RESULTS FROM A MULTI-WAVELENGTH OBSERVATION OF QUasar JETS

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We establish that strong X-ray emission from FSRO jets is a common feature, having discovered it in 1 of our 20 sources despite our short exposures. Including sample members already in the Chandra archive, we find jet X-rays in 6 of the 18 sources. The X-ray morphology is varied, but in general its peaks coincide with radio peaks, the X-ray flux tends to be more concentrated towards the base of the jet and drops abruptly when the radio emission traces a sharp bend. We rule out simple synchrotron models that predict such a morphology, implying that the X-ray sources are dominated by inverse Compton IC scattering. Fitting models of IC scattering of the cosmic microwave background suggests that these jets are aligned with a few degrees of our line of sight, with bulk Lorentz factors of a few to ten and magnetic fields slightly stronger than $10^4 \, \mu G$.

The X-ray morphology of these sources has been compared to the predictions of simple synchrotron models, taking into account the uncertainties in the observed X-ray fluxes and the X-ray spectral indices.

The X-ray emission is consistent with a scenario in which the X-ray emission is produced by inverse Compton scattering of the cosmic microwave background. The observed X-ray fluxes are consistent with the predictions of inverse Compton models, taking into account the uncertainties in the observed X-ray fluxes and the X-ray spectral indices.

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