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Multi-phase interplay in the jellyfish galaxy JW100

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JW100 is a massive spiral galaxy infalling in the galaxy cluster Abell 2626. The extreme intra-cluster medium pressure is currently stripping the galaxy of its cold gas, producing the peculiar filaments typical of a jellyfish galaxy, where star formation is taking place. Interestingly, MUSE and Chandra observations revealed two odd characteristics of this galaxy. On the one hand, MUSE revealed an elongated, ionized tail of cold gas whose spectral properties can not be explained by star-formation only. On the other hand, Chandra detected a striking, diffuse X-ray emission that follows remarkably the stripped tail.
We performed an accurate study of the spectral properties of the X-ray emitting plasma, its correlation with cold galactic filaments and the interaction of the galaxy with the surrounding ICM. The emergent picture is that the interplay of cold ISM and hot ICM originated the X-ray emitting plasma that, in turn, may have played a role in the origin of the extended ionized structure. Therefore, JW100 represents an excellent laboratory to study the interaction between the different gas phases and its implications for star formation.

Topic

Hot and diffuse baryons

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