



Some Astro-H Cluster Science

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How is Energy Dissipated in Mergers?



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Ask Maxim!



How is Energy Dissipated in Mergers?

- Mergers must induce ICM motions
- If turbulent (viscosity suppressed), may have Fe K FWHM ~ 10 eV
- Bulk flows of similar magnitude (200-500 km s⁻¹) may persist long after merger (Heinz et al.)
- Systematic survey of merging & 'cold front objects is needed



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Ask Ohashi-san & Andy!



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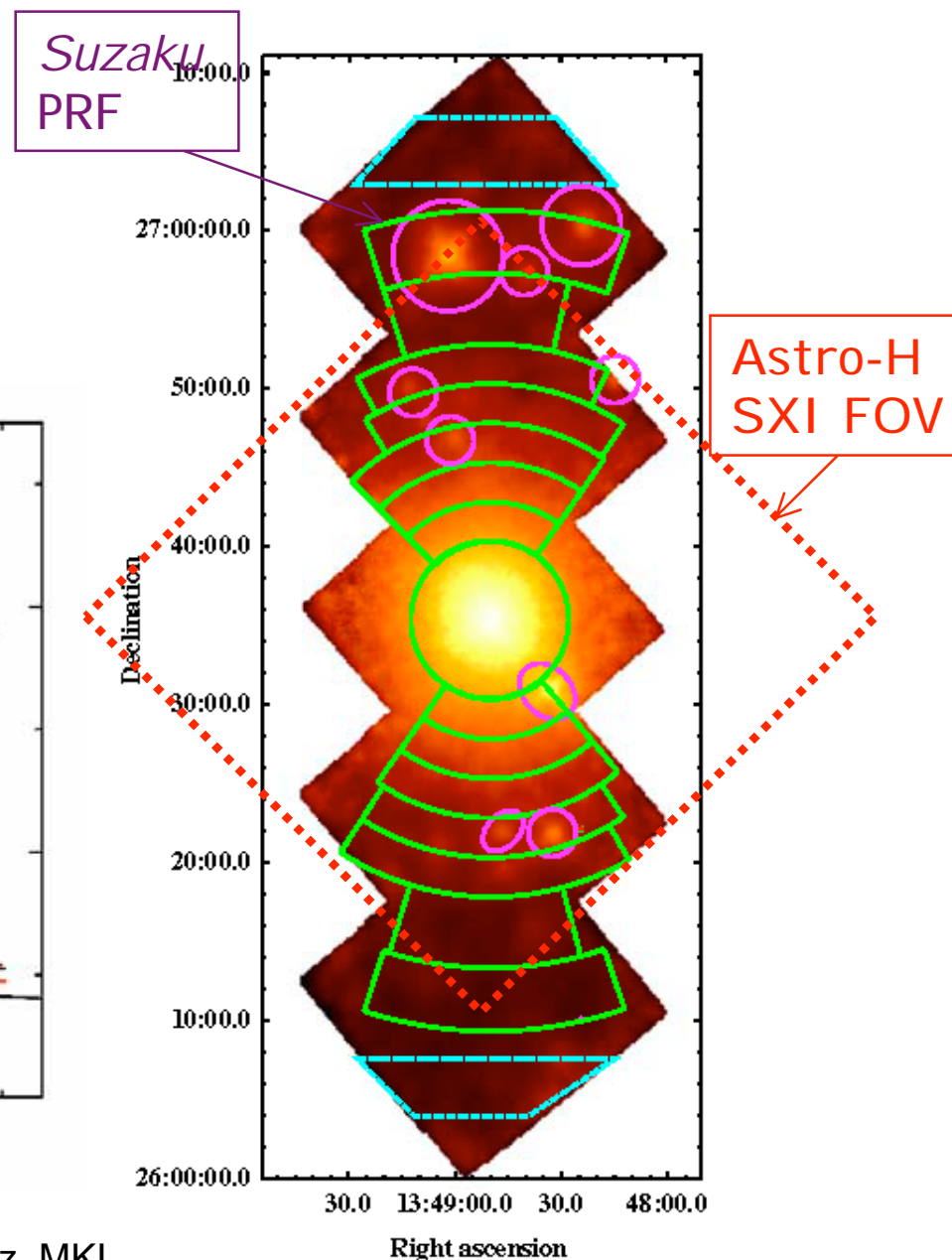
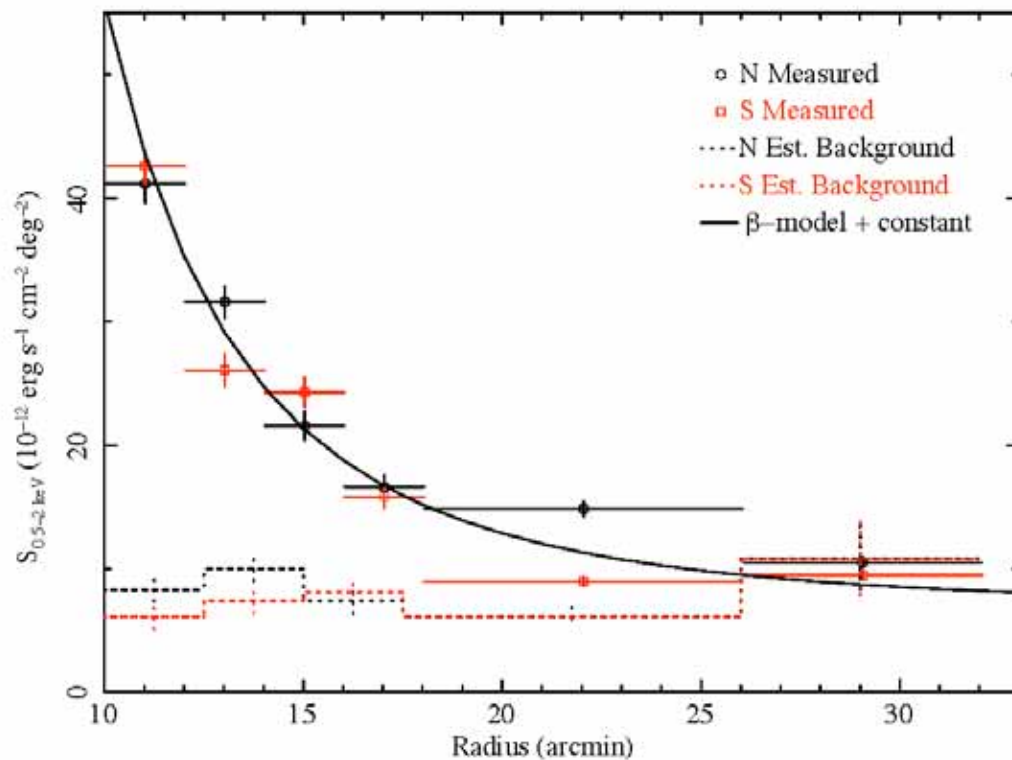
- Buoyant, AGN-inflated bubbles must displace the ICM. Is this motion a significant heat source?
- If metal-abundance profiles are extended by ICM motion (Rebusco et al) then Fe K line broadening should be observable (15 eV FWHM)
- Map of line-width might distinguish radial from isotropic motions
- Cores and abundance gradients of all bright, nearby bright cool-core clusters must be mapped.



What is the state of the ICM at $r > r_{500}$?

- Is it in hydrostatic equilibrium?
- Does it behave as simulations predict?
- What can it tell us about cluster formation?
- Astro-H will have Suzaku's low-background orbit
- SXI's much larger field of view can exploit deep SXS exposures
- Better angular resolution for SXI is crucial:
 - * Minimize sky area lost to bright point sources
 - * Maximize depth to minimize cosmic variance

Suzaku on the outskirts of A 1795





Astro-H is VERY exciting:

Thank you!