Are AGN special? The NuSTAR and Chandra point of view

Alberto Masini[1], Ryan C. Hickox[1], and the NuSTAR team

[1]Dartmouth College, 6127 Wilder Laboratory, Hanover NH, 03755, USA

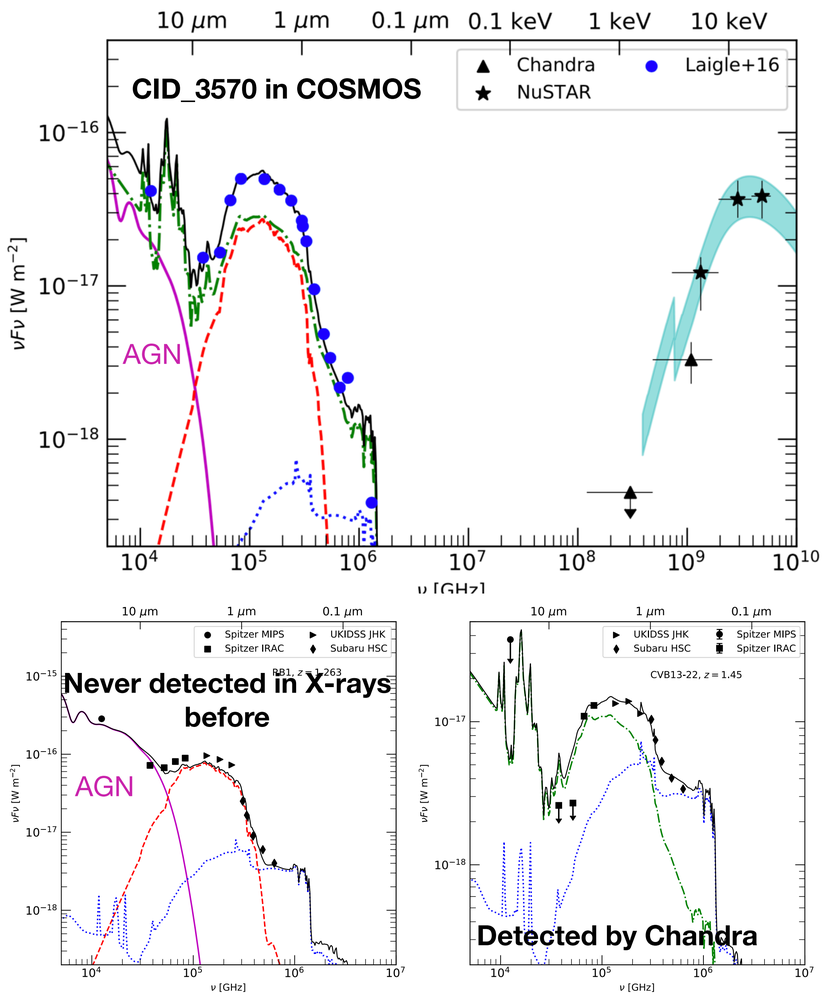

Figure 1. SEDs of new NuSTAR sources detected in the 8-16 keV band in the COSMOS and UDS fields.

1. Rare buried AGN with NuSTAR

Blind detection of NuSTAR COSMOS + UDS + ECDFS fields in the 8-16 keV band returns 72 sources, of which 3 are missing a counterpart in previous NuSTAR catalogs. From reliability cut, two are expected to be real (one in COSMOS, one in UDS).

While the COSMOS source has a secure counterpart in Chandra COSMOS-Legacy (Fig. 1, upper panel), the UDS one has two possible counterparts (Fig. 1, lower panels). The most likely one has never been detected in the X-rays before.

Two out of three unmatched sources show signatures of hard, heavily obscured AGNs at z~1.2, with the Compton hump redshifted in the NuSTAR 8-16 keV band.

2. Large scale structure, clustering and AGN-host connections: the CDWFS

The Chandra Deep Wide Field Survey (CDWFS; PI R. Hickox, Fig. 2) will push the central 6 deg² of the 9 deg² Bootes field from ~5 ks to ~30 ks of depth (bottom of Fig. 2).

Such unprecedented depth on large contiguous area, in combination with the excellent Chandra angular resolution, will allow precise studies of large scale structure using AGNs as tracers.

The huge dataset (281 pointings spanning ~15 years, bottom of Fig. 2), will allow to detect thousands of AGNs (expected ~6500) over a large dynamic range in L_X, allowing to explore the AGN-DM halo and AGN-host connections over cosmic time.

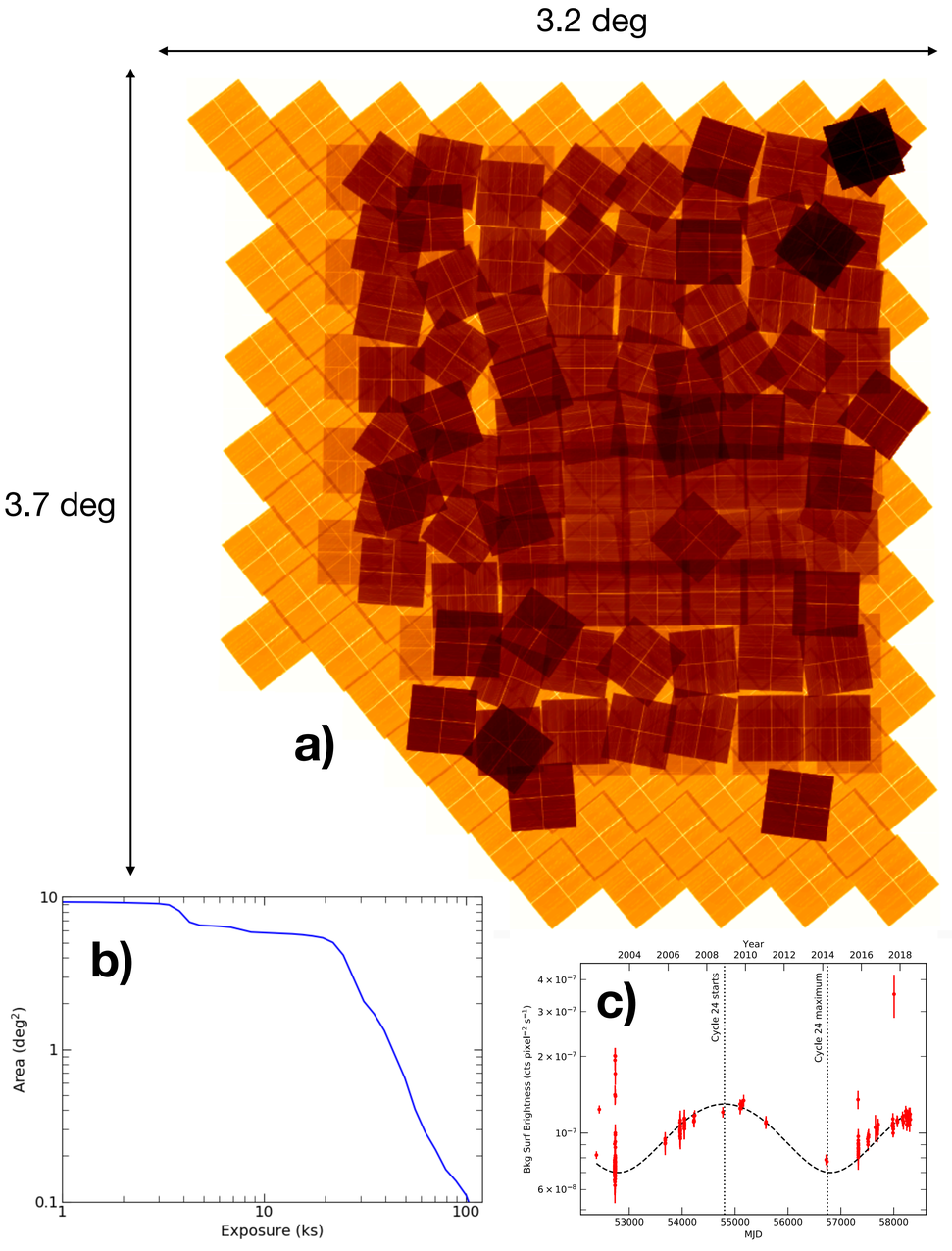

Figure 2. a) Exposure map of the CDWFS; b) area as a function of exposure, and c) intensity of Chandra instrumental background over time.

Acknowledgements

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References

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