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# A search for missing baryons with the Sunyaev-Zel'dovich effect

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Observations of galaxies and galaxy clusters in the local universe cannot account for the total baryon content inferred from measurements of the cosmic microwave background and from big bang nucleosynthesis [1,2]. Locating the missing baryons has been one of the major challenges in cosmology. Cosmological simulations predict that they are spread throughout filamentary structures in the cosmic web, forming the warm-hot intergalactic medium (WHIM) [3]. Large observational searches have resulted in a few detections of the WHIM [4], but there was no clear picture of the large-scale extent of this gas. I will present the recent detection of the WHIM in stacked large-scale filaments through the thermal Sunyaev-Zel'dovich effect [5]. This result establishes the presence of diffuse ionised gas in large-scale filaments, and suggests that the missing baryons problem may be resolved via observations of the cosmic web.

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