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# New insights to the Ne VIII- and O VI-traced multiphase CGM from CASBaH

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## Abstract

An understanding of the circumgalactic medium (CGM) as a massive, likely multiphase baryon reservoir has emerged through five decades of observational and theoretical efforts. However, the relative mass distribution of the various phases and their relation to host galaxy properties remain unconstrained key variables in galaxy formation and evolution models. I will present new CGM science results from the COS Absorption Survey of Baryon Harbors (CASBaH), which provides unprecedented gas diagnostic power through a rich suite of rest-frame extreme-ultraviolet (600 - 1000 Angstroms) spectral transitions, such as Ne VIII and O II/III/IV, in addition to those more well studied at longer wavelengths (O VI, C III, Mg II). Yielding the first statistical sample of galaxy-associated Ne VIII CGM absorption systems, we find that the Ne VIII-traced inner CGM comprises a large amount of mass in the warm-hot  $10^5$ - $10^6$  K regime. Also, our large sample of O VI CGM absorbers reveals a large extent of O VI-traced gas out to and beyond the galaxy virial radius and exhibit a strong correlation with the galaxy specific star formation rate over three orders of magnitude.

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