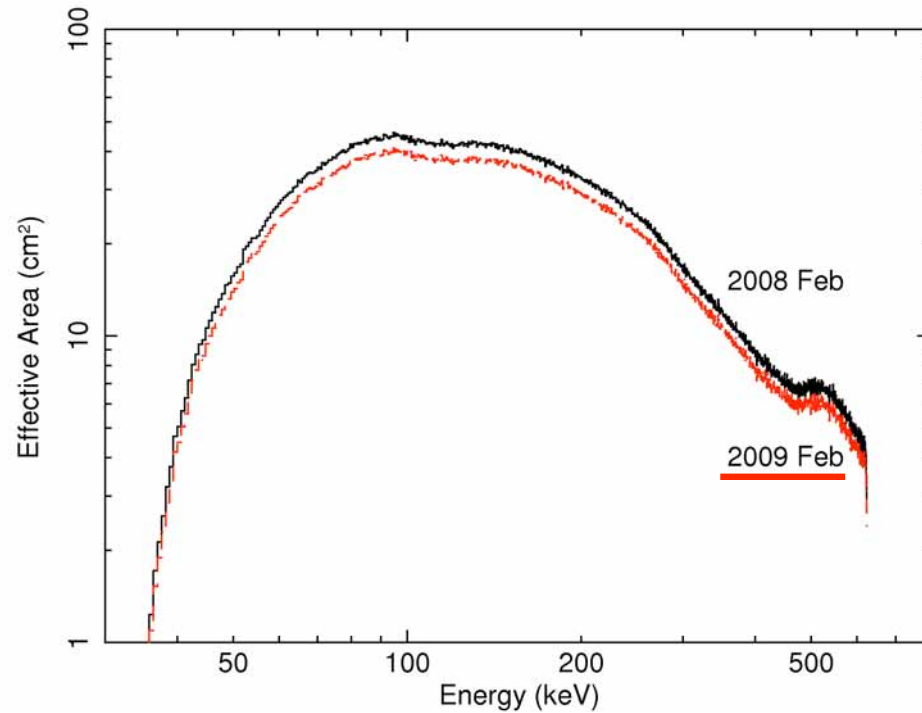


SGD performance

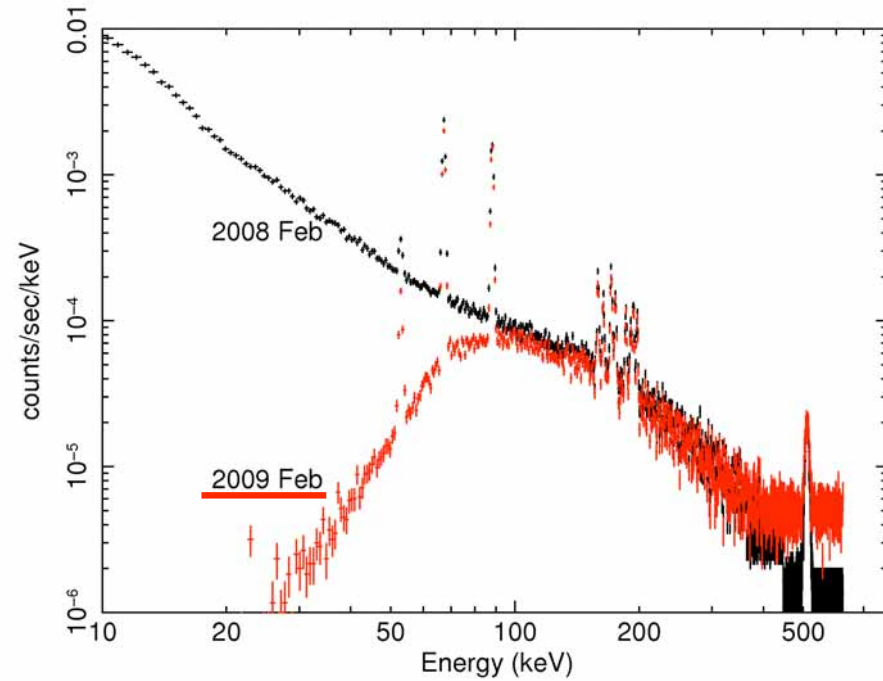
Y. Terashima, A. Bamba

SGD area and BGD

Area

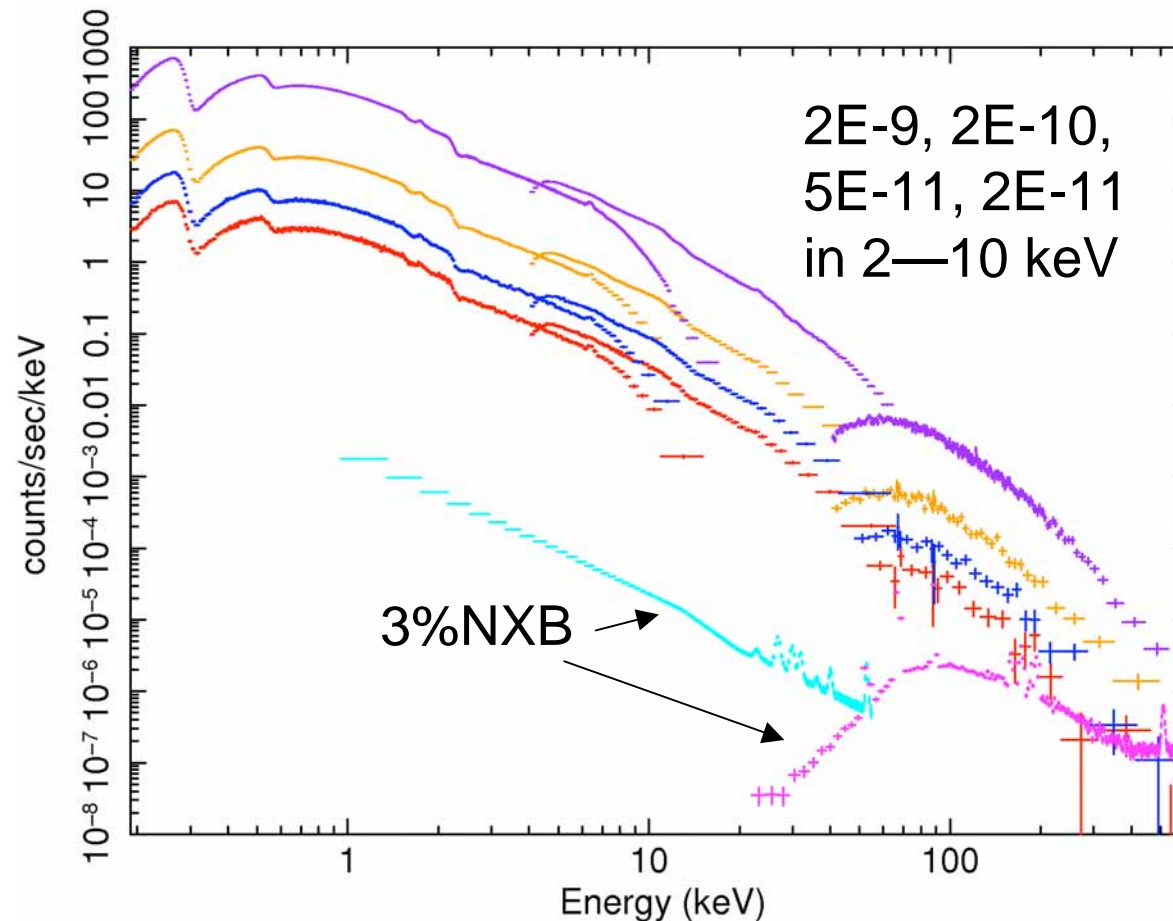


BGD



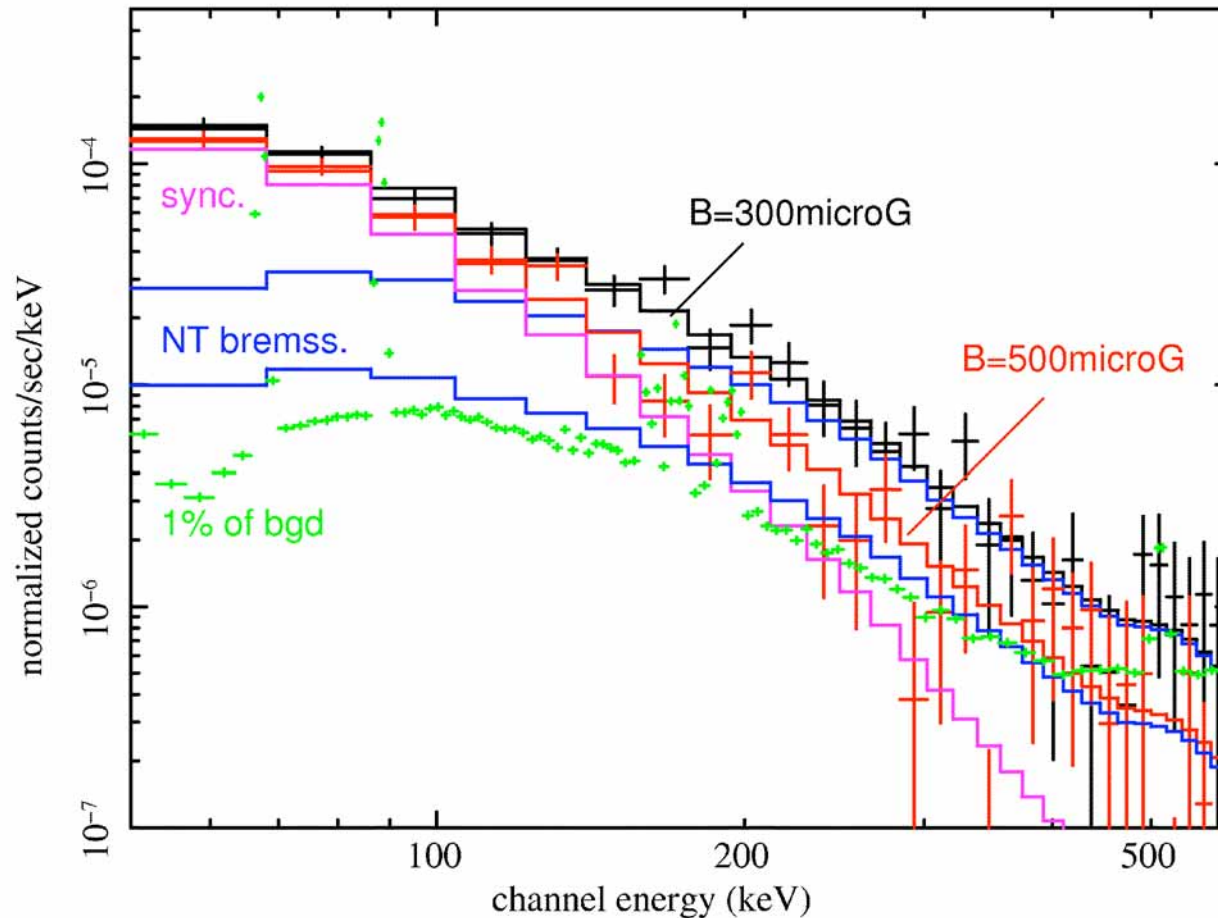
Compton mode: much better than the photo-absorption mode in suppressing background

SGD background (Compton mode)



For SGD, 3% NXB (expected detection limit) equals to 1 mCrab intensity at 200-300 keV. Firm detection of 1 mCrab source at 150 keV is possible.

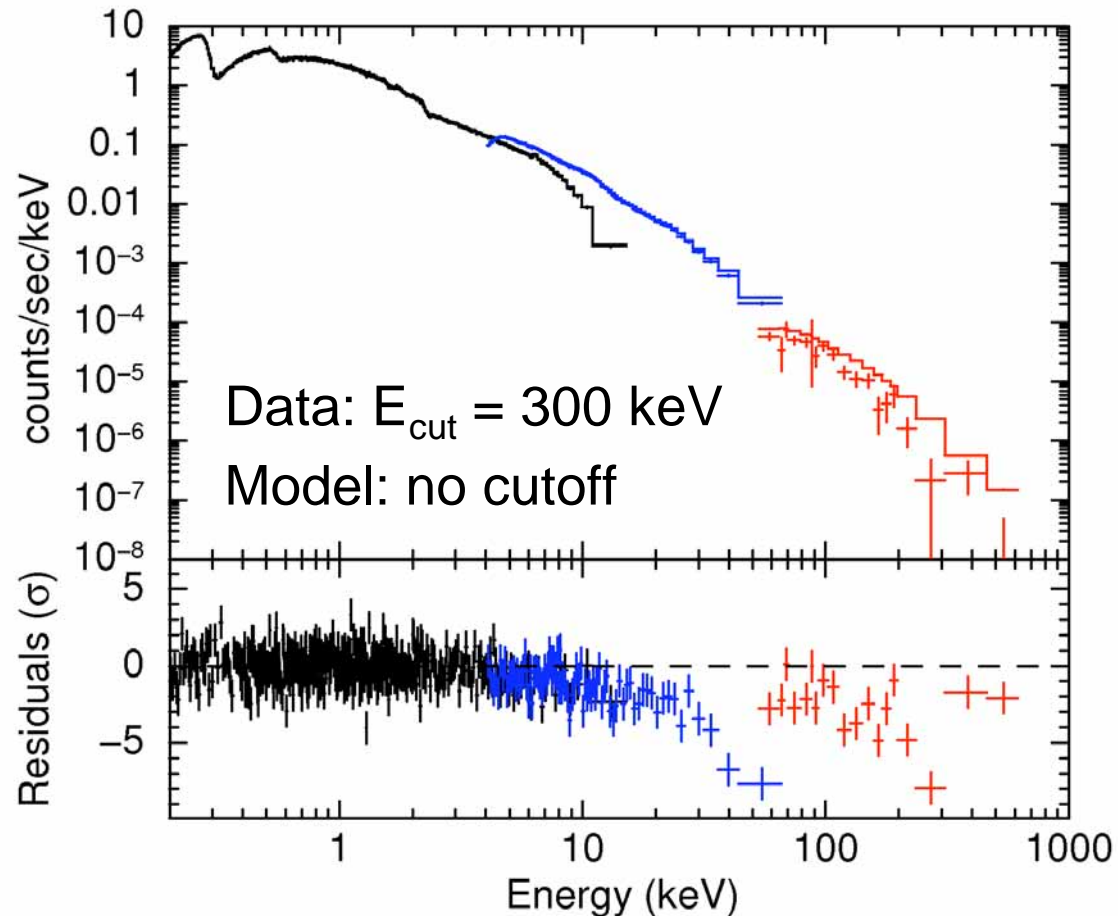
Cas-A



Non-thermal bremsstrahlung has harder spectrum than synchrotron emission, and can be detectable above 100 keV

Given the Synchrotron flux, magnetic field can be constrained

AGN with SGD



For 1 mCrab AGNs, cut off energy at 300 keV can be determined as $250 \pm 40 \text{ keV}$, factor of 2—4 better than the case without SGD

Spectral constraint will be better than all existing missions