work

- Combine with Anca's AGN list
- Add in Spitzer and/or 2MASS
- Look at spectral properties.
- Extend as more data becomes available

References/Thanks

- Dr. Michael Vogeley
- Dr. Anca Constantin
- B. Peterson, 1997, Active Galactic Nuclei
- Survey: 2005 M. Obric et. al., Mon. Not. R. Astron. Soc.
- GALEX: 2005 Siebert et. al., ApJ.