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Beppo SAX X-Ray Observations of PKS 1934−63 and S5 1946+708

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Abstract: X-ray observations of PKS 1934−63 and S5 1946+708 have been made with Beppo SAX lasting 100 and 40 ksec, respectively. Both sources were detected, and in both there is evidence (at 90% confidence) of a strong iron Kα line which would indicate that the nuclei are surrounded by Compton thick material ($\sim$1 g cm^{-2}).

For 1946+708 VLBI H I absorption data are available from the literature. With the condition that free–free absorption should be modest for the source to be observable a minimum radius of around 20 pc is derived for the absorbing torus. The torus is predominantly molecular with a density of 10^8 cm^{-3}. The corresponding pressure is rather high. Observations with XMM have been requested to verify the large equivalent width of Kα with a better confidence level.

In 1934−63 no important H I absorption was previously detected and no nucleus has been seen in radio data at 8 GHz. If this is due to free–free absorption a molecular torus with a radius less than 5 pc could be responsible. The density would be 10^8 cm^{-3} or more.

The relatively low S/N ratio of our observations does not allow a fully convincing conclusion to be reached. But our discussion shows that the combination of X-ray and high resolution 21-cm absorption data can provide important information on the physical parameters in the absorbing 'torus'.

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