X–Ray Spectroscopy with Constellation–X

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Support: Chandra X–ray Center, MIT HETGS Group

Produced by the Massachusetts Institute of Technology (MIT)
Sponsored by SAO & NASA

X–ray Spectroscopy with Constellation–X
Program

→ study ISM in our own and nearby Galaxies

cold absorption of background continuum sources

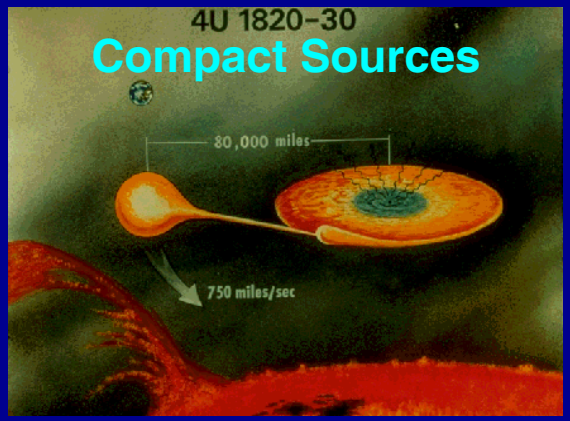
compact binaries, isolated NS, CVs, WDs

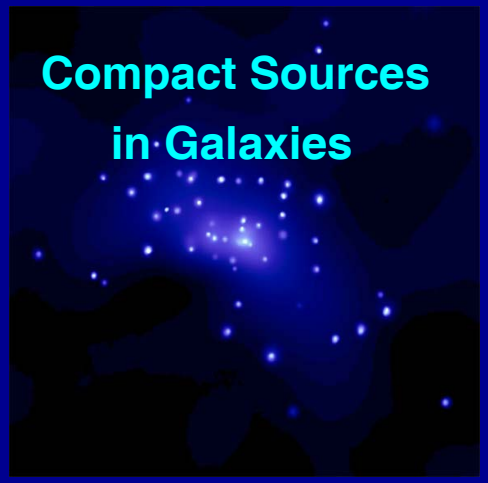
→ study CSM in our own and nearby Galaxies

warm/hot absorption in X–ray binaries, CVs

→ study absorption in active galaxies

cold&warm absorbers





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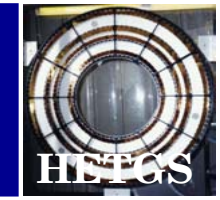
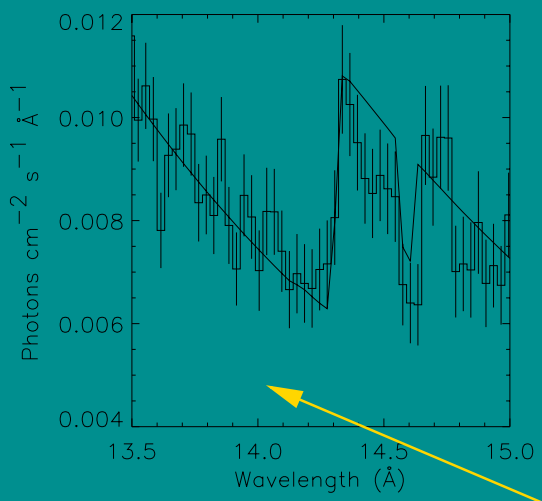
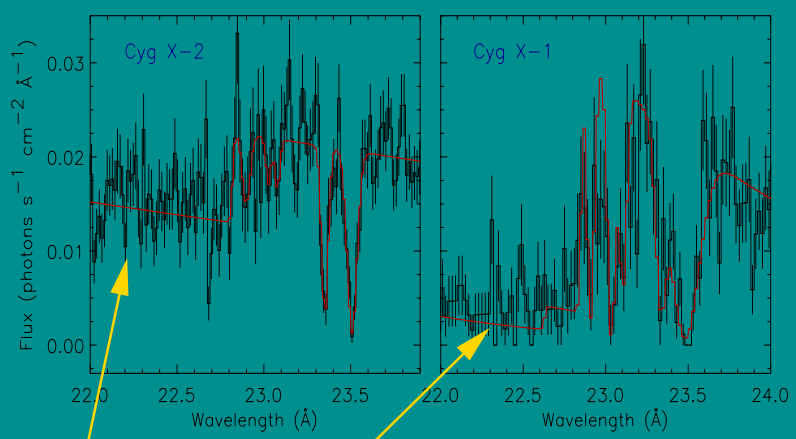
Resonance Absorption in our own Galaxy



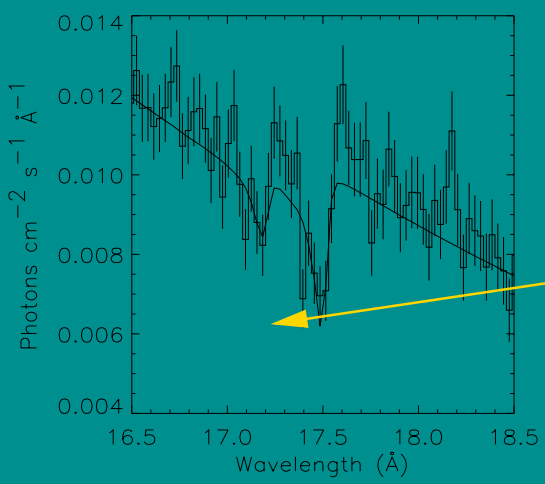
Ne–K shell

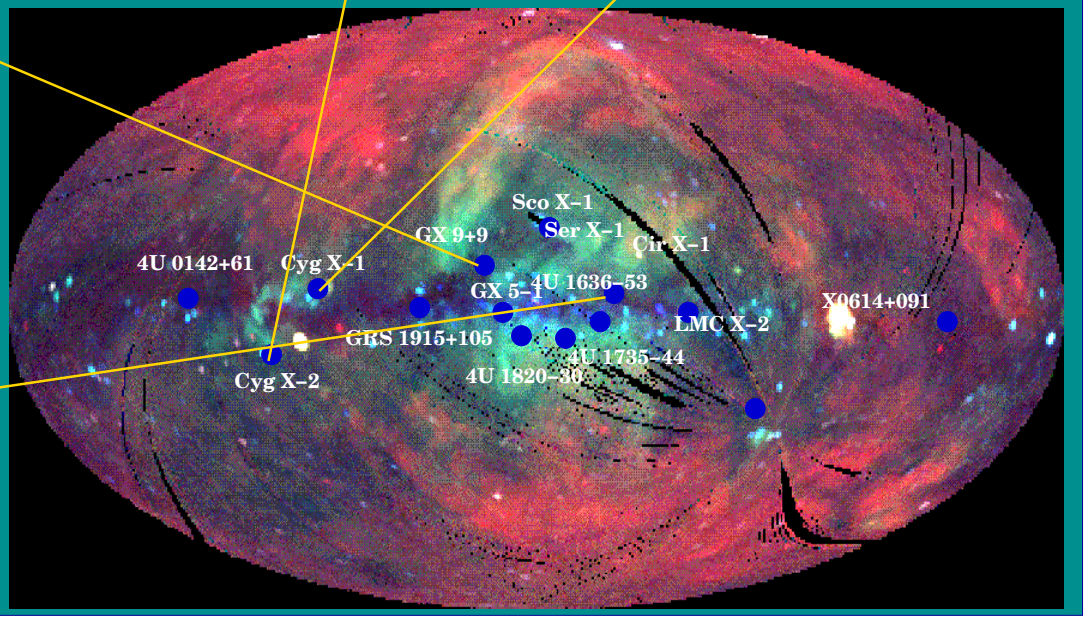


O–K shell



Fe–L shell





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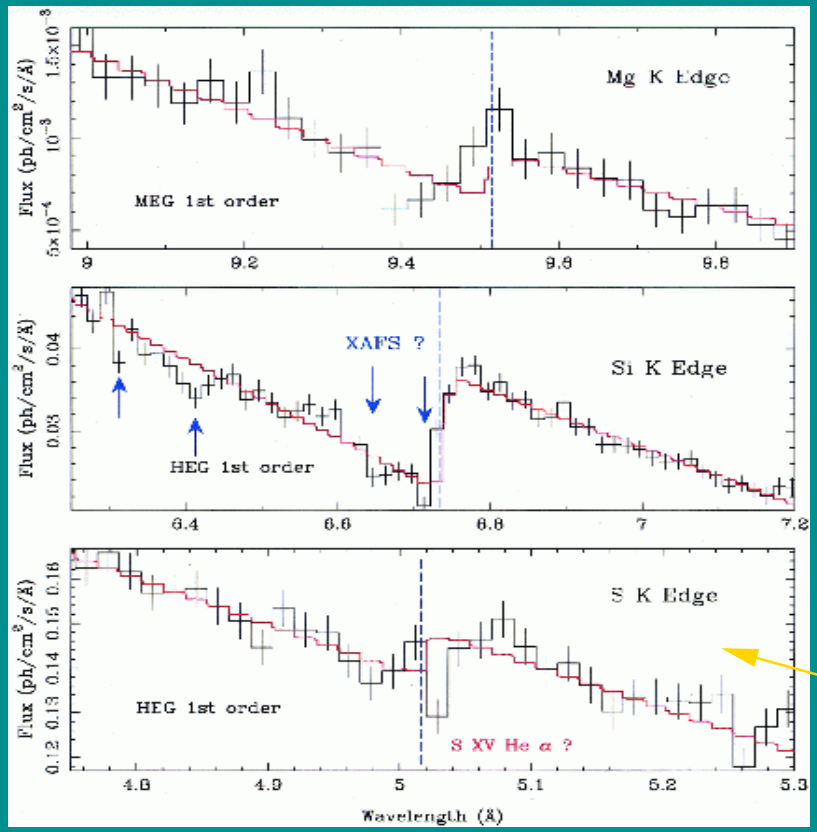
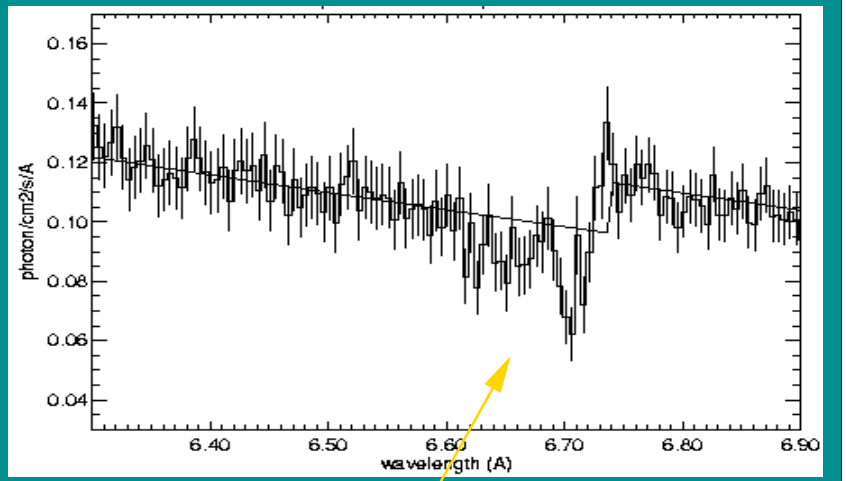
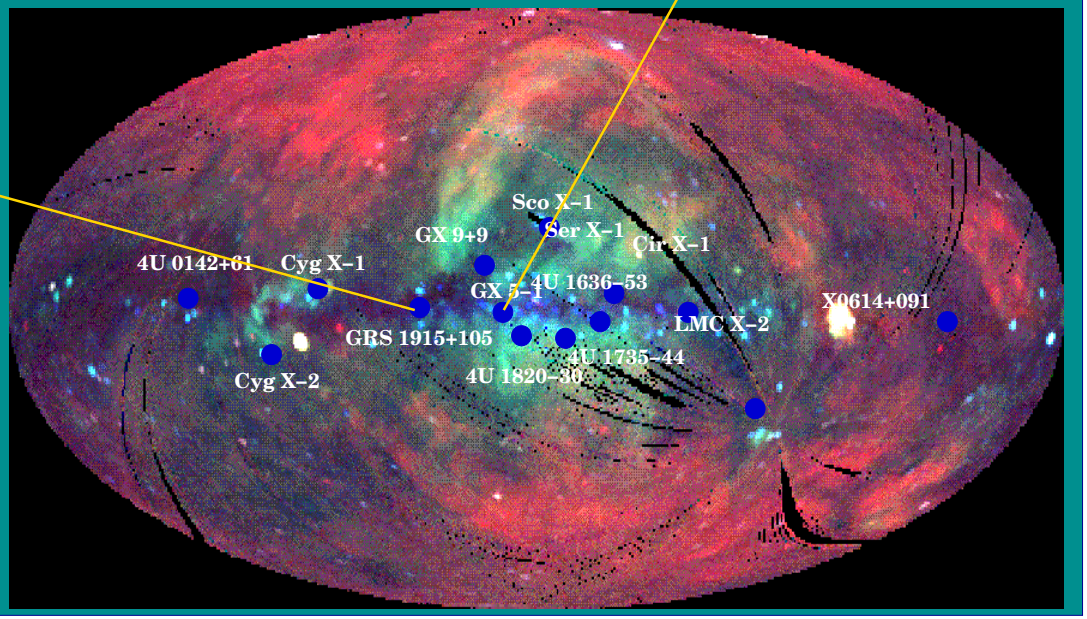
XAFS in our own Galaxy



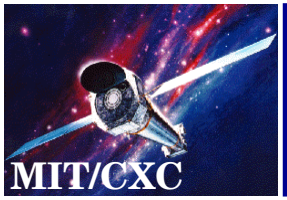
SiO2





Magnetites: Fe3O4...

Silicates: SiO2, FeSiO3, MgSiO3...



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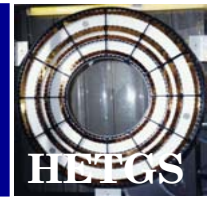
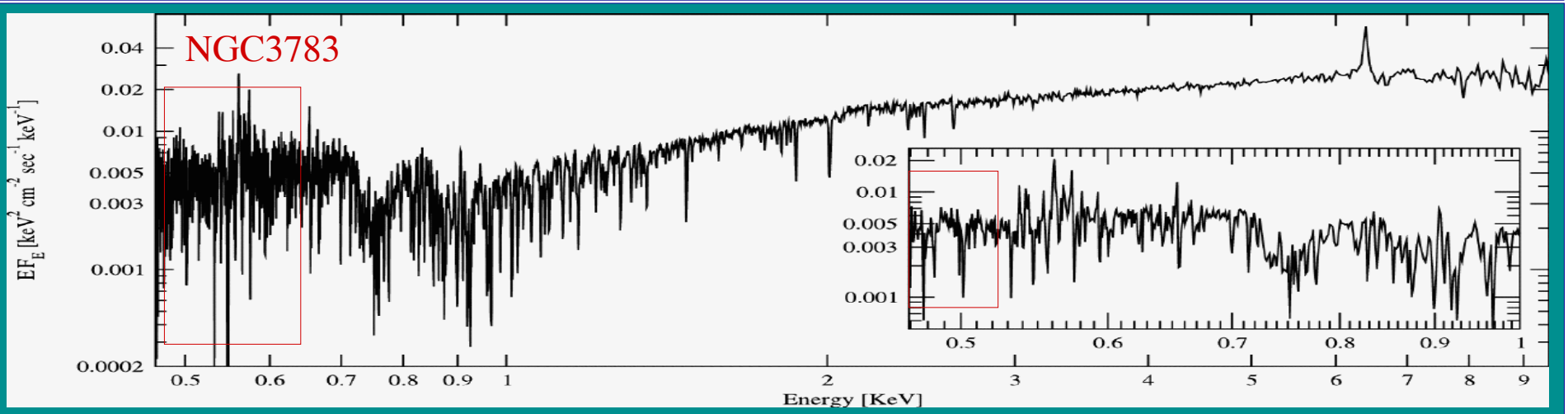
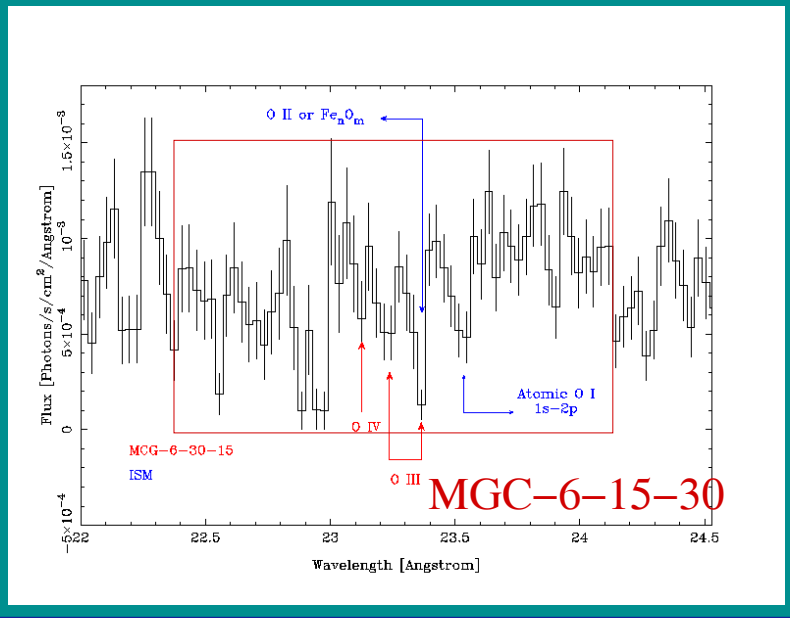
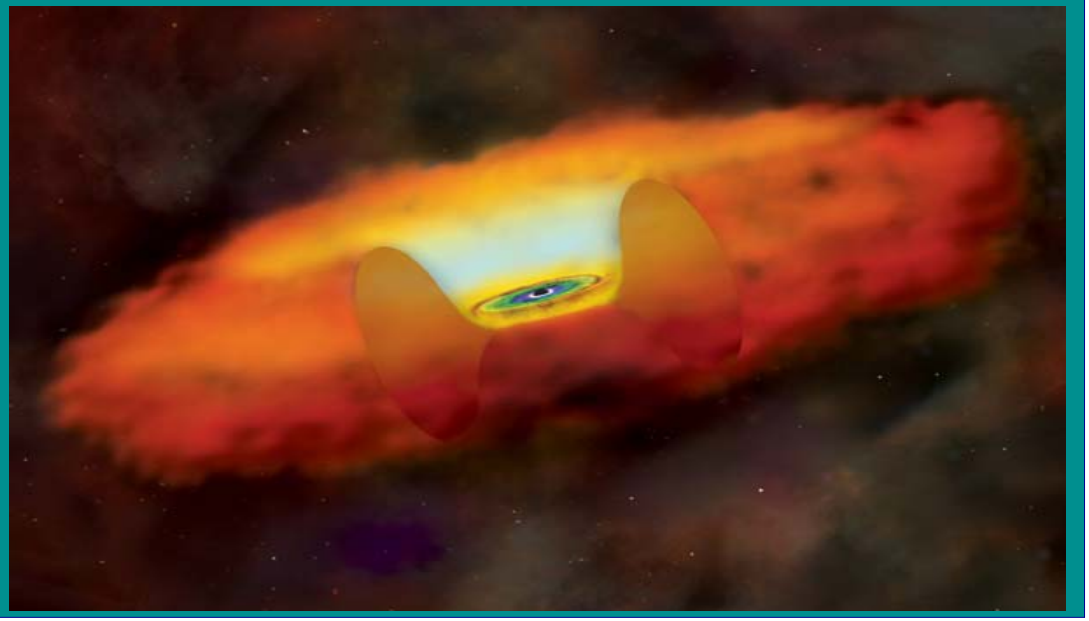
Resonance Absorption in other Galaxies









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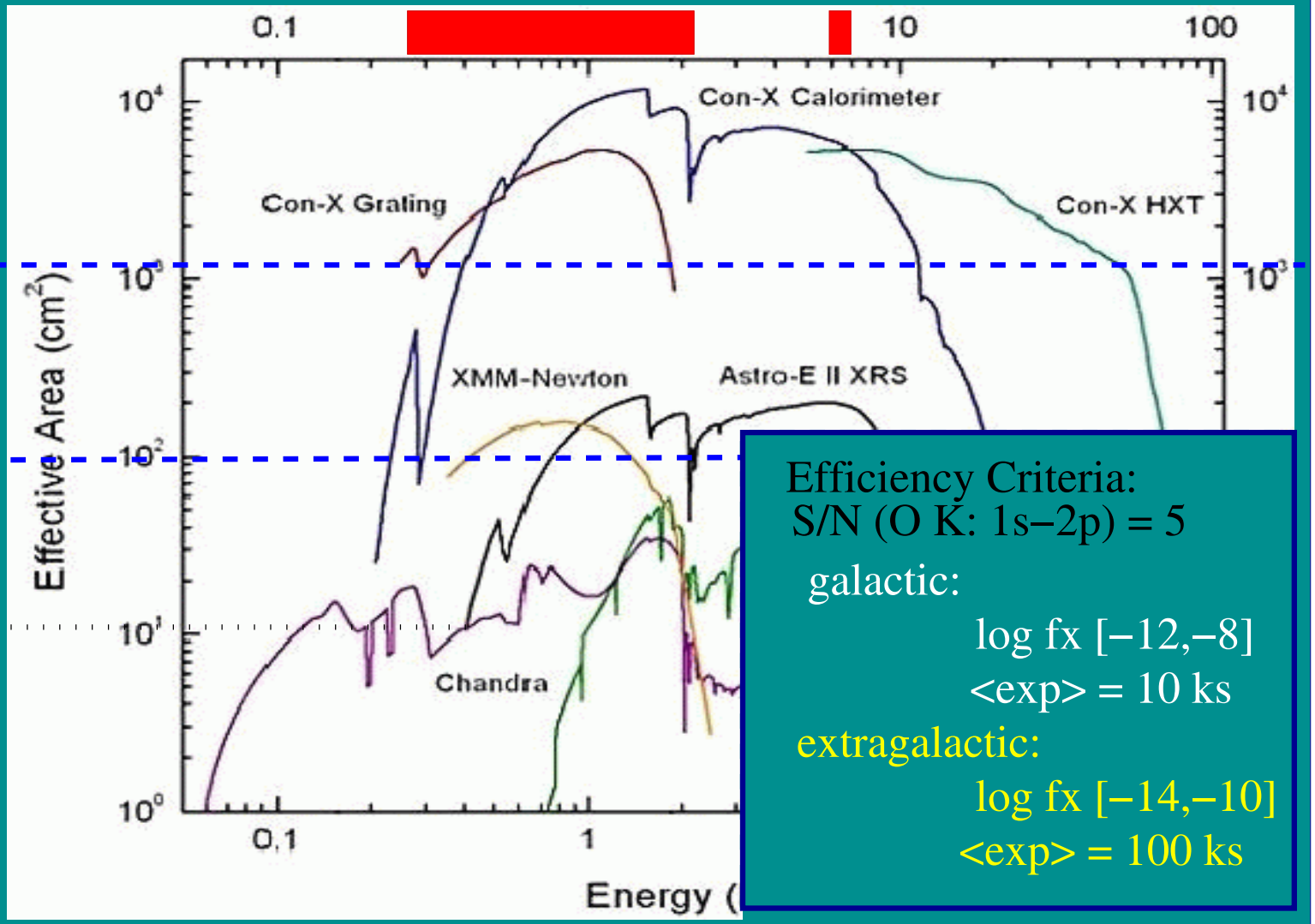
Effective Area / Survey Efficiency



extragalactic

galactic

Efficiency Criteria:
S/N (O K: 1s–2p) = 5

galactic:
log fx [–12,–8]
<exp> = 10 ks

extragalactic:
log fx [–14,–10]
<exp> = 100 ks

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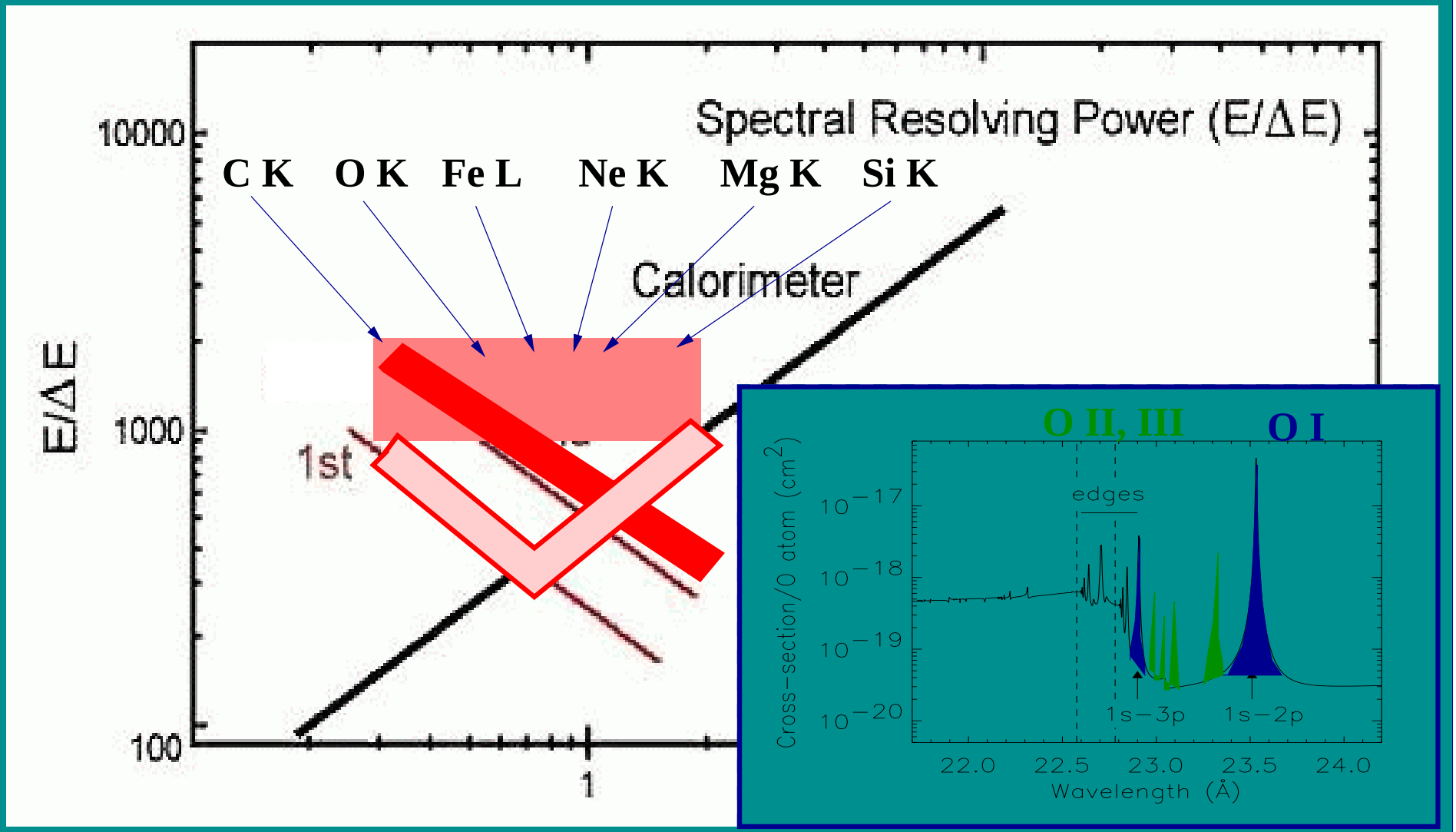
Spectral Resolution