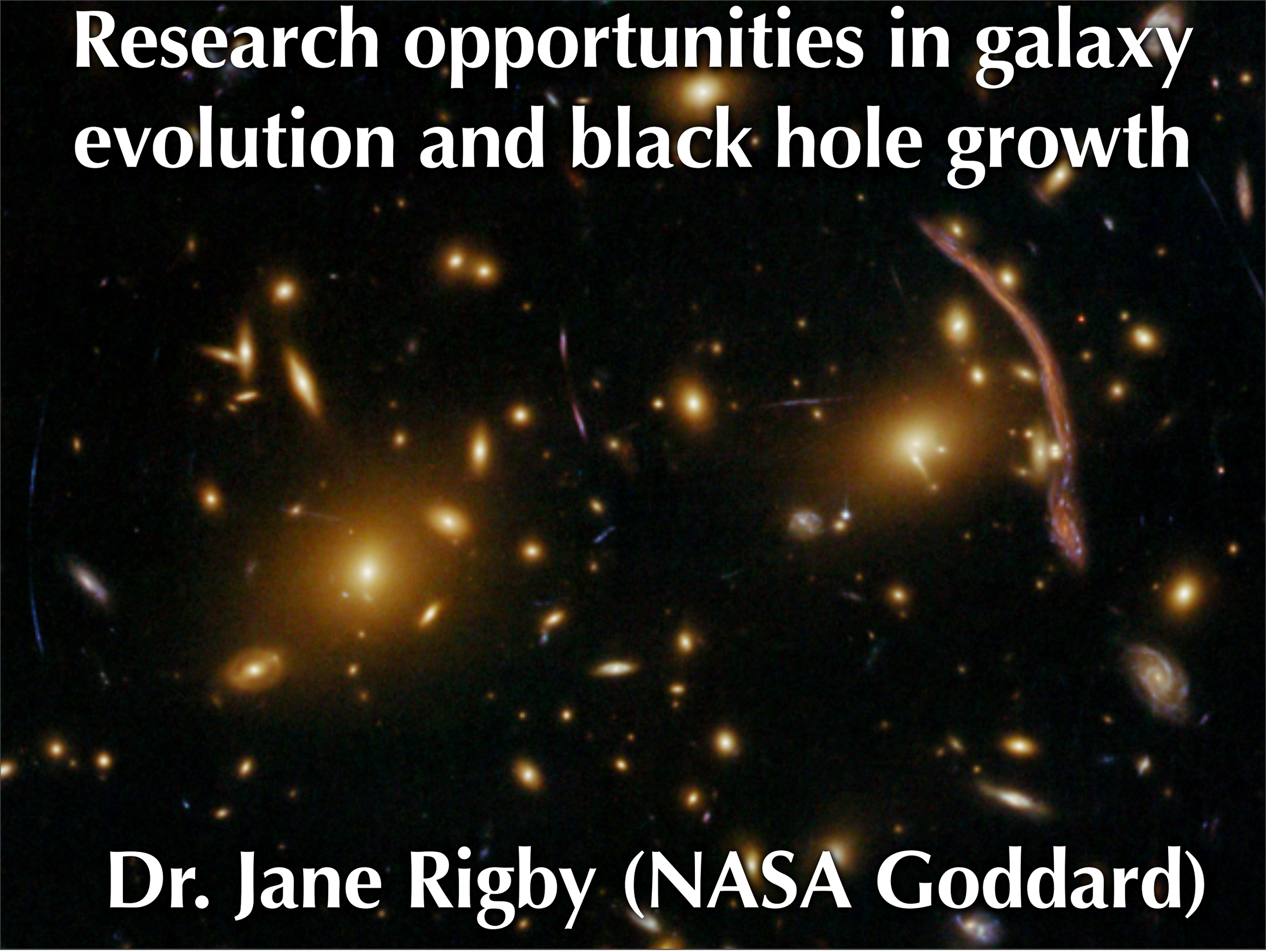
Research opportunities in galaxy evolution and black hole growth



Dr. Jane Rigby (NASA Goddard)

Who is Jane Rigby?

- Astrophysicist (tenure-track) at NASA Goddard.
- Former Spitzer Fellow & Carnegie Fellow.
- Multiwavelength, multi-telescope, ground-based and space-based observational astronomer studying galaxy evolution.
- Heavy user of Spitzer, Hubble, Magellan, Keck.
- Looking for good students.

Why work on galaxy evolution?

- Nice to figure out how we washed up here in this galaxy.

- Galaxy evolution is a thriving field that has driven the creation of new telescopes such as Spitzer, Herschel, Keck, Magellan, and JWST.

- Central black hole growth is somehow (how?) connected to how galaxies evolve.

My interests:

- Buildup of elements in galaxies over time.
- Physical conditions of star-forming galaxies.
- Importance of highly-obscured AGN.

Students I have advised or co-advised:

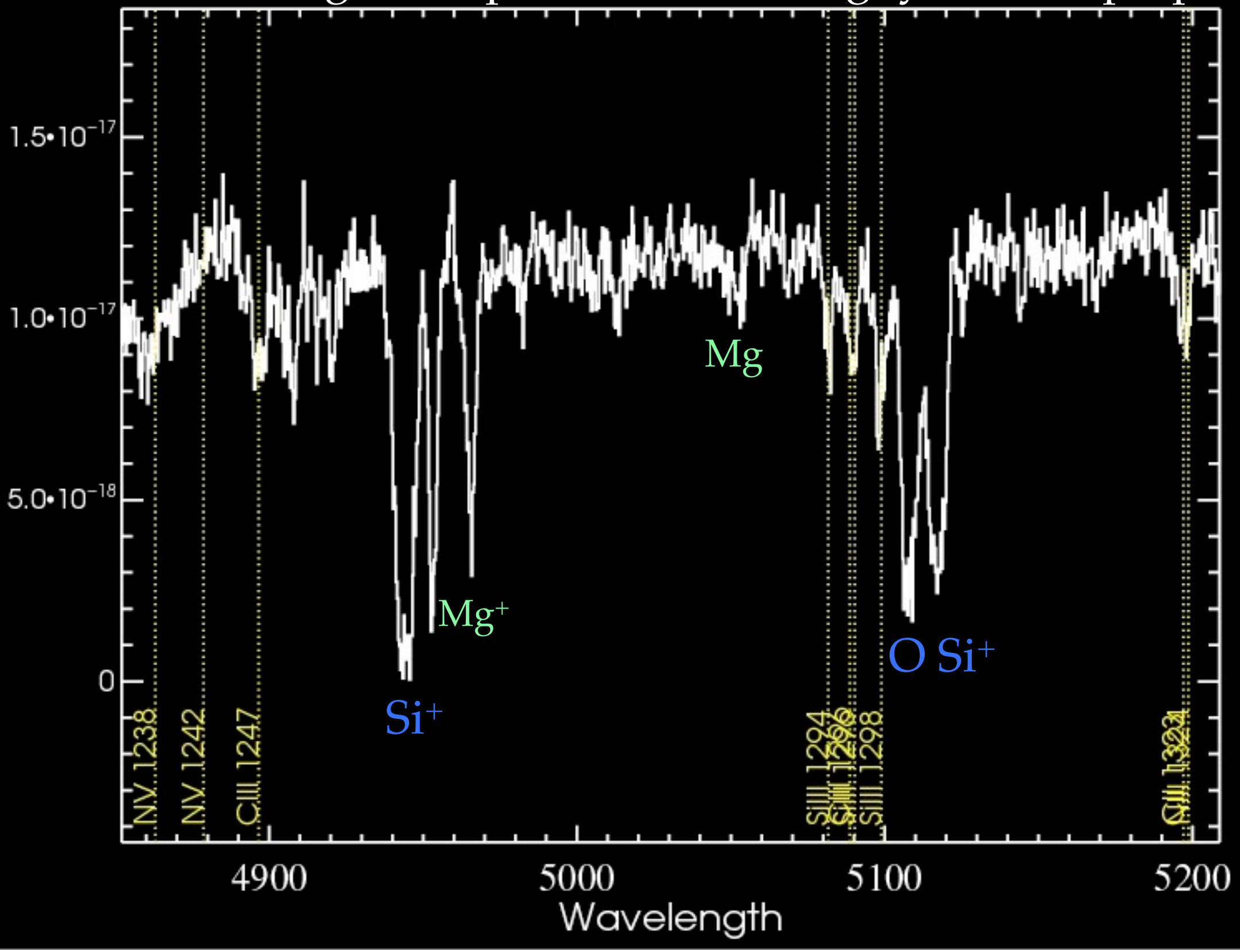
- Gonzalo Aniano (Princeton), summer grad
- Alice Olmstead (UMd), 2nd year project
- Eva Wuyts (U. Chicago), thesis

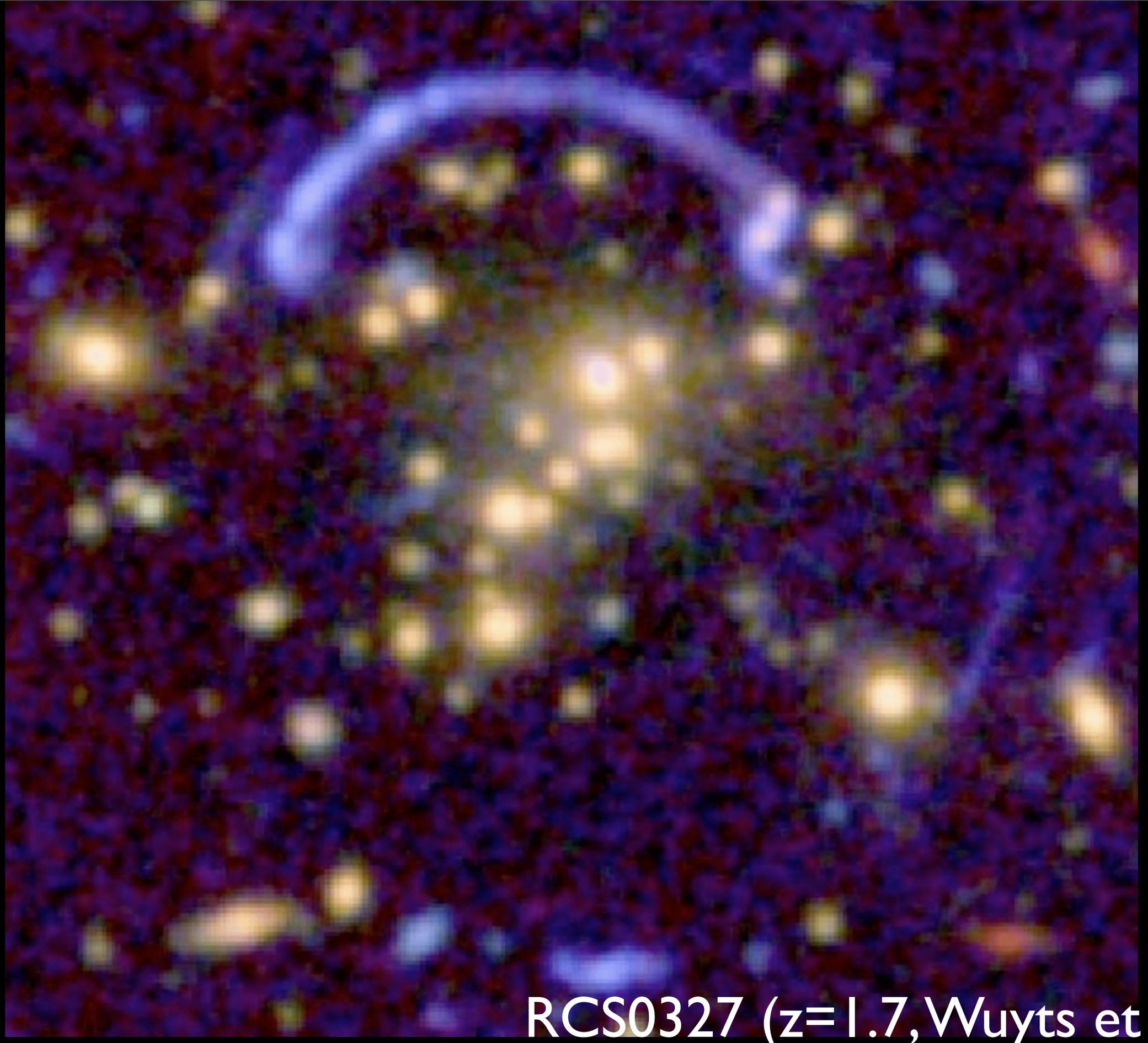
Potential student projects:

- Massive stars and outflowing gas in four galaxies at 1.7<z<3, from rest-UV spectra.
- The geometry of outflows at z=2, from HST/ACS ramp filter of MgII in the big blue arc.
- Dust reprocessing and ISM cooling in an L*ish galaxy at z=2, from Herschel spectra & images of the big blue arc.
- NuSTAR hard X-ray observations of nearby AGN and ULIRGs. Launch 3/2012.

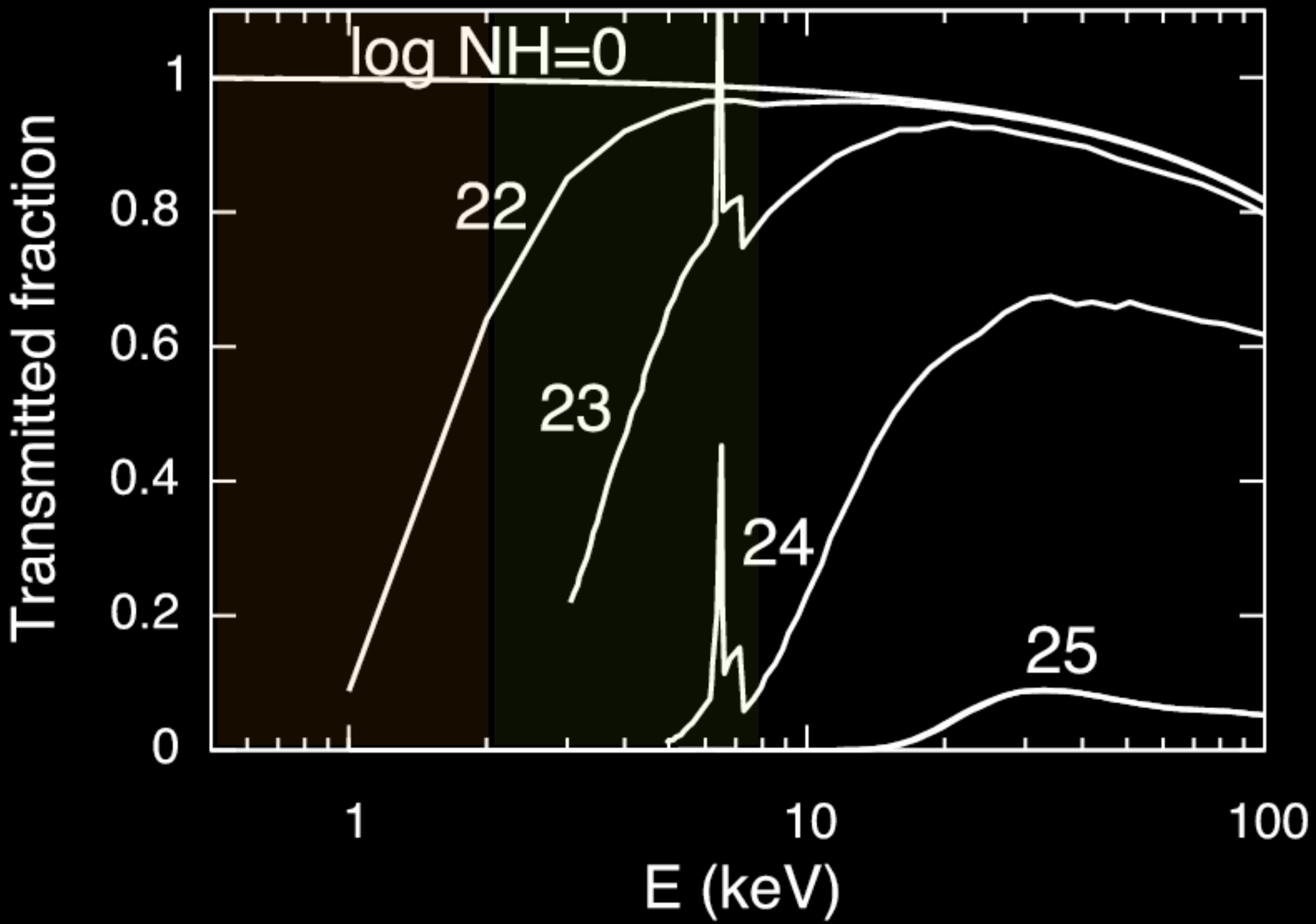
Rest-UV spectra of lensed galaxies

Magellan spectra, z=2.92, Rigby et al. in prep.




RCS0327 (z=1.7, Wuyts et al. 2010)

E>10 keV X-rays are a way to find buried AGN.



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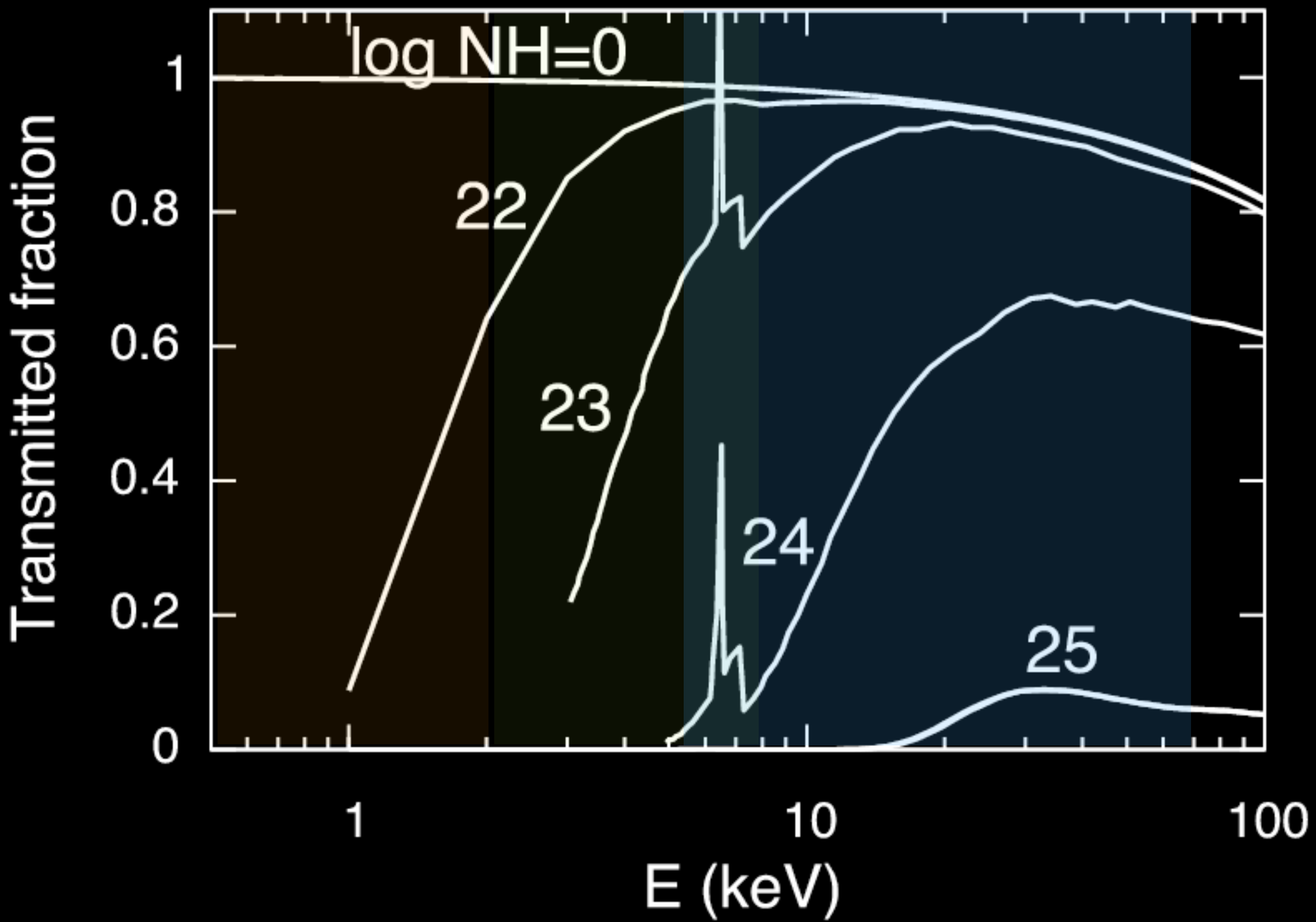

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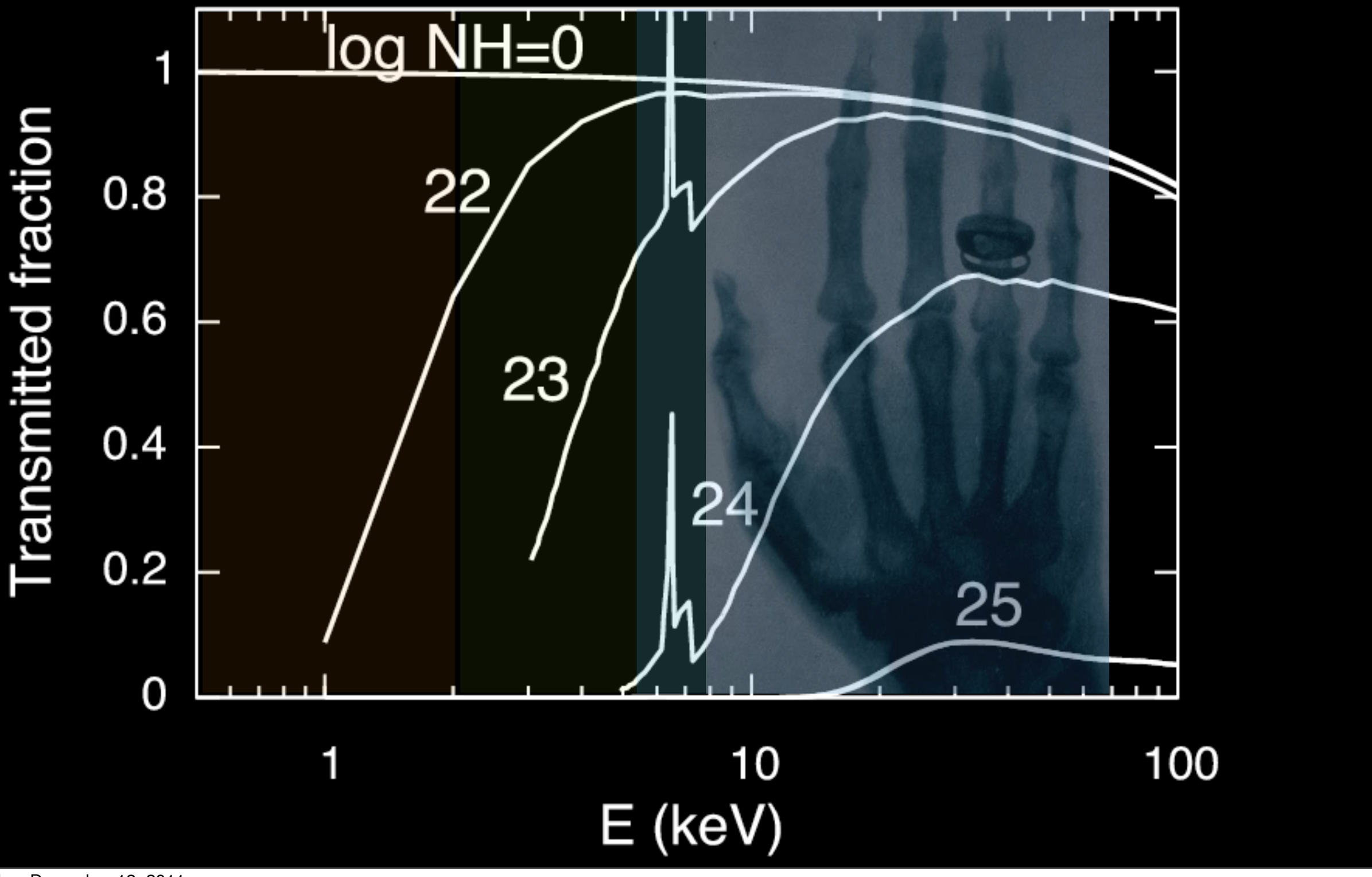
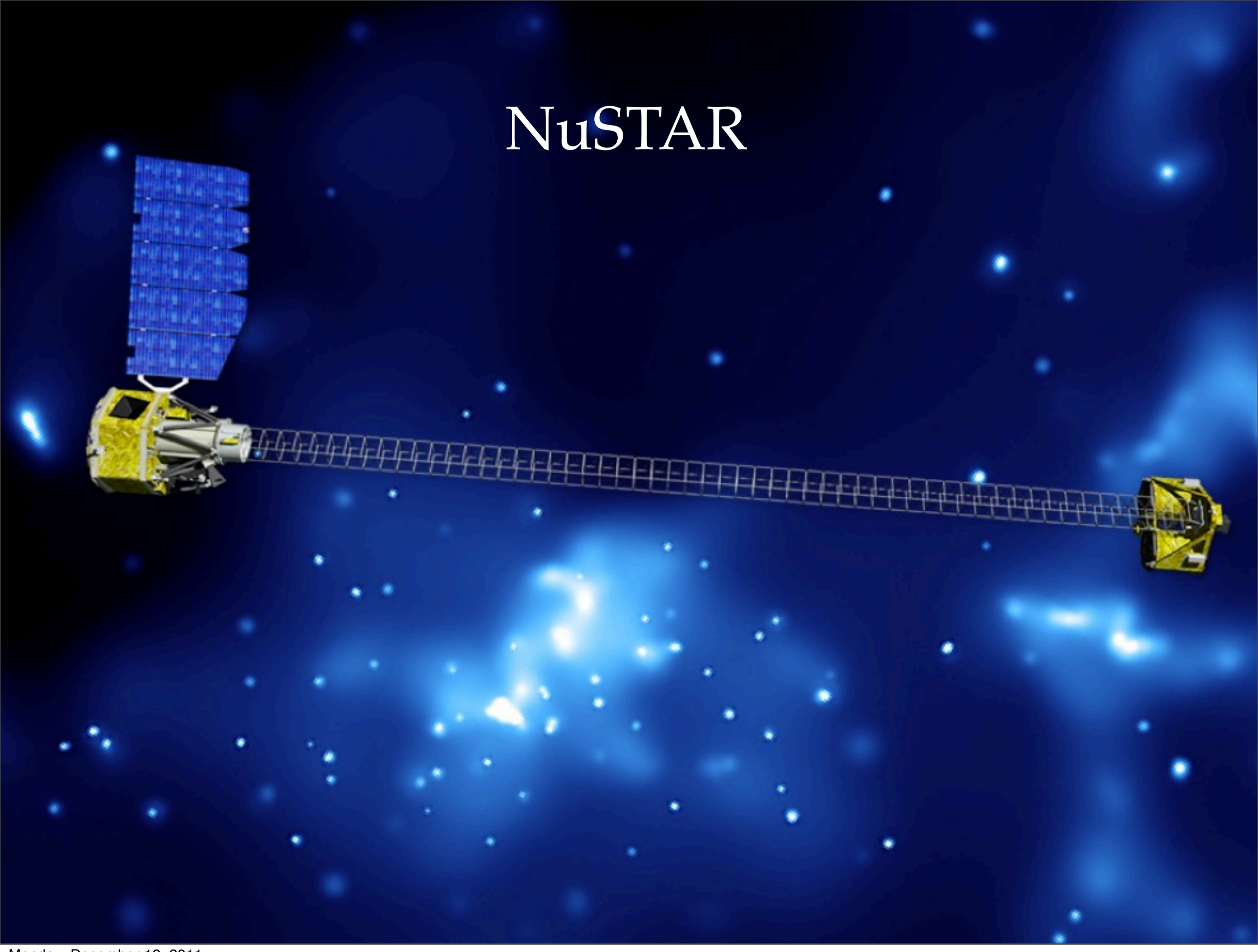
NuSTAR