A deep Chandra observation of the Perseus cluster: shocks and ripples [A.C. Fabian et al]  

A.C. Fabian\textsuperscript{1}, J.S. Sanders\textsuperscript{1}, S.W. Allen\textsuperscript{1}, C.S. Crawford\textsuperscript{1}, K. Iwasawa\textsuperscript{1}, R.M. Johnstone\textsuperscript{1}, R.W. Schmidt\textsuperscript{1,2} and G.B. Taylor\textsuperscript{1}  

abstract We present preliminary results from a deep observation lasting almost 200 ks, of the centre of the Perseus cluster of galaxies around NGC 1275. The X-ray surface brightness of the intracluster gas beyond the inner 20 kpc, which exhibits periodic ripples. A clear density jump at a radius of 24 kpc to the NE, about 10 kpc out from the bubble rim, appears to be due to weak dissipating sound waves seen as the observed fronts and ripples, giving a rate of working which balances the radiative cooling within