Chandra observations of the anomalous X-ray pulsar AXP J170849.0-4000910.

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ABSTRACT: We present the results of Chandra continuous clocking mode observations of the Anomalous X-ray pulsar J1708-4009, made on March 4, 2004 (MJD 53189). The 0.3-10.0 keV spectrum is well fitted by a power-law plus blackbody model, as seen in the earlier *Beppo*SAX and XMM-Newton observations. However, we find that while the 0.5-10.0 keV unabsorbed source flux has remained almost unchanged (within statistical limits) at 8.78×10^{-11} ergs cm^{-2} s^{-1}, as compared to the previous XMM-Newton observation (on MJD 52879), the trend towards spectral softening has reversed, with a harder $\Gamma = 2.61^{+0.13}_{-0.15}$ and higher $kT = 0.473^{+0.003}_{-0.003}$ keV. We present analysis of the phase resolved spectra, including fits to a two component black-body model. Our data does not reveal the 8.1 keV absorption feature as seen in the previous *Beppo*SAX observation, in either the phase-integrated, or in the phase-resolved spectra. Timing analysis of our data shows that the period is consistent with spin-down ephemeris determined for the post 2^{nd} glitch era, from earlier RXTE/PCA observations.