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Extragalactic X-ray Surveys from Deep to Wide

Monday 7 October 2024 09:00 (40 minutes)

I will briefly review what X-ray surveys and their multiwavelength follow-up have revealed about the sources constituting the cosmic X-ray background (CXRB), focusing on results from the past 25 years from missions including Chandra, Einstein Probe, INTEGRAL, NuSTAR, SRG, Swift, and XMM-Newton. I will first detail the identification, classification, and basic nature of the extragalactic sources detected in X-ray surveys: active galactic nuclei, galaxies, clusters and groups, and transients. Since active galactic nuclei are the dominant contributors to the CXRB, I will present some fundamental insights about their demographics, physics, and ecology revealed by X-ray surveys. I will conclude by describing some significant unresolved questions and prospects for advancing the field with new observations, future missions, and complementarity with multi-wavelength very wide-field surveys.

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